

# Canada's Core Public Infrastructure Survey, 2016

## Wastewater Assets

CSA00001

This organization does not own or lease this asset.

**CONFIDENTIAL once completed.**

Si vous préférez recevoir ce document en français, veuillez nous appeler au numéro sans frais suivant :

**This information is collected under the authority of the *Statistics Act*, Revised Statutes of Canada, 1985, Chapter S-19.  
COMPLETION OF THIS QUESTIONNAIRE IS A LEGAL REQUIREMENT UNDER THIS ACT.**

### The purpose of this survey

Statistics Canada is undertaking this survey to provide useful statistical information on the stock, condition, performance and asset management strategies of Canada's core public infrastructure assets owned or leased by the various levels of government and Indigenous entities.

The information compiled by this survey will be used by analysts and policy-makers to better understand the current condition of Canada's core infrastructure. This will enable all levels of government to develop policies to support the efforts in improving Canada's core public infrastructure and help monitor and report progress on achievement of desired outcomes. Your information may also be used by Statistics Canada for other statistical and research purposes.

### Confidentiality

Statistics Canada is prohibited by law from releasing any information it collects which could identify any person, business, or organization, unless consent has been given by the respondent or as permitted by the *Statistics Act*. Statistics Canada will use the information from this survey for statistical purposes.

### Data-sharing agreements

To reduce respondent burden, Statistics Canada has entered into data-sharing agreements with provincial and territorial statistical agencies and other government organizations, which have agreed to keep the data confidential and use them only for statistical purposes. Statistics Canada will only share data from this survey with those organizations that have demonstrated a requirement to use the data.

**Section 11** of the *Statistics Act* provides for the sharing of information with provincial and territorial statistical agencies that meet certain conditions. These agencies must have the legislative authority to collect the same information, on a mandatory basis, and the legislation must provide substantially the same provisions for confidentiality and penalties for disclosure of confidential information as the *Statistics Act*. Because these agencies have the legal authority to compel businesses to provide the same information, consent is not requested and businesses may not object to the sharing of the data.

For this survey, there are **Section 11** agreements with the provincial and territorial statistical agencies of Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia and the Yukon. The shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

**Section 12** of the *Statistics Act* provides for the sharing of information with federal, provincial or territorial government organizations. Under **Section 12**, you may refuse to share your information with any of these organizations by writing a letter of objection to the Chief Statistician and returning it with the completed questionnaire. Please specify the organizations with which you do not want to share your data.

For this survey, there are **Section 12** agreements with the statistical agencies of Prince Edward Island, Northwest Territories and Nunavut, as well as with Infrastructure Canada.

For agreements with provincial and territorial government organizations, the shared data will be limited to information pertaining to business establishments located within the jurisdiction of the respective province or territory.

### Record linkages

To enhance the data from this survey, Statistics Canada may combine it with information from other surveys or from administrative sources.

### Further Information

If you require assistance regarding this survey, please contact Statistics Canada by telephone at

Statistics Canada advises you that there could be a risk of disclosure during facsimile or e-mail. However, upon receipt, Statistics Canada will provide the guaranteed level of protection afforded to all information collected under the authority of the *Statistics Act*.

### Who should complete this questionnaire?

Canada's Core Public Infrastructure Survey should be coordinated by the organization's asset manager who will ensure that each asset specific questionnaire is completed by its respective manager.

**Please return the questionnaire within 21 days.**

**Please mail the completed questionnaire in the enclosed envelope or fax it to Statistics Canada at 1-888-883-7999.**

If you are unable to complete within 21 days **OR** if you need help, call us at

Statistics Canada, Operations and Integration Division, 150 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6

**Visit our website, [www.statcan.gc.ca](http://www.statcan.gc.ca)**



## Reporting instructions

- Please print in ink.
- Please report for reference year 2016.
- **Report** dollar amounts in **Canadian dollars**.
- **Exclude** sales tax.
- Percentages should be rounded to whole numbers.
- When precise figures are not available, please provide your best estimates.

