

# WASTEWATER SNAPSHOT MEDIAN FOR 2015

## AMOUNT OF WASTEWATER TREATED *(per 100,000 people)*

14,826 MEGALITRES  
INTEGRATED SYSTEMS

11,543 MEGALITRES  
TWO-TIER SYSTEMS

fig. WWTR210 (SERVICE LEVEL)



## COST TO COLLECT & TRANSFER

\$16,379/megalitre  
INTEGRATED SYSTEMS

\$42,719/megalitre  
TWO-TIER SYSTEMS

fig. WWTR305T (EFFICIENCY)

1 MEGALITRE = 1,000,000 LITRES

## COST TO TREAT & DISPOSE

\$514/megalitre  
INTEGRATED SYSTEMS

\$694/megalitre  
TWO-TIER SYSTEMS

fig. WWTR310T (EFFICIENCY)

### 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



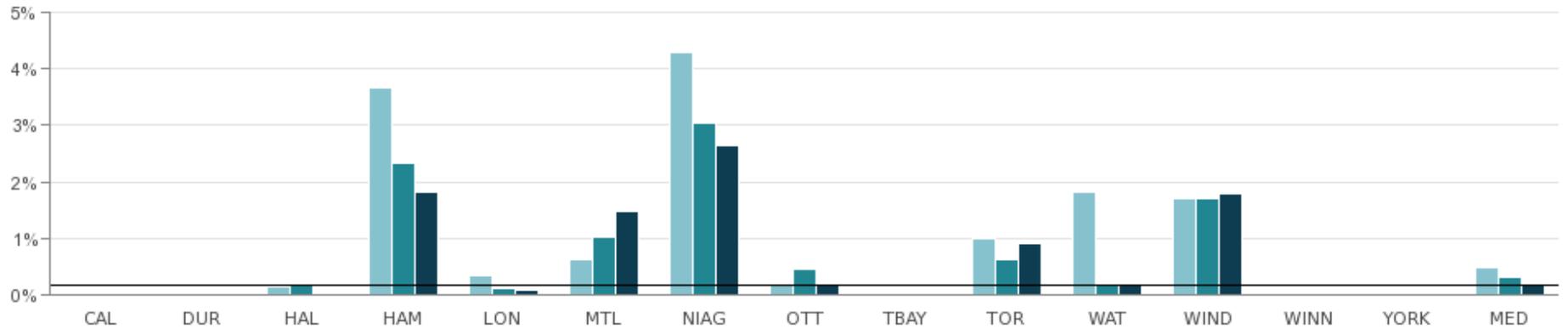
### Weather Conditions

Negative impacts associated with more severe and frequent extreme weather events

For a full description of influencing factors, please go to: [www.mbncanada.ca](http://www.mbncanada.ca)

**Fig. 35.1 Percent of Wastewater Estimated To Have Bypassed Treatment**

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



2013	N/A	0.00%	0.13%	3.67%	0.33%	0.61%	4.30%	0.17%	0.00%	0.99%	1.81%	1.70%	N/A	0.00%	0.47%
2014	N/A	0.00%	0.17%	2.34%	0.10%	1.01%	3.04%	0.45%	0.00%	0.61%	0.17%	1.71%	N/A	0.00%	0.31%
2015	0.00%	0.02%	0.00%	1.81%	0.08%	1.48%	2.65%	0.15%	0.00%	0.90%	0.20%	1.79%	N/A	0.00%	0.15%

Source: WWTR110M (Community Impact)

