

# Millions of cubic litres of water wasted annually: RCCAO report



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## A new report from the Residential and Civil Construction Alliance of Ontario calls attention to the poor state of repair of underground municipal water pipes, and suggests tactics to repair wasteful assets.

A new report from the Residential and Civil Construction Alliance of Ontario (RCCAO) suggests that leaky municipal water pipes waste millions of cubic litres of water every year.

The study, *Water Infrastructure in the 21st Century: Smart and Climate-Savvy Asset Management Policies*, finds that many Ontario municipalities report an estimated leakage rate of at least 10 percent. It also notes that reports by consultants who conducted actual assessments show that leakage rates could be as high as 40 percent in some areas.

One analysis in Smiths Falls, for example, estimated that rates between 2003 and 2019 ranged between 41 percent and 67 percent.

The City of Toronto, meanwhile, has consistently reported a leakage rate of between 10 percent and 15 percent, the study notes. That translates to 103 million litres in wasted water daily, or the equivalent of supplying the daily demand of a system servicing a population of about 250,000 people.

The study, which was written by University of Toronto civil engineering professor Tamer E. El-Diraby, looks at the conditions of water pipes across various Ontario municipalities, as well as reasons for the leakages, and the means available to detect and forecast leaks. It also outlines the economic and environmental case for sustained investment in water infrastructure. The report.

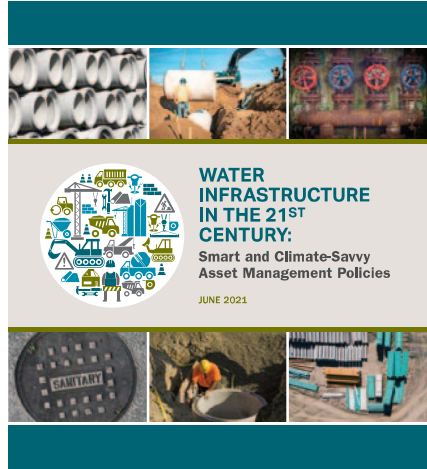
“The findings of this study are alarming because they confirm that our water infrastructure is aging and in dire need of repair,” says RCCAO executive director Nadia Todorova. “Governments must provide sustained funding to fix and replace these critical infrastructure assets. It’s incredibly inefficient and almost singlehandedly defeating our water conservation goals when treated drinking water never makes it to the taps because of leaky pipes.”

Addressing water leakage has myriad benefits and cost-saving potential for municipalities and taxpayers. 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, or the equivalent of 75 elevated tanks, and also \$426,000 annually in cost as well as 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.

The study recommended three things. One, that Ontario should the course and continue to provide funds for asset management (AM) projects. Two, that it allocate stable funding to support an extended asset-energy-carbon analysis that will define the return-on-investment beyond the financial aspects of AM projects. And three, that money be provided for municipalities to adopt best practices, lead innovation, and develop accountable plans for investment and performance optimization.

“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.”



While there has been significant progress in AM awareness and mastery of best practices in Ontario, the study found there is more work that needs to be done. For example, in 2018 a 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 percent of all watermains have an age of 50 years or older.

The study notes that, in Toronto, 16 percent of the more than 6,000 kilometres of watermains are between 80 and 100 years of age; 11 percent are more than 100 years old. The city experiences an average of 1,400 watermain breaks annually and 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 between 110 and 166 years.

More than one in four (28 percent) of Ontario watermains are over 50 years. Significant changes in funding to repair or replace those assets is therefore essential. The City of St. Catharines, for example, increased its watermain replacement budget, and in so doing, reduced its average rate of watermain breaks by two thirds—from 45 per 100 kilometres in 2000 to 15 per 100 km in 2012.