

## What is the Service?

Water Services include the treatment and distribution of potable (drinking) water from the water supply source to the customer. The goal of water services is to ensure a clean, affordable and adequate supply of water is available to meet demand from both existing communities and from future development. Provincial and municipal policies ensure water supply is readily available for emergency purposes, such as fire protection and to meet peak demand conditions.

To ensure the drinking water from your tap is safe and of high quality, it undergoes monitoring and testing during the treatment process. The distribution system is also monitored frequently. Annual water quality reports are available from your municipal water provider, showing compliance with provincial and federal water quality regulations.

*Specific objectives include:*

- Treatment of source water at water treatment plants to ensure drinking water meets or exceeds regulatory requirements
- Distribution of drinking water to customers through systems of water mains, water pumping stations and storage reservoirs
- Ensuring adequate capacity is maintained for both existing communities and future development

Water services are provided to residential and Industrial, Commercial and Institutional (ICI) sector customers. These services are generally funded through Municipal water rates.

### Additional Information:

**Integrated Systems:** The term applies to those Cities and Municipalities that have full responsibility for all water activities including treatment, transmission, storage and local distribution.

**Two-Tier Systems:** The term applies to those Municipalities that have responsibility for components of water activities such as water treatment, water transmission and major water storage facilities; and whereas local municipalities are responsible for local water distribution systems and storage facilities.

## 36 Water



### Influencing Factors:

**Age of Infrastructure:** Age and condition of water distribution system, the type of water distribution pipe material and the frequency of maintenance activities.

**Conservation Programs:** Extent of municipal water conservation programs can impact water consumption.

**Provincial Standards:** Specific municipal water quality requirements may exceed provincial regulations.

**Supply and Demand:** Cost is impacted by the water source (ground water or surface water), the resulting treatment costs and the number of independent water supply/distribution systems operated, and size of the geographic area serviced. Variation in the supply to ICI and residential sectors, relative to total system demand.

**Treatment Plants:** Number, size and complexity of a municipality's water treatment plants.

**Urban Density:** Proximity of pipes to other utilities increases the cost for infrastructure repair and replacement.

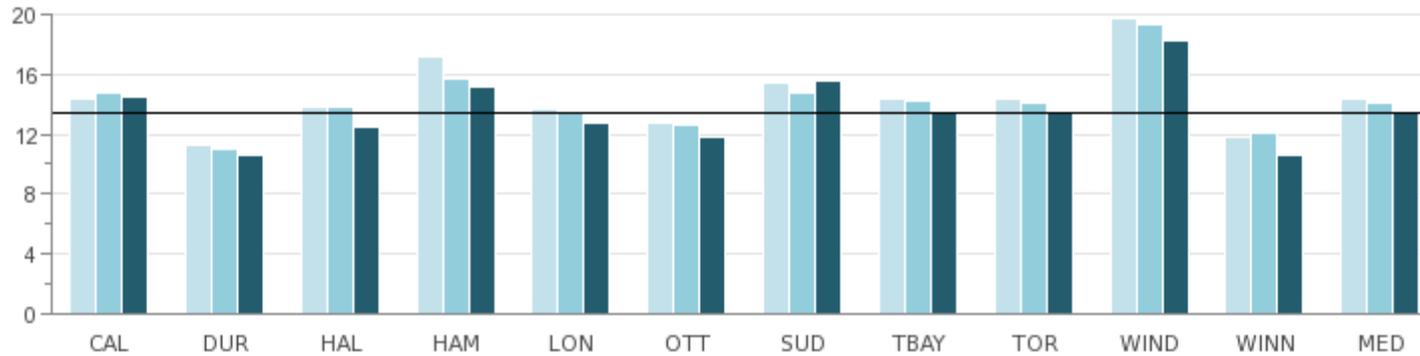
**Weather Conditions:** Negative impacts associated with more severe and frequent extreme weather events.

