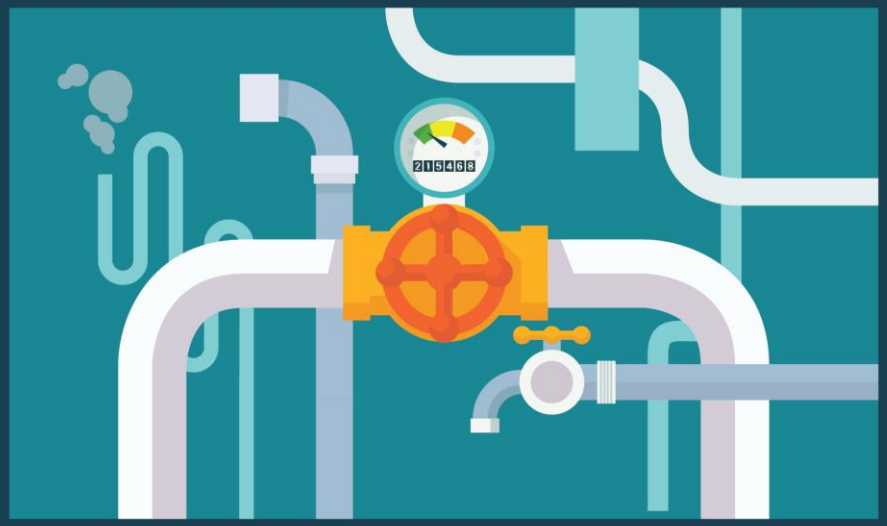
WASTEWATER



VALUE PROPOSITION

I expect my wastewater to be collected, treated and disposed of in an affordable and effective manner while being environmentally responsible.

KEEP IN MIND:

Influencing Factors

Influencing factors can create variances in comparison data from year-to-year and from municipality-to-municipality.

Age of Infrastructure
Age, condition and maintenance of wastewater collection system

Government Structure
Integrated systems vs. two-tier systems

Policy & Practices
Age, condition, pipe material and frequency of maintenance activities

Supply & Demand
Volume generated vs. system demand

Treatment Plants
Number, size and complexity of wastewater collection systems and treatment plants operated

Type of Wastewater Collection System
Design of the wastewater collection system & connection of storm sewers to sanitary sewers

Urban Density
Proximity of pipes to other utilities increases the cost for repair and replacement

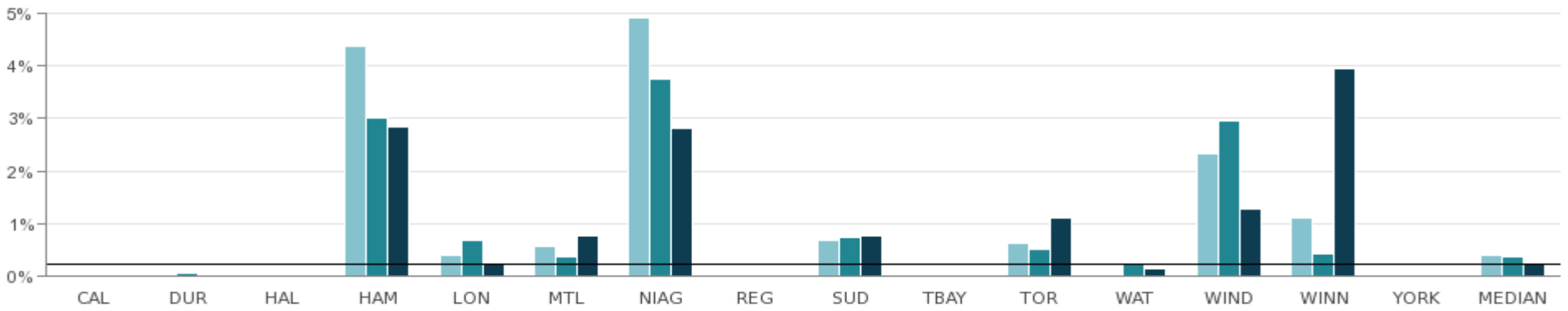
Weather Conditions
Negative impacts associated with more severe and frequent extreme weather events

For a full description of influencing factors, please go to: www.mbncanada.ca

Wastewater

Figure 35.1 Percent of Wastewater Estimated To Have Bypassed Treatment

The frequency and severity of weather events can have a significant negative impact on results.