## Information for Survey Participants

**Canada's core public infrastructure** can vary within each municipality in Canada as a result of size of population, geographic location and overall economic condition. Canada's core public infrastructure survey will be measuring the following key components within the municipality: asset ownership; asset management planning; overall condition of core public asset infrastructure and overall performance of these core public assets.

**Organization** refers to municipal, regional, provincial, federal government or Indigenous entities (such as a Band council) who own a core public infrastructure.

**Own** refers to assets owned by your organization as well as assets leased by your organization through a capital lease agreement.

## Asset ownership

**Wastewater assets** include the following:

**Non-linear wastewater assets** include wastewater treatment plants, lagoon systems, wastewater pump stations, wastewater lift stations and wastewater storage tanks owned by your organization or leased by your organization through a capital lease agreement.

**Linear wastewater assets** include sewer pipes and sanitary forcemains owned by your organization or leased by your organization through a capital lease agreement.

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## Inventory and physical assessment of wastewater assets

### 1. In 2016, did your organization provide wastewater services (treatment or collection) to other municipalities or organizations?

**Wastewater services** includes any non-linear wastewater or linear wastewater services provided to other municipalities or organizations.

CBA01101

Yes → Please list these municipalities or organizations

CBA01201	CBA01211
CBA01202	CBA01212
CBA01203	CBA01213
CBA01204	CBA01214
CBA01205	CBA01215
CBA01206	CBA01216
CBA01207	CBA01217
CBA01208	CBA01218
CBA01209	CBA01219
CBA01210	CBA01220

No

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**4. As of December 31, 2016, indicate the count/kilometres distribution of your wastewater assets inventory based on the year of completed construction?**

Each selected asset for questions 2 and 3 should have a count/kilometre distribution below.

	Year of completed construction						
	2016	2010 to 2015	2000 to 2009	1970 to 1999	1940 to 1969	Prior to 1940	Do not know
	Count						
<b>Non-linear wastewater assets</b>							
Wastewater treatment plants (include sludge handling plants)	C8C04101	C8C04201	C8C04301	C8C04401	C8C04501	C8C04601	C8C04701
Lagoon systems	C8C04102	C8C04202	C8C04302	C8C04402	C8C04502	C8C04602	C8C04702
Wastewater pump stations	C8C04103	C8C04203	C8C04303	C8C04403	C8C04503	C8C04603	C8C04703
Wastewater lift stations	C8C04104	C8C04204	C8C04304	C8C04404	C8C04504	C8C04604	C8C04704
Wastewater storage tanks	C8C04105	C8C04205	C8C04305	C8C04405	C8C04505	C8C04605	C8C04705
<b>Kilometres</b>							
<b>Linear wastewater assets</b>							
Sewer pipes (diameter: <450mm)	C8C04106	C8C04206	C8C04306	C8C04406	C8C04506	C8C04606	C8C04706
Sewer pipes (diameter: ≥450mm to <1,500mm)	C8C04107	C8C04207	C8C04307	C8C04407	C8C04507	C8C04607	C8C04707
Sewer pipes (diameter: ≥1,500mm)	C8C04108	C8C04208	C8C04308	C8C04408	C8C04508	C8C04608	C8C04708
Sewer pipes (of unknown diameter)	C8C04109	C8C04209	C8C04309	C8C04409	C8C04509	C8C04609	C8C04709
Sanitary forcemains	C8C04110	C8C04210	C8C04310	C8C04410	C8C04510	C8C04610	C8C04710

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**5. What is the condition assessment cycle for your wastewater assets?**

**Condition assessment cycle:** The period of time required to assess all the assets of a particular type owned by the organization as well as all of the assets of a particular type leased by the organization through a capital lease agreement.

Please select one condition assessment cycle per asset.