# Water

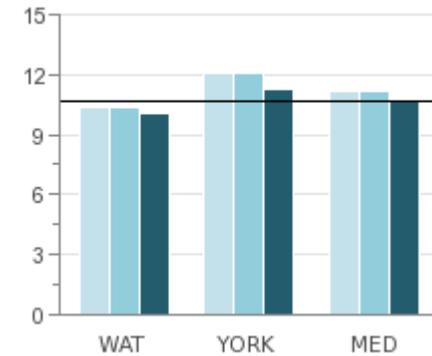
## How much water is treated in each municipality?

Fig 36.1 Megalitres of Treated Water per 100,000 Population

Integrated Systems (In Thousands)



Two-Tier Systems (In Thousands)



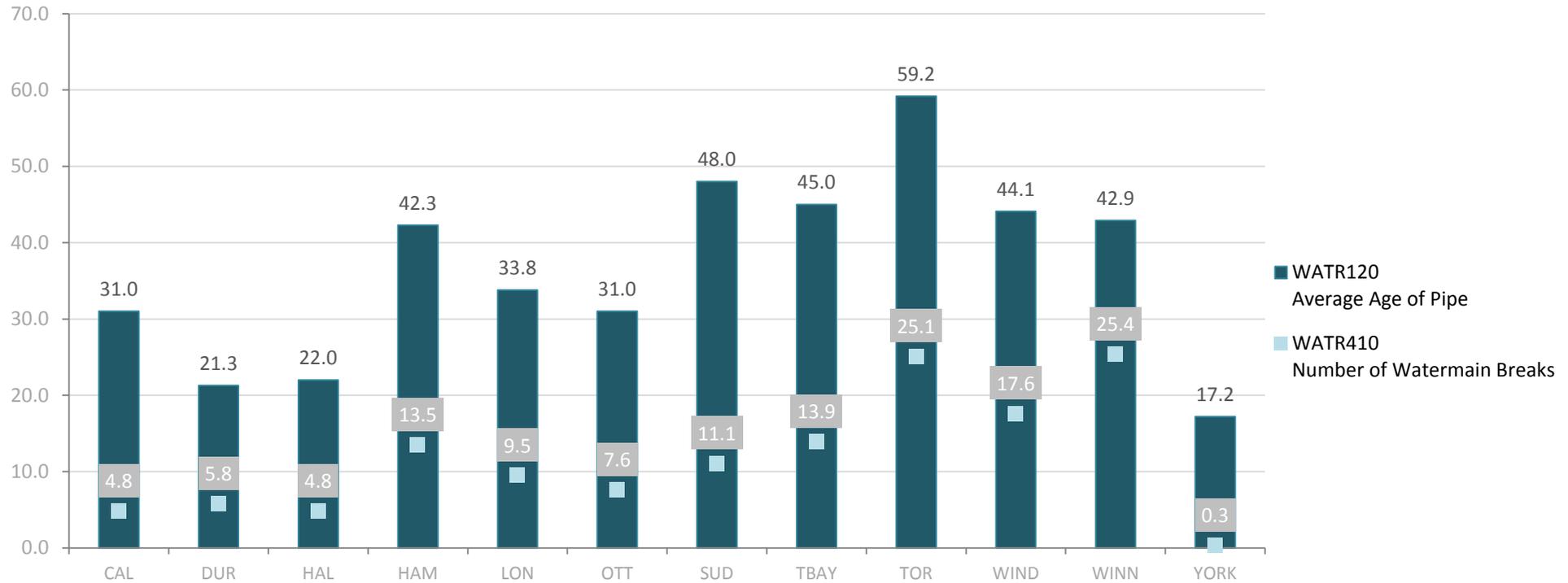
<b>2011</b>	<b>14,321</b>	<b>11,212</b>	<b>13,858</b>	<b>17,128</b>	<b>13,704</b>	<b>12,710</b>	<b>15,361</b>	<b>14,367</b>	<b>14,346</b>	<b>19,775</b>	<b>11,799</b>	<b>14,321</b>	<b>10,342</b>	<b>12,022</b>	<b>11,182</b>
<b>2012</b>	<b>14,688</b>	<b>10,967</b>	<b>13,825</b>	<b>15,641</b>	<b>13,516</b>	<b>12,619</b>	<b>14,693</b>	<b>14,228</b>	<b>14,105</b>	<b>19,252</b>	<b>12,114</b>	<b>14,105</b>	<b>10,322</b>	<b>12,057</b>	<b>11,190</b>
<b>2013</b>	<b>14,448</b>	<b>10,614</b>	<b>12,484</b>	<b>15,170</b>	<b>12,756</b>	<b>11,745</b>	<b>15,499</b>	<b>13,400</b>	<b>13,542</b>	<b>18,216</b>	<b>10,633</b>	<b>13,400</b>	<b>10,086</b>	<b>11,304</b>	<b>10,695</b>