2017	0.00%	0.00%	0.01%	4.37%	0.40%	0.55%	4.93%	0.00%	0.67%	0.00%	0.61%	0.00%	2.34%	1.09%	0.03%	0.40%
2018	0.00%	0.05%	0.03%	3.02%	0.67%	0.35%	3.75%	0.00%	0.73%	0.00%	0.49%	0.24%	2.95%	0.41%	0.00%	0.35%
2019	0.00%	0.00%	0.00%	2.83%	0.22%	0.75%	2.80%	0.02%	0.76%	0.03%	1.09%	0.13%	1.28%	3.95%	0.02%	0.22%

Source: WWTR110 (Community Impact)

Hamilton, London, Niagara: High lake levels and increased precipitation impacted 2017 results.

London: The largest section of the largest plant was under construction for most of 2018 which led to reduced wet weather capacity and more bypassed flow.

Toronto: Record setting lake levels in 2019 contributed to inflow and infiltration.

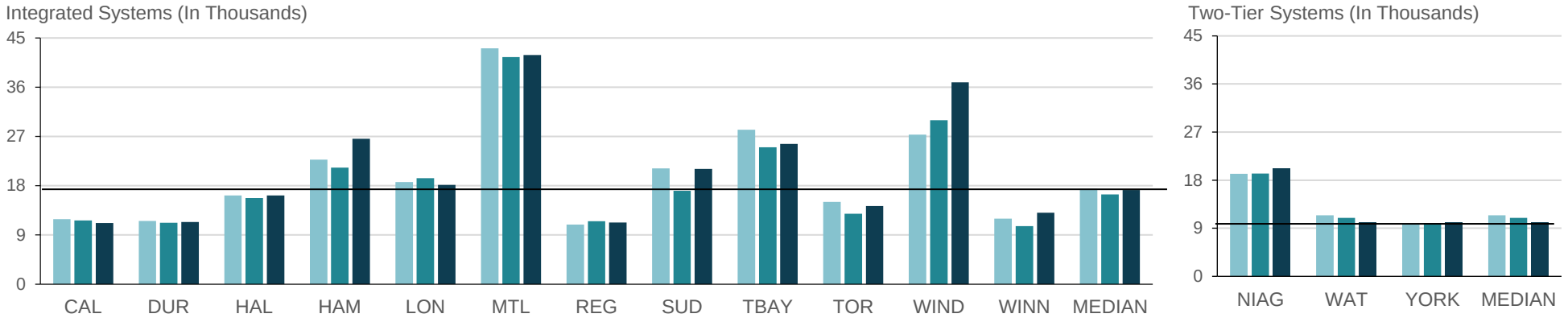
Windsor: Increase due to heavier than normal storm events in 2017 and 2018. Some of these storms delivered large volumes to the plants in a short period of time resulting in the increase of volume bypassed.

Winnipeg: Older portions of the system are a combined sewer system resulting in variability in flow rates dependent on weather. 2018 had the lowest flow rate in a number of years.

Wastewater

Figure 35.2 Megalitres of Treated Wastewater per 100,000 Population

Integrated Systems: The term applies to municipalities that have full responsibility for all wastewater activities including collection, conveyance, treatment and disposal. Two-Tier System: The term applies to municipalities that have responsibility for components of wastewater activities.



2017	11,885	11,540	16,237	22,784	18,687	43,134	10,908	21,159	28,237	15,033	27,317	12,006	17,462	19,207	11,430	9,696	11,430
2018	11,638	11,219	15,756	21,302	19,387	41,516	11,522	17,059	25,006	12,855	29,972	10,621	16,408	19,243	10,939	9,964	10,939
2019	11,190	11,359	16,223	26,568	18,171	41,901	11,280	21,092	25,625	14,286	36,885	13,076	17,197	20,137	10,142	10,043	10,142

Source: WWTR210 (Service Level)

Niagara, Waterloo and York: Responsible for all components with the exception of collection which is the responsibility of local municipalities within their boundaries.

Sudbury: Volume treated in 2018 was significantly lower due to low precipitation levels. 2019 is more in line with multi-year trends.

Winnipeg: 2018 variance due to weather. The City had the lowest flowrate in 10 years.