		Condition assessment cycle						
		1 year	2 years	3 to 5 years	5 to 10 years	More than 10 years	Does not apply	Do not know
<b>Non-linear wastewater assets</b>								
Wastewater treatment plants (include sludge handling plants)	C8D05101	01	02	03	04	05	06	07
Lagoon systems	C8D05102	01	02	03	04	05	06	07
Wastewater pump stations	C8D05103	01	02	03	04	05	06	07
Wastewater lift stations	C8D05104	01	02	03	04	05	06	07
Wastewater storage tanks	C8D05105	01	02	03	04	05	06	07
<b>Linear wastewater assets</b>								
Sewer pipes (diameter: <450mm)	C8D05106	01	02	03	04	05	06	07
Sewer pipes (diameter: ≥450mm to <1,500mm)	C8D05107	01	02	03	04	05	06	07
Sewer pipes (diameter: ≥1,500mm)	C8D05108	01	02	03	04	05	06	07
Sewer pipes (of unknown diameter)	C8D05109	01	02	03	04	05	06	07
Sanitary forcemains	C8D05110	01	02	03	04	05	06	07

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**6. Please indicate the assessment tool used to complete the physical condition assessment of your organization's wastewater assets in 2016.**

Mark all that apply for each wastewater asset owned or leased by your organization.

Each selected asset for questions 2 and 3 should have a physical condition assessment below.

	1. Based on detailed inspection and analysis guidelines or procedures	2. Based on municipal representative working experience with asset	3. Using proxy information such as age of material, soil environment and estimated service life	4. Do not know
<b>Non-linear wastewater assets</b>				
Wastewater treatment plants (include sludge handling plants)	C8E06101 <input type="checkbox"/>	C8E06201 <input type="checkbox"/>	C8E06301 <input type="checkbox"/>	C8E06401 <input type="checkbox"/>
Lagoon systems	C8E06102 <input type="checkbox"/>	C8E06202 <input type="checkbox"/>	C8E06302 <input type="checkbox"/>	C8E06402 <input type="checkbox"/>
Wastewater pump stations	C8E06103 <input type="checkbox"/>	C8E06203 <input type="checkbox"/>	C8E06303 <input type="checkbox"/>	C8E06403 <input type="checkbox"/>
Wastewater lift stations	C8E06104 <input type="checkbox"/>	C8E06204 <input type="checkbox"/>	C8E06304 <input type="checkbox"/>	C8E06404 <input type="checkbox"/>
Wastewater storage tanks	C8E06105 <input type="checkbox"/>	C8E06205 <input type="checkbox"/>	C8E06305 <input type="checkbox"/>	C8E06405 <input type="checkbox"/>
<b>Linear wastewater assets</b>				
Sewer pipes (diameter: <450mm)	C8E06106 <input type="checkbox"/>	C8E06206 <input type="checkbox"/>	C8E06306 <input type="checkbox"/>	C8E06406 <input type="checkbox"/>
Sewer pipes (diameter: ≥450mm to <1,500mm)	C8E06107 <input type="checkbox"/>	C8E06207 <input type="checkbox"/>	C8E06307 <input type="checkbox"/>	C8E06407 <input type="checkbox"/>
Sewer pipes (diameter: ≥1,500mm)	C8E06108 <input type="checkbox"/>	C8E06208 <input type="checkbox"/>	C8E06308 <input type="checkbox"/>	C8E06408 <input type="checkbox"/>
Sewer pipes (of unknown diameter)	C8E06109 <input type="checkbox"/>	C8E06209 <input type="checkbox"/>	C8E06309 <input type="checkbox"/>	C8E06409 <input type="checkbox"/>
Sanitary forcemains	C8E06110 <input type="checkbox"/>	C8E06210 <input type="checkbox"/>	C8E06310 <input type="checkbox"/>	C8E06410 <input type="checkbox"/>

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**7. In 2016, what was the overall physical condition of your organization's wastewater assets?  
Please indicate the percentage distribution of your wastewater assets by using the following condition rating scale.**

**Very poor:** The asset is unfit for sustained service. Near or beyond expected service life, widespread signs of advanced deterioration, some assets may be unusable.

**Poor:** Increasing potential of affecting service. The asset is approaching end of service life; condition below standard and a large portion of system exhibits significant deterioration.

