

Reducing Municipal Water Loss and Energy Consumption through Pressure Management

Grid Innovation Fund Project Details

Lead Proponent: Hydratek

Partners: City of Ottawa, Durham Region, York Region, Ontario Clean Water Agency, Ontario Water Works Association, University of Toronto, Association of Municipalities Ontario

Strategic Area(s):	Enabling Non-Wires Alternatives
Project Total Cost:	\$1,148,399
Year Contracted:	2019
Status:	Active
Location:	Ottawa, Durham region, York region
Economic Development:	N/A

Project Objectives

The Ontario water distribution and treatment sectors are the largest municipal electricity consumers, representing more than a third of annual electricity consumption.

This project is intended to provide municipalities and their water utilities with a cost-efficient method to identify and remediate water leakages in the municipal water distribution systems.

The project will develop and deploy a mobile testing unit to measure minimum night flows (MNF), which can be an indicator of leakage. It will also test the impacts and benefits of applying permanent pressure management systems to reduce identified leakage, thereby decreasing pumping needs as well as other associated energy inputs. The project will evaluate whether the benefits of pressure management systems are sufficient to warrant their implementation.

This project involves the development and deployment of a mobile testing unit (i.e. tool) designed specifically to:

- Measure minimum night flows (MNFs) into discrete sectors of water distribution systems, commonly known in the industry as District Metering Areas (DMAs)
- Test the impact of pressure reduction on reducing MNFs

The resultant tool will represent an affordable method for accurately and reliably measuring MNFs, a component of which includes leakage, and pressure reduction benefits so as to inform investment decisions on system interventions for leakage reduction, as well as provide a method (and tool) for consistent and repeatable measurements to quantify improvements achieved.

Expected Outcomes

Identifying and remediating water system leakage can result in significant financial savings for municipalities and their residents. If successful, this project will help to address municipal barriers to reducing water system leakage, including cost, uncertainty and lack of technical capacity, through the use of an affordable and accurate mobile testing unit.

The participation of key municipalities as well as the Ontario Clean Water Agency (OCWA) and the Ontario Water Works Association (OWWA) will result in wide dissemination of project outputs and lessons. This will lead to the scale-up and further utilization of the mobile testing unit to identify and take advantage of leakage reduction opportunities, ultimately resulting in further water and energy savings across the province.



Deployment of Hydratek's mobile testing unit.