Source: WATR210 (Service Level)

Note: Refer to additional information regarding integrated vs. two-tier systems. Calculation includes residential and ICI sectors.

## What is the number of watermain breaks relative to the average age of water pipe?

Fig 36.2 Average Age of Water Pipe and Number of Watermain Breaks per 100 Km of Water Distribution Pipe (excluding connections and hydrant leads)



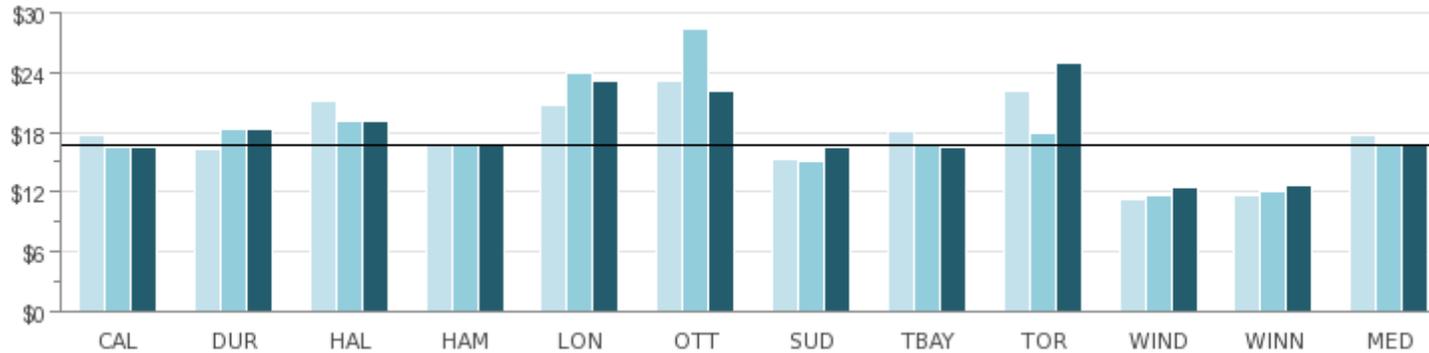
Source: WATR120 (Statistic); WATR410 (Customer Service)

Note: Age of Water Distribution Pipe - Old pipes are usually in poor condition as a result of pipe corrosion, pipe materials (susceptible to fractures), leakage at pipe joints and service connections which contributes to an increased frequency of watermain breaks relative to newer systems that do not have such deficiencies.

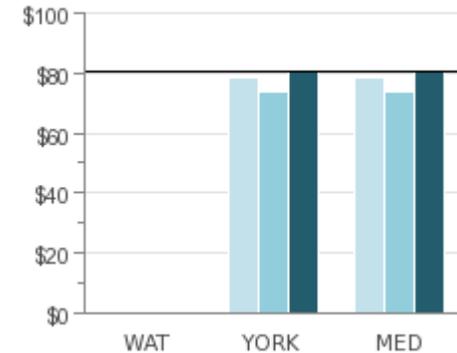
## What is the total cost for the distribution and transmission of drinking water?