**Fair:** The asset requires attention. The assets show signs of deterioration and some elements exhibit deficiencies.

**Good:** The asset is adequate. Acceptable, generally within mid stage of expected service life.

**Very good:** Asset is fit for the future. Well maintained, good condition, new or recently rehabilitated.

Each selected asset for questions 2 and 3 should have a percent distribution below.

Each reporting asset must total to 100%.

	Very poor	Poor	Fair	Good	Very good	Do not know	Total
	%						
<b>Non-linear wastewater assets</b>							
Wastewater treatment plants (include sludge handling plants)	C8F07101	C8F07201	C8F07301	C8F07401	C8F07501	C8F07601	100%
Lagoon systems	C8F07102	C8F07202	C8F07302	C8F07402	C8F07502	C8F07602	100%
Wastewater pump stations	C8F07103	C8F07203	C8F07303	C8F07403	C8F07503	C8F07603	100%
Wastewater lift stations	C8F07104	C8F07204	C8F07304	C8F07404	C8F07504	C8F07604	100%
Wastewater storage tanks	C8F07105	C8F07205	C8F07305	C8F07405	C8F07505	C8F07605	100%
<b>Linear wastewater assets</b>							
Sewer pipes (diameter: <450mm)	C8F07106	C8F07206	C8F07306	C8F07406	C8F07506	C8F07606	100%
Sewer pipes (diameter: ≥450mm to <1,500mm)	C8F07107	C8F07207	C8F07307	C8F07407	C8F07507	C8F07607	100%
Sewer pipes (diameter: ≥1,500mm)	C8F07108	C8F07208	C8F07308	C8F07408	C8F07508	C8F07608	100%
Sewer pipes (of unknown diameter)	C8F07109	C8F07209	C8F07309	C8F07409	C8F07509	C8F07609	100%
Sanitary forcemains	C8F07110	C8F07210	C8F07310	C8F07410	C8F07510	C8F07610	100%

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## Asset management and performance

### 8. Does your organization have a wastewater asset management plan?

An **Asset Management Plan** defines how a group of assets is to be managed over a period of time. The asset management plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned actions to ensure the assets are providing the expected level of service, and financing strategies to implement the planned actions.

C8G08101

- 1  Yes
- 3  No → Please go to question 10

### 9. How often does your organization update the current wastewater asset management plan?

Mark one only.

C8G09101

- 1  Every year
- 2  Every two to four years
- 3  Every five years or more
- 4  Does not update
- 5  Other — please specify

C8G09205

- 6  Do not know

→ Please go to question 11

### 10. When does your organization plan on implementing a wastewater asset management plan?

Mark one only.

C8G10101

- 1  In one year
- 2  In two to four years
- 3  In five years or more
- 4  Other — please specify

C8G10204

- 5  Do not plan to implement an asset management plan
- 6  Do not know

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**11. What type of asset management information system does your organization use to manage your wastewater assets?**

Mark all that apply.

- C8G11101  Custom asset management software
- C8G11102  Off-the-shelf asset management software
- C8G11103  Spreadsheet
- C8G11104  Paper records
- C8G11105  Other — please specify  
 C8G11205
- C8G11106  No asset management information system
- C8G11107  Do not know

**12. In 2016, what was the total rated capacity (in cubic meters) of the temporary storage infrastructure for the wastewater collection system (separated and combined wastewater sewers) owned by your organization?**

Exclude treatment plant unit operations and separated storm water sewers.

