



Toronto Wastes 103-Million Litres of Water Daily Due to Aging Pipes

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In Toronto, residents and businesses are fortunate to have access to fresh and safe drinking water. However, it comes at a cost. While residents gain access to clean drinking water, the city loses millions of litres of water daily, due to leaky, broken, and aging pipes, according to a new study from the [Residential and Civil Construction Alliance of Ontario](#) (RCCAO).

The study, titled *Water Infrastructure in the 21st Century: Smart and Climate-Savvy Asset Management*, not only indicates that a massive amount of drinking water in Toronto and other Ontario municipalities is being wasted, but it also paints an alarming picture of the extent of the problem and indicates the province's systems are in dire need of repair.

The study, done by Tamer El-Diraby — a professor in civil and mineral engineering at the University of Toronto — indicates that many Ontario municipalities report an estimated leakage rate of at least 10%.

However, the study also notes that reports by consultants who conducted actual assessments show that rates in Ontario could be as high as nearly 40%. For example, one analysis for the Town of Smiths Falls estimated that rates between 2003 and 2019 ranged between a staggering 41% and 67%.

Here in Toronto, the city consistently has a leakage rate of 10-15%, the study notes, meaning it wastes 103-million litres per day. The volume of losses is equivalent to supplying the daily demand of a system servicing a population of about 250,000 people, or filling more than 15,000 Olympic-sized swimming pools every year.

“The findings of this study are alarming because they confirm that our water infrastructure is ageing and in dire need of repair,” says RCCAO executive director Nadia Todorova.

“Governments must provide sustained funding to fix and replace these critical infrastructure assets. It's incredibly inefficient and almost singlehandedly defeating our water conservation goals when treated drinking water never makes it to the taps because of leaky pipes.”

According to the survey, addressing water leakage has a “myriad” of benefits and cost-saving potential for municipalities, and, in turn, Ontarians who effectively pay for the cost of this leakage.

For example, the study found that fixing leakage in a single section of the water system in York Region saved 139,000 cubic metres a year in water. This is the equivalent of 75 elevated tanks and \$426,000 annually in cost and 102-megawatt hours a year in energy — or enough to power 11 homes for a year and 4.1 tonnes of CO2 for the year.

To address the problem, the study suggests that:

- Ontario should stay the course and continue to provide funds for asset management (AM) projects;
- Stable funding should be allocated to support an extended asset-energy-carbon analysis that will define the return-on-investment beyond the financial aspects of AM projects;
- Money be provided for municipalities to adopt best practices, lead innovation, and develop accountable plans for investment and performance optimization.

The study noted that while there has been significant progress in AM awareness and mastery of best practices in Ontario, more work needs to be done.

For example, a 2018 survey of 308 water utilities in North America showed that the typical age of a failing watermain is 50 years. That failure age is “disturbing” because about 28% of all watermains have an age of 50 years or older.

In Toronto, the study notes that 16% of the more than 6,000 kilometres of watermains are between the ages of 80-100, and 11% are more than 100 years old. What’s more, the City of Toronto experiences an average of 1,400 watermain breaks annually. It replaces about 35 to 50 kilometres of watermains each year, meaning it’s working on the assumption that the service life of a watermain is 110-166 years.

“It is imperative that Ontario stay the course to preserve the value of its water infrastructure assets as well as embrace new asset management practices to make the infrastructure more resilient,” says Prof. El-Diraby.

“We must pivot to face future challenges. If we let our guard down, the repercussions will be much higher than the simple issue of crumbling assets and lower levels of services.”

You can read the full report [here](#).