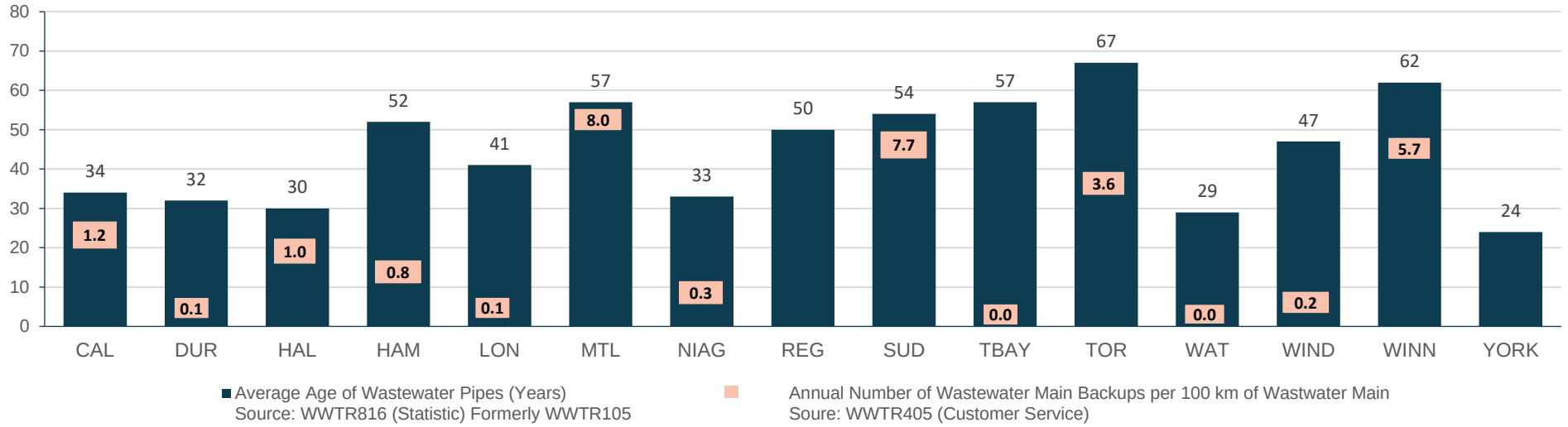
Windsor: Increase due to more precipitation in 2019 compared to 2018, which resulted in higher volume of wastewater treated due to combined sewers. Some of these storms delivered large volumes to the plants in a short period of time resulting in the increase of volume bypassed.

Wastewater

Figure 35.3 Average Age of Wastewater Pipe / Annual Number of Wastewater Main Back-ups per 100 Km of Wastewater Main

Age of Wastewater Pipes: Older wastewater pipes are often in poor condition and contain cracks, leaking joints and broken sections, contributing to increased pipe blockages and/or an inflow of groundwater into the system causing increased flow. These factors result in an increased frequency of wastewater main back-ups relative to newer systems that do not have such deficiencies and result in higher maintenance costs for older systems.

Wastewater Main Back-ups: The annual number of wastewater backups is directly related to the design of the wastewater pipe and the design of the wastewater collection system, i.e. the extent to which storm sewers are connected to or combined with sanitary sewers resulting in increased flow. Design criteria, age and condition of the wastewater collection infrastructure combined with localized major precipitation events can result in flows that exceed system capacity and result in wastewater backups.



Source: WWTR405 (Customer Service); WWTR816 (Statistic)

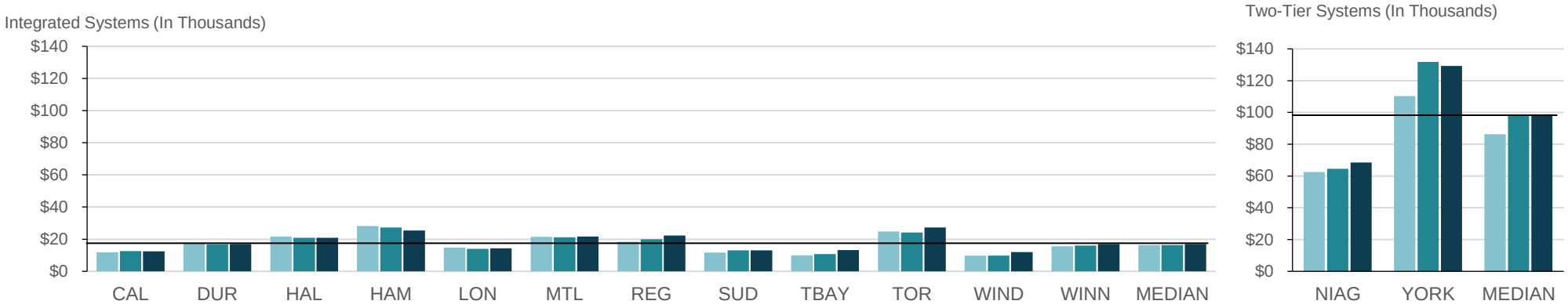
Niagara and Waterloo: Backups are recorded within municipal boundaries only.