	Cubic metres	Do not know
In-system wastewater storage tanks and tunnels	C8G12101 <input type="text"/> ,000	C8G12201 <input type="checkbox"/>
Other — please specify: C8G12302 <input type="text"/>	C8G12102 <input type="text"/> ,000	C8G12202 <input type="checkbox"/>
<b>Total storage capacity</b>	C8G12103 <input type="text"/> ,000	C8G12203 <input type="checkbox"/>

**13. In 2016, what was the total rated capacity (in cubic metres/day) of the wastewater treatment plants owned by your organization?**

	Cubic metres/day	Do not know
Wastewater treatment plants	C8G13101 <input type="text"/> ,000	C8G13201 <input type="checkbox"/>

**14. Has your organization implemented a full cost-recovery strategy for wastewater services?**

**Full cost recovery:** Recovering full costs provided within the user rates charged to customers of the system.

**Full costs:** Includes operating costs, financing costs, renewal and replacement costs, and improvement costs associated with extracting, treating, or distributing water to the public and such other costs which may be specified by regulation.

- C8G14101
- 1  Yes → Please go to question 16
- 3  No → Please go to question 15

**15. When does your organization plan on implementing a full cost recovery strategy for wastewater?**

Mark one only.

CBG15101

- 1  Never
- 2  In 1 year
- 3  In 2 to 3 years
- 4  In 4 to 5 years
- 5  In more than 5 years
- 6  Other — please specify

CBG15206

- 7  Do not know

**16. In 2016, did your organization's wastewater collection system have combined sewers?**

**Combined sewer:** a sewer that is designed to collect surface runoff and storm water in such a manner that it mixes with wastewater.

CBG16101

- 1  Yes → Please go to question 17
- 3  No → Please go to question 22
- 9  Do not know → Please go to question 22

**17. In 2016, how many total hours and days was untreated wastewater released from combined sewers?**

CBG17101

 Days

CBG17102

 Hours

CBG17103

- Do not know

**18. In 2016, what was the volume of untreated wastewater released from combined sewers?**

CBG18101

 cubic metres

CBG18102

- Did not calculate

CBG18103

- Do not know

**19. What is the percentage (by length of sewer) of the total wastewater collection system that is combined in 2016?**

CBG19101

 % (Not greater than 100%)

CBG19102

- Do not know

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**20. Do you have a plan to separate your combined sewers?**

C8G20101

- 1  Yes → Please go to question 21
- 3  No → Please go to question 22
- 9  Do not know → Please go to question 22

**21. When does your organization expect the plan to separate combined sewers to be completed?**

Mark one only.

C8G21101

- 1  In 1 to 5 years
- 2  In 6 to 10 years
- 3  In 11 to 15 years
- 4  In 16 to 20 years
- 5  Other — please specify

C8G21205

- 6  Do not know

**22. In 2016, did your organization have the capability to determine if wastewater was released to a receiving body of water by:**

Mark all that apply.

- C8G22101  Continuous monitoring
- C8G22102  Estimates from numerical modelling
- C8G22103  None
- C8G22104  Do not know

**23. In 2016, did your organization map the locations where the wastewater is released to a receiving body of water?**

C8G23101

- 1  Yes
- 3  No

**24. In 2016, did your wastewater system release untreated wastewater into the environment?**

C8G24101

- 1  Yes
- 3  No → Please go to question 29
- 9  Do not know → Please go to question 29

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## Assets value and expenses of wastewater

### 34. What is the 2016 estimated replacement value, required renewal budget, and actual renewal budget of wastewater assets owned by your organization?

**Estimated replacement value:** the approximate cost at the present time required to replace an asset, including demolition costs.

**Does not include** land costs or overhead such as administration.

**2016 required renewal budget:** the budget required for rehabilitation, reconstruction, or replacement of the assets to bring rating of all assets to a rating of "good" within the 2016 reference year. These include any activities which increase the performance or capacity of existing fixed assets or significantly extend their previously expected service lives.

**2016 actual renewal budget:** the actual funds spent for the rehabilitation, reconstruction a replacement of the assets. These include any activities which increase the performance or capacity of existing fixed assets or significantly extend their previously expected service lives.

**Required renewal budget and actual renewal budget does not include** cost of regular maintenance and repairs. Maintenance and repairs: Ordinary maintenance and repairs of fixed assets are activities that owners or users of fixed assets are obliged to undertake periodically in order to be able to utilise assets over their expected service lives (they are current costs that cannot be avoided if the fixed assets are to continue to be used). Maintenance and repairs do not change the fixed asset or its performance, but simply maintain it in good working order or restore it to its previous condition in the event of a breakdown.