Fig 36.4 OMBI Total Cost for the Distribution/Transmission of Drinking Water per Km of Water Distribution Pipe (includes amortization)

Integrated Systems (In Thousands)



Two-Tier Systems (In Thousands)



2011	\$17,683	\$16,256	\$21,131	\$16,637	\$20,703	\$23,159	\$15,322	\$18,067	\$22,188	\$11,319	\$11,646	\$17,683	\$78,227	\$78,227
2012	\$16,495	\$18,287	\$19,180	\$16,738	\$23,970	\$28,284	\$15,037	\$16,743	\$17,843	\$11,608	\$12,068	\$16,743	\$73,837	\$73,837
2013	\$16,578	\$18,401	\$19,069	\$16,734	\$23,153	\$22,207	\$16,581	\$16,491	\$25,010	\$12,402	\$12,682	\$16,734	\$80,515	\$80,515

Source: WATR305T (Efficiency)

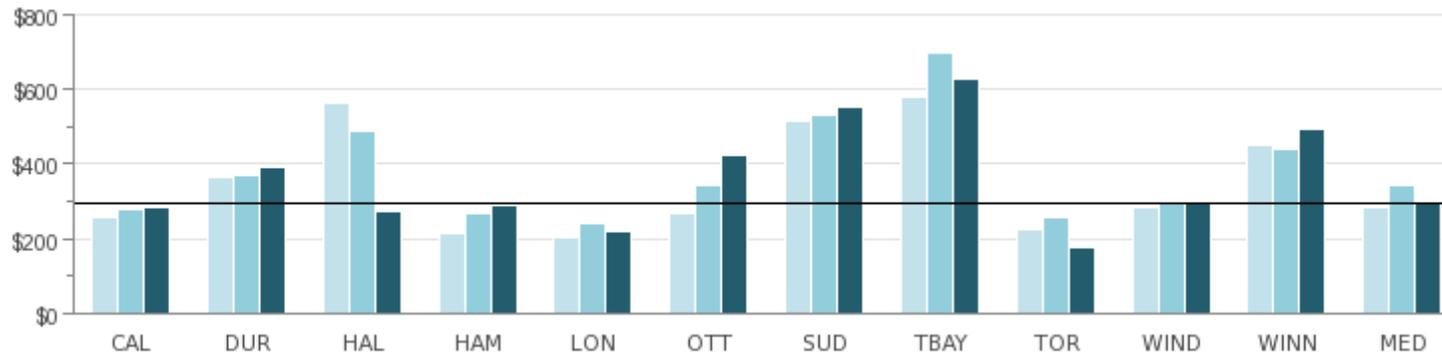
Note: Refer to additional information regarding integrated vs. two-tier systems. Municipalities providing service over a broad geographic area generally have higher operating costs due to the number and type of water treatment facilities operated and the distance between the individual systems. This has an impact on the daily operating costs for both the treatment and distribution of drinking water. The amortization component can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc.

Comment: Waterloo is not responsible for distribution or transmission, therefore there are no results.

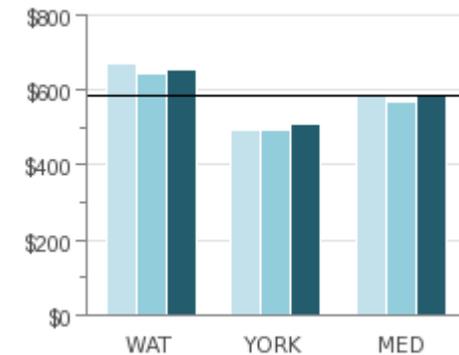
## What is the total cost for the treatment of drinking water?

Fig 36.5 OMBI Total Cost for the Treatment of Drinking Water per Megalitre of Drinking Water Treated (includes amortization)