Regina and York: Reports average age of wastewater pipe only.

Wastewater

Figure 35.4 Total Cost of Wastewater Collection and Conveyance per Km of Pipe Relative to the Number of Wastewater Pumping Stations Operated

This measure reflects the total cost for the collection and conveyance of wastewater and includes amortization which can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc. Municipalities providing services over a broad geographic area generally have higher operating costs due to the number and type of wastewater facilities and pumping stations operated. The distance between the individual systems has an impact on the daily operating costs for both the collection and conveyance of wastewater. Refer to Figure 35.2 for description of Integrated and Two-Tier Systems.



2017	$11,894	$17,222	$21,609	$28,230	$14,765	$21,488	$18,414	$11,709	$10,006	$24,753	$9,821	$15,616	$16,419	$62,429	$110,259	$86,344
2018	$12,615	$16,768	$20,841	$27,221	$14,047	$21,115	$20,009	$13,019	$10,693	$24,079	$9,838	$16,049	$16,409	$64,551	$131,801	$98,176
2019	$12,461	$16,947	$20,821	$25,437	$14,309	$21,718	$22,251	$13,059	$13,240	$27,338	$11,997	$16,947	$16,947	$68,430	$129,278	$98,854
Pumping Stations 2019	40	51	80	79	36	132	20	70	4	74	8	75		112	21	

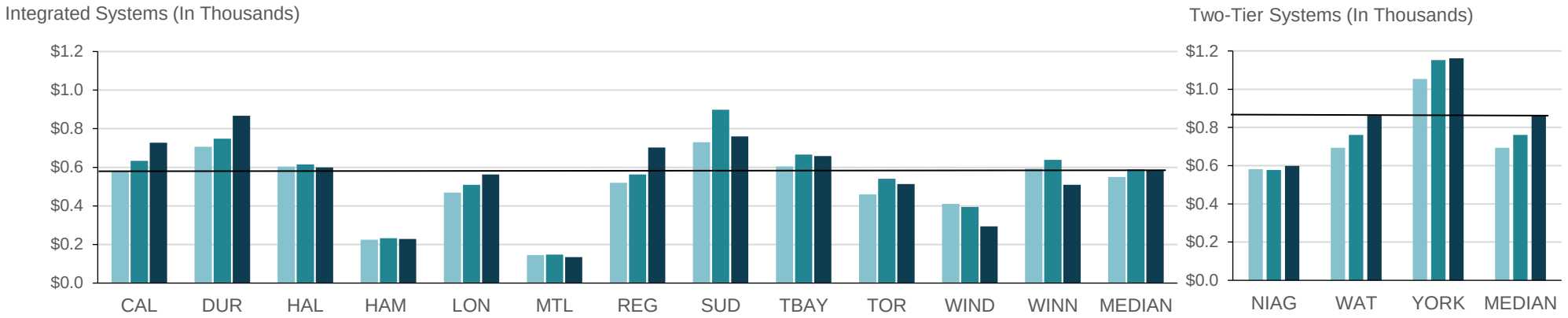
Source: WWTR305T (Efficiency); WWTR804 (Statistic)

Waterloo: Does not report - only partial jurisdiction over wastewater collection.

Wastewater

Figure 35.5 Total Cost for Treatment/Disposal per Megalitre Treated Relative to the Number of Wastewater Treatment Plants Operated

This measure reflects the total cost for the treatment and disposal of wastewater. It also includes amortization which can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc. Municipalities providing services over a broad geographic area generally have higher operating costs due to the number and type of wastewater plants operated. The distance between the individual systems has an impact on the daily operating costs for both the treatment and disposal of wastewater. Refer to Figure 35.2 for description of Integrated and Two-Tier Systems.