**Each asset should correspond to question 2 and 3.**

		2016		
		Estimated replacement value	Required renewal budget	Actual renewal budget
Thousands of dollars (000's)				
<b>Non-linear wastewater assets</b>				
Wastewater treatment plants (include sludge handling plants)	CBH34101	CBH34201	CBH34301	
	\$	,	\$	\$
		,000	,000	,000
Lagoon systems	CBH34102	CBH34202	CBH34302	
	\$	,	\$	\$
		,000	,000	,000
Wastewater pump stations	CBH34103	CBH34203	CBH34303	
	\$	,	\$	\$
		,000	,000	,000
Wastewater lift stations	CBH34104	CBH34204	CBH34304	
	\$	,	\$	\$
		,000	,000	,000
Wastewater storage tanks	CBH34105	CBH34205	CBH34305	
	\$	,	\$	\$
		,000	,000	,000
<b>Linear wastewater assets</b>				
Sewer pipes (diameter: <450mm)	CBH34106	CBH34206	CBH34306	
	\$	,	\$	\$
		,000	,000	,000
Sewer pipes (diameter: ≥450mm to <1,500mm)	CBH34107	CBH34207	CBH34307	
	\$	,	\$	\$
		,000	,000	,000
Sewer pipes (diameter: ≥1,500mm)	CBH34108	CBH34208	CBH34308	
	\$	,	\$	\$
		,000	,000	,000
Sewer pipes (of unknown diameter)	CBH34109	CBH34209	CBH34309	
	\$	,	\$	\$
		,000	,000	,000
Sanitary forcemains	CBH34110	CBH34210	CBH34310	
	\$	,	\$	\$
		,000	,000	,000







**Wastewater assets** include the following:

**Non-linear wastewater assets** include wastewater treatment plants, lagoon systems, wastewater pump stations, wastewater lift stations and wastewater storage tanks owned by your organization or leased by your organization through a capital lease agreement.

**Linear wastewater assets** include sewer pipes and sanitary force mains owned by your organization or leased by your organization through a capital lease agreement.

**Condition assessment cycle:** The period of time required to assess all the assets of a particular type owned by the organization as well as all of the assets of a particular type leased by the organization through a capital lease agreement.

**Asset Management Plan:** defines how a group of assets is to be managed over a period of time. The asset management plan describes the characteristics and condition of infrastructure assets, the levels of service expected from them, planned actions to ensure the assets are providing the expected level of service, and financing strategies to implement the planned actions.

**Full cost recovery:** Recovering full costs provided within the user rates charged to customers of the system.

**Full costs** includes operating costs, financing costs, renewal and replacement costs, and improvement costs associated with extracting, treating, or distributing water to the public and such other costs which may be specified by regulation.

**Estimated replacement value:** the approximate cost at the present time required to replace an asset, including demolition costs. **Does not include** land costs or overhead such as administration.

**2016 required renewal budget:** the budget required for rehabilitation, reconstruction, or replacement of the assets to bring rating of all assets to a rating of "good" within the 2016 reference year. These include any activities which increase the performance or capacity of existing fixed assets or significantly extend their previously expected service lives.

**Does not include** cost of regular maintenance and repairs.

**2016 actual renewal budget:** the actual funds spent for the rehabilitation, reconstruction a replacement of the assets. These include any activities which increase the performance or capacity of existing fixed assets or significantly extend their previously expected service lives. **Does not include** cost of regular maintenance and repairs.

**Maintenance and repairs:** Ordinary maintenance and repairs of fixed assets are activities that owners or users of fixed assets are obliged to undertake periodically in order to be able to utilise assets over their expected service lives (they are current costs that cannot be avoided if the fixed assets are to continue to be used). Maintenance and repairs do not change the fixed asset or its performance, but simply maintain it in good working order or restore it to its previous condition in the event of a breakdown.

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