### Integrated Systems



### Two-Tier Systems



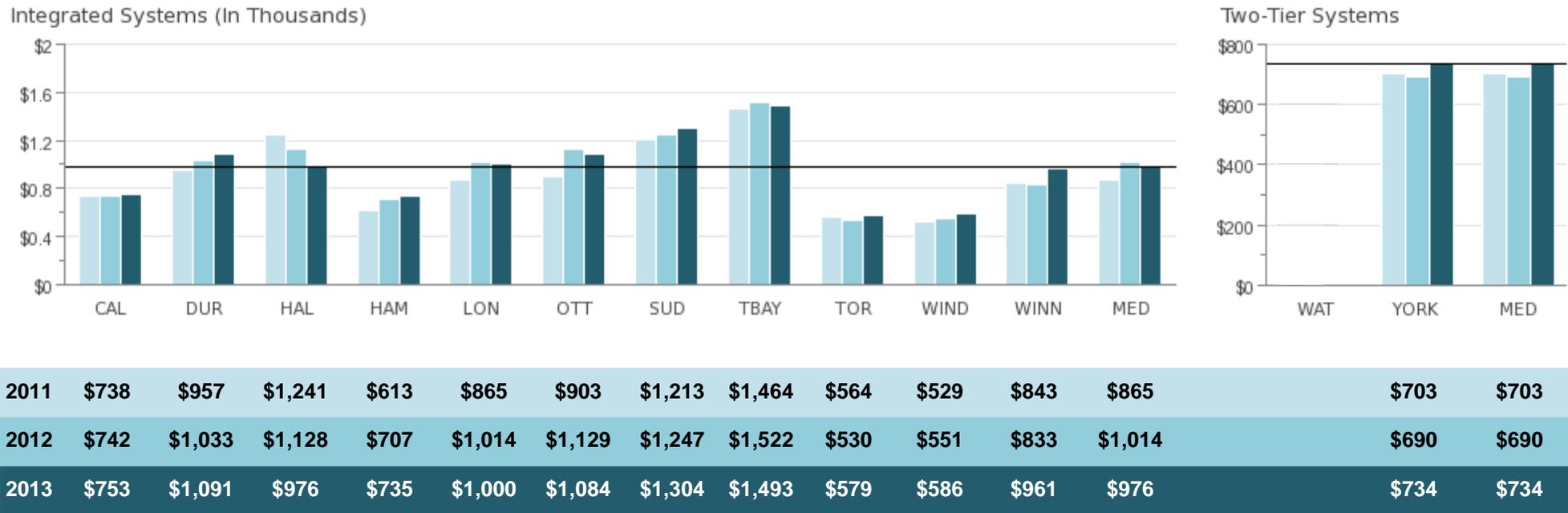
<b>2011</b>	<b>\$256</b>	<b>\$363</b>	<b>\$562</b>	<b>\$214</b>	<b>\$205</b>	<b>\$269</b>	<b>\$515</b>	<b>\$577</b>	<b>\$227</b>	<b>\$284</b>	<b>\$453</b>	<b>\$284</b>	<b>\$673</b>	<b>\$494</b>	<b>\$584</b>
<b>2012</b>	<b>\$277</b>	<b>\$369</b>	<b>\$488</b>	<b>\$270</b>	<b>\$242</b>	<b>\$344</b>	<b>\$530</b>	<b>\$695</b>	<b>\$260</b>	<b>\$293</b>	<b>\$442</b>	<b>\$344</b>	<b>\$641</b>	<b>\$493</b>	<b>\$567</b>
<b>2013</b>	<b>\$282</b>	<b>\$394</b>	<b>\$276</b>	<b>\$288</b>	<b>\$218</b>	<b>\$426</b>	<b>\$553</b>	<b>\$627</b>	<b>\$176</b>	<b>\$296</b>	<b>\$494</b>	<b>\$296</b>	<b>\$655</b>	<b>\$509</b>	<b>\$582</b>

Source: WATR310T (Efficiency)

Note: Refer to additional information regarding integrated vs. two-tier systems. Costs include operation and maintenance of treatment plants as well as quality assurance and laboratory testing to ensure compliance with regulations. The amortization component can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc.

## What is the total cost for the treatment, distribution and transmission of a megalitre of treated drinking water?

Fig 36.6 OMBI Total Operating Cost for the Treatment and Distribution / Transmission of Drinking Water per Megalitre of Drinking Water Treated



Source: WATR315T (Efficiency)

Note: The amortization component can vary significantly from year to year depending on the type of infrastructure, capital fund expenditures, etc.

Comment: Waterloo is responsible for treatment only; therefore there are no results for this total cost measure.