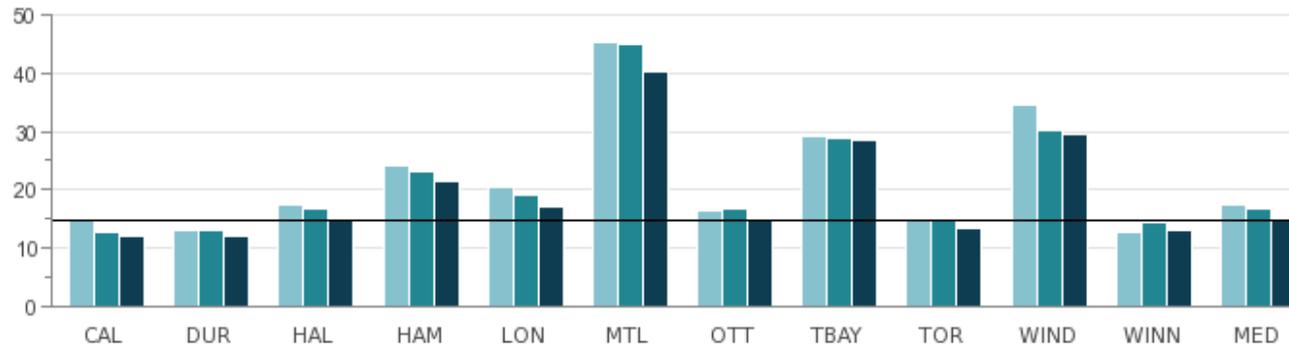
Comment:

The results for Durham Region, Halton Region and York Region appear as 0.00% due to decimal rounding. The City of Calgary and the City of Thunder Bay’s results are zero.

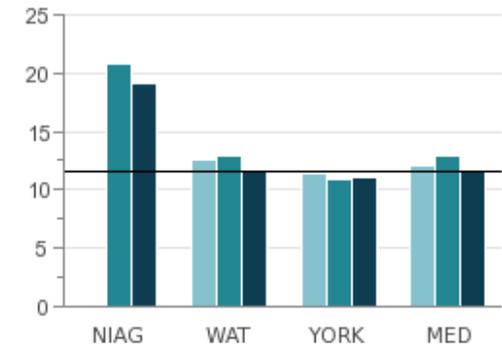
**Fig. 35.2 Megalitres of Treated Wastewater per 100,000 Population**

Wastewater flows are weather dependent and the 2015 results reflect a very dry and mild winter.

**Integrated Systems (In Thousands)**



**Two-Tier Systems (In Thousands)**



	CAL	DUR	HAL	HAM	LON	MTL	OTT	TBAY	TOR	WIND	WINN	MED	NIAG	WAT	YORK	MED
2013	15,222	13,241	17,426	24,134	20,380	45,225	16,450	29,218	15,051	34,464	12,775	17,426	N/A	12,627	11,444	12,036
2014	12,633	13,189	16,610	23,109	19,166	44,857	16,668	28,940	14,591	30,301	14,360	16,668	20,778	12,985	10,892	12,985
2015	12,151	12,170	14,611	21,464	17,233	40,097	14,826	28,401	13,463	29,587	12,997	14,826	19,151	11,534	11,032	11,534

Source: WWTR210 (Service Level)