	CAL	DUR	HAL	HAM	LON	MTL	REG	SUD	TBAY	TOR	WIND	WINN	MEDIAN	NIAG	WAT	YORK	MEDIAN
2017	$580	$706	$603	$225	$469	$145	$520	$730	$604	$460	$410	$593	$550	$582	$694	$1,054	$694
2018	$634	$748	$615	$232	$509	$147	$563	$899	$666	$541	$394	$639	$589	$577	$761	$1,152	$761
2019	$728	$867	$600	$228	$563	$135	$703	$760	$658	$513	$294	$509	$582	$599	$861	$1,162	$861
Treatment Facilities 2019	3	11	7	2	5	2	1	10	1	4	2	3		11	13	8	

Source: WWTR310T (Efficiency); WWTR801+WWTR802+WWTR803 (Statistic)

Regina: Part of the operating expense for WWTP includes scheduled capital upgrades for certain years throughout the contract (including 2018). This is treated as an operating expense and will continue to fluctuate.

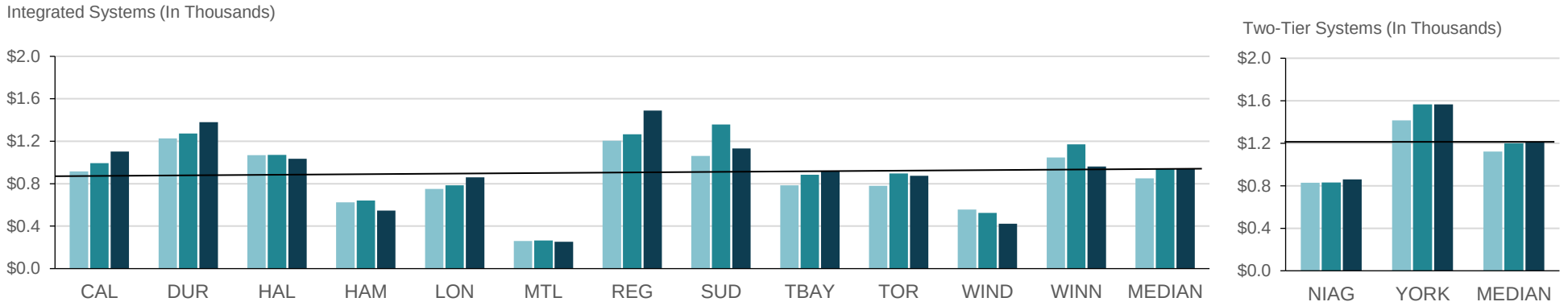
Sudbury: Overall treatment costs were up 6% while volume of wastewater treated was up nearly 24%. This resulted in a net decrease in the treatment cost per Megalitre.

York: The Region is responsible for treatment costs on behalf of 9 local municipalities.

Wastewater

Figure 35.6 Total Cost of Wastewater for Collection/Conveyance and Treatment/Disposal per Megalitre Treated

This measure reflects the combined total cost for the collection, conveyance, treatment and disposal of wastewater. Municipalities providing service over a broad geographic area generally have higher operating costs due to the number and type of wastewater pumping stations and treatment plants operated. The distance between the individual system has an impact on the daily operating costs for wastewater treatment/disposal and collection/conveyance. Amortization can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc. Refer to Figure 35.2 for description of Integrated and Two-Tier Systems.



2017	$916	$1,226	$1,068	$625	$751	$261	$1,204	$1,062	$785	$781	$556	$1,048	$851	$829	$1,415	$1,122
2018	$993	$1,274	$1,071	$642	$785	$265	$1,265	$1,357	$885	$897	$525	$1,172	$945	$832	$1,567	$1,200
2019	$1,102	$1,381	$1,034	$546	$859	$252	$1,489	$1,132	$919	$875	$423	$962	$941	$861	$1,566	$1,214

Source: WWTR315T (Efficiency)

Regina: Part of the operating expense for WWTP includes scheduled capital upgrades for certain years throughout the contract (including 2018). This is treated as an operating expense and will continue to fluctuate.

Sudbury: Overall treatment costs were up 6%, while volume of wastewater treated was up nearly 24% resulting in a net decrease.

Waterloo: Does not report - responsible for treatment and disposal only. See Figure 35.5.

Windsor: Treatment costs have been relatively consistent while the volume of wastewater treated was up nearly 25%. This resulted in a decrease in the treatment cost per megalitre.