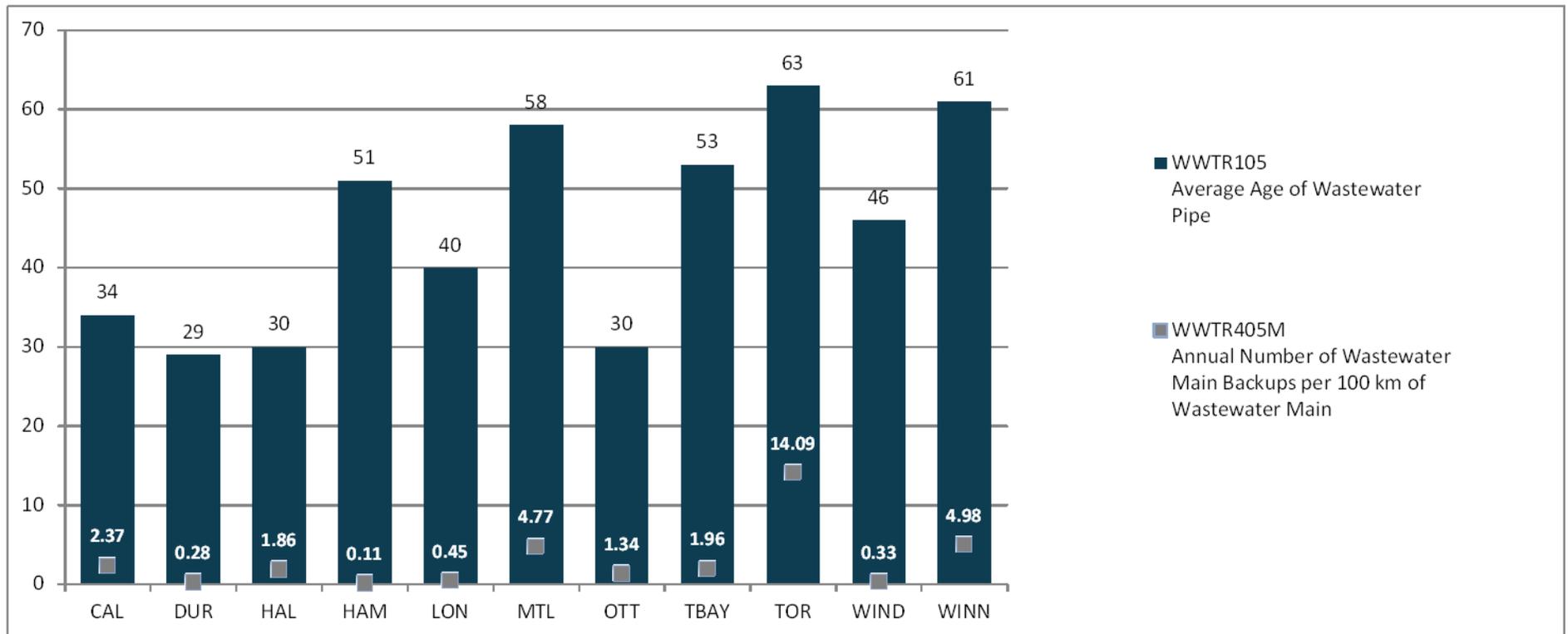
Comment: Montreal produces a large volume of water which affects the volume of treated water due to aging infrastructure. Investments are being made to improve the network.

**Fig. 35.3 Average Age of Wastewater Pipe / Annual Number of Wastewater Main Backups per 100 Km of Wastewater Main**

**Average Age of Wastewater Pipe:** 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.

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.

The measure includes the municipalities with an integrated system only.



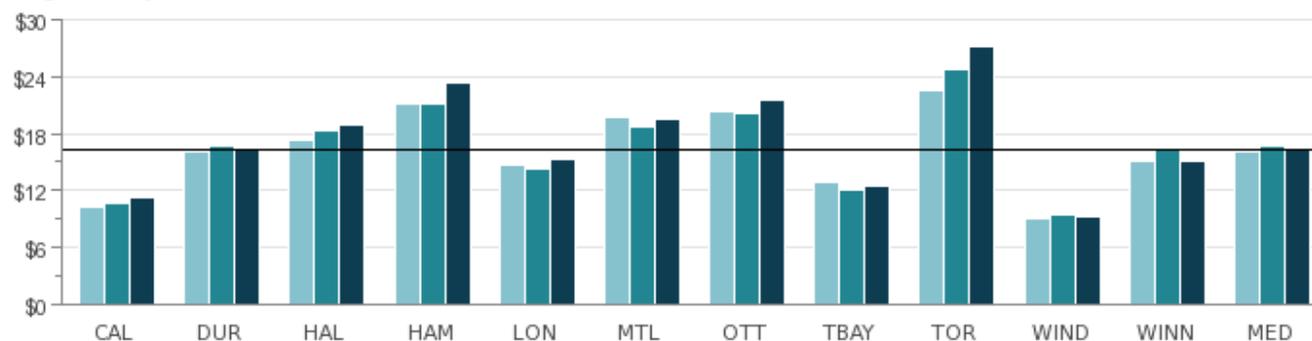
**Fig. 35.4 Total Cost of Wastewater Collection / Conveyance per Km of Pipe Relative to the Number of Wastewater Pumping Stations Operated**

Municipalities providing services over a broad geographic area generally have higher operating costs due to the number and type of wastewater facilities operated (treatment plants and pumping stations). The distance between the individual systems has an impact on the daily operating costs for both the treatment and distribution of drinking water. Amortization can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc.

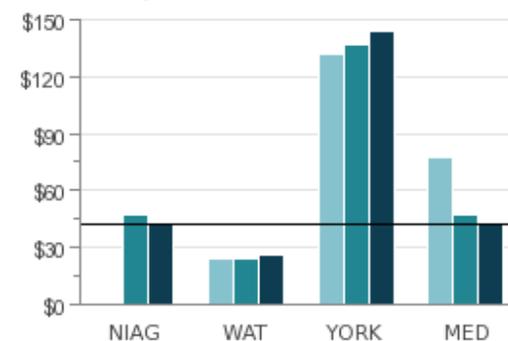
**Integrated Systems:** The term applies to municipalities that have full responsibility for all wastewater activities including collection, conveyance, treatment and disposal.

**Two-Tier Systems:** The term applies to municipalities that have responsibility for components of wastewater activities, e.g. Niagara, Waterloo and York are responsible for all components with the exception of collection which is the responsibility of local municipalities within their boundaries.

Integrated Systems (In Thousands)



Two-Tier Systems (In Thousands)



2013	\$10,214	\$16,023	\$17,245	\$21,071	\$14,726	\$19,682	\$20,379	\$12,922	\$22,627	\$9,059	\$15,050	\$16,023	N/A	\$23,683	\$131,552	\$77,618
2014	\$10,751	\$16,629	\$18,330	\$21,143	\$14,366	\$18,804	\$20,189	\$12,129	\$24,757	\$9,454	\$16,248	\$16,629	\$47,262	\$23,691	\$136,736	\$47,262
2015	\$11,266	\$16,379	\$18,892	\$23,242	\$15,294	\$19,590	\$21,605	\$12,394	\$27,057	\$9,349	\$15,079	\$16,379	\$42,719	\$25,939	\$144,049	\$42,719
Wastewater Pumping Stations	40	52	82	79	38	45	61	4	74	10	74	-	110	6	19	-

Source: WWTR305T (Efficiency) WWTR804 (Statistic)

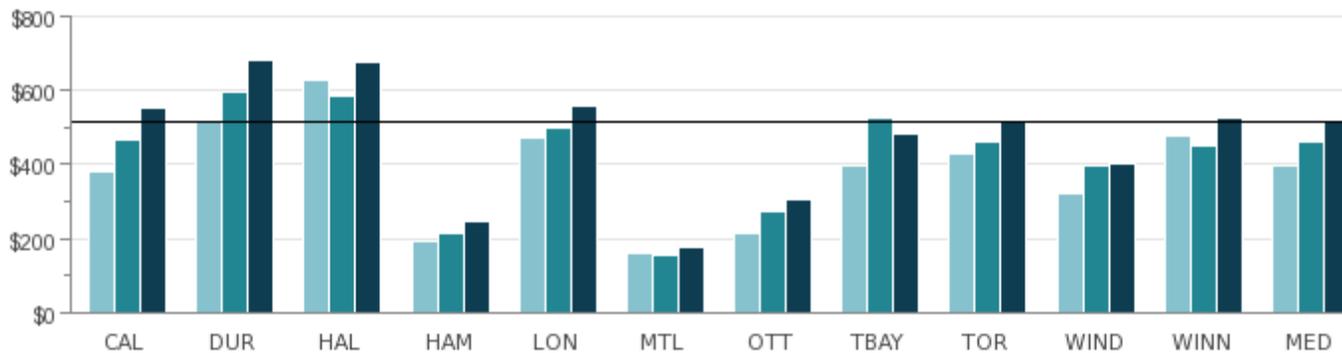
**Fig. 35.5 Total Cost for Treatment/Disposal per Megalitre Treated Relative to Number of Wastewater Treatment Facilities Operated**

Municipalities providing services over a broad geographic area generally have higher operating costs due to the number and type of wastewater facilities operated (treatment plants and pumping stations). The distance between the individual systems has an impact on the daily operating costs for both the treatment and distribution of drinking water. Amortization can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc.

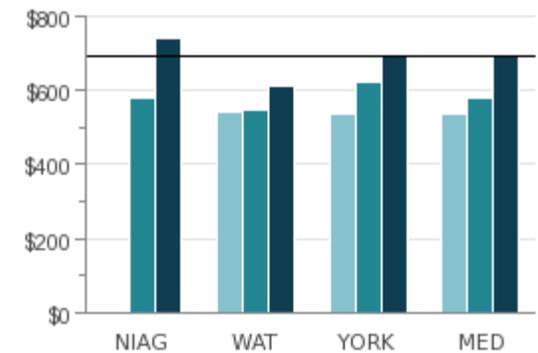
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Integrated Systems



Two-Tier Systems



2013	\$383	\$514	\$629	\$191	\$474	\$163	\$215	\$396	\$429	\$323	\$480	\$396	N/A	\$540	\$537	\$539
2014	\$466	\$598	\$582	\$215	\$501	\$157	\$273	\$527	\$461	\$398	\$453	\$461	\$579	\$546	\$621	\$579
2015	\$551	\$679	\$678	\$248	\$557	\$175	\$305	\$482	\$514	\$400	\$527	\$514	\$739	\$614	\$694	\$694
Wastewater Treatment Facilities	3	11	7	2	6	2	1	1	4	2	3	-	11	13	7	-

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

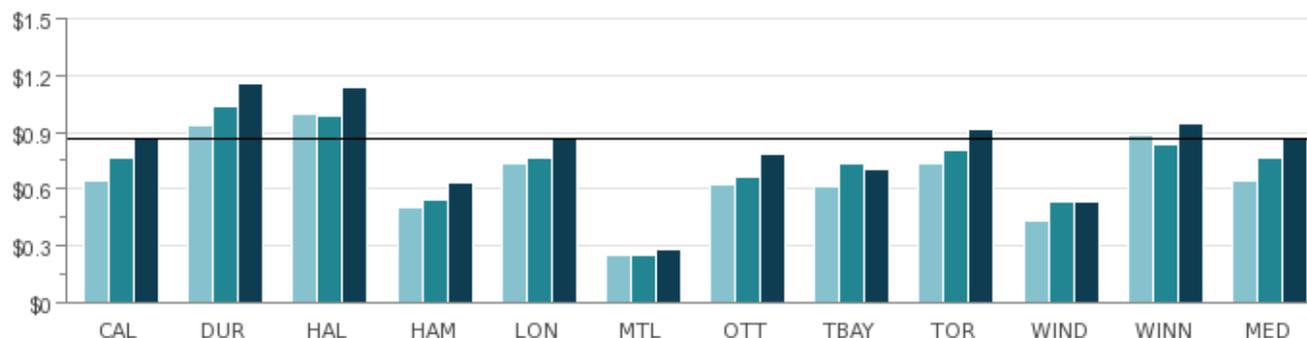
**Fig. 35.6 Total Cost of Wastewater Treatment/Disposal and Collection/Conveyance per Megalitre**

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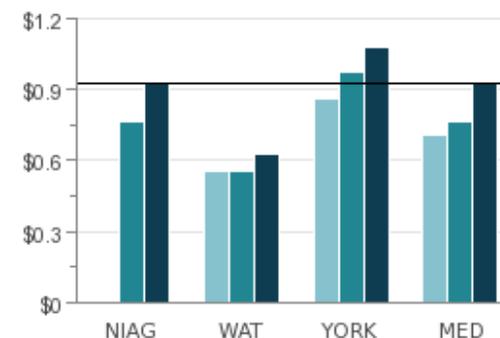
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Integrated Systems (In Thousands)



Two-Tier Systems (In Thousands)



2013	\$642	\$937	\$999	\$502	\$730	\$254	\$620	\$618	\$732	\$432	\$886	\$642	N/A	\$554	\$864	\$709
2014	\$765	\$1,040	\$986	\$540	\$762	\$247	\$668	\$737	\$801	\$531	\$837	\$762	\$761	\$559	\$970	\$761
2015	\$868	\$1,154	\$1,141	\$633	\$864	\$278	\$781	\$701	\$912	\$534	\$945	\$864	\$924	\$630	\$1,076	\$924

Source: WWTR315T (Efficiency)

