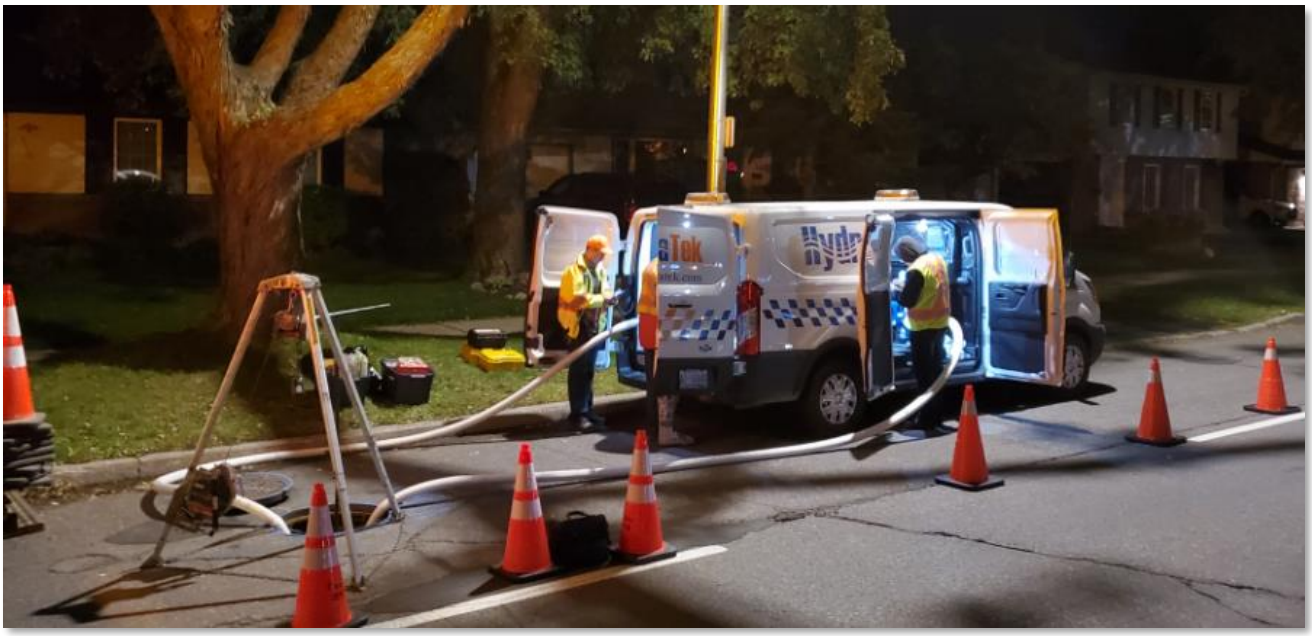
fabian papa & partners HydraTek & Associates

Divisions of FP&P HydraTek Inc.

On the Occasion of Winning the PEO York Chapter

2020 Engineering Research Project of the Year Award

Reducing Municipal Water Loss & Energy Consumption through Pressure Management



We are delighted to be the recipients of this award which recognizes our firm's commitment to connect engineering research and engineering practice.

ieso Independent Electricity System Operator

This project was made possible through the financial support of the Independent Electricity System Operator.

Please visit the project website at **www.hydratek.com/mobile_dma_testing**

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HydraTek & Associates
Tel: 416-238-7681
www.hydratek.com

Corporate Retreats

New Orleans 2017

London 2019

Puerto Vallarta 2020

A Brief History of the Firm

In 2006, fabian papa & partners was founded with the aim of providing thoughtful and customized engineering services supporting the land development industry. At the same time, a partnership was struck with Dr. Bryan Karney of the University of Toronto and founder of HydraTek & Associates, known for its specialization in hydraulic analysis of urban water systems with a focus on municipal clients. As time progressed, both businesses grew independently and were formally merged in 2015 to realize synergies relating to the overlapping nature of technical work, as well as to bring high-performing and like-minded professionals into a single, more efficient and mutually supportive environment in which excellence and growth could be fostered. The employee-owned organization is now in its 15th year of operation since the 2006 starting point, and enjoys a variety of client and project types, with assignments in Ontario, across Canada, in the US and México.

Services

Municipal Engineering | **Hydraulic Modelling & Analysis** | **Land Development Engineering**
Field Monitoring & Testing | **Water Loss Management** | **Research & Development**
Pump Performance & Efficiency Testing | **Computational Fluid Dynamics (CFD) Modelling**
Forensic Investigations & Expert Testimony | **Education & Training**

Pump Performance & Efficiency Testing

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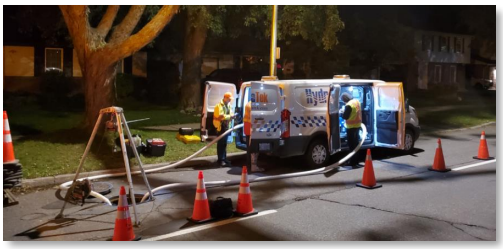
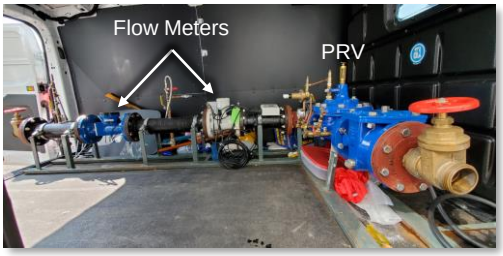
HydraTek & Associates

Specialists in Hydraulic and Energy
Investigations of Urban Water Systems

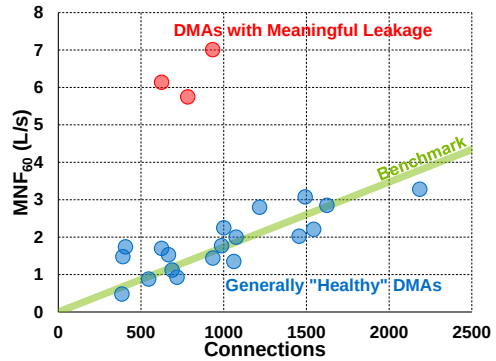
Mobile District Metered Area (DMA) Testing



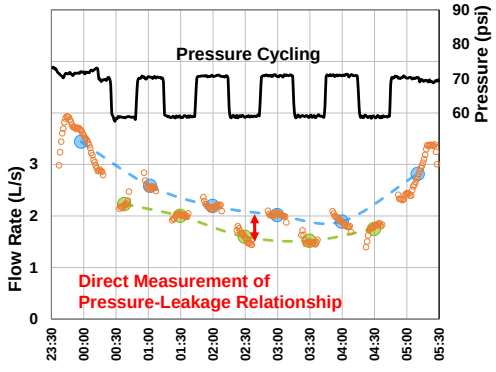
Typical Mobile DMA Test Setup



Mobile DMA Unit Process Piping



DMA Performance Benchmarking



Pressure-Management Effectiveness Testing

What is a DMA?

A district metered area (DMA) is a discrete sector of a water distribution system in which net inflows are accurately measured using one or more meters at the DMA boundaries. This allows for the assessment of leakage characteristics within the DMA by comparing net inflows with metered consumption in the area where any difference may be attributable to leakage, as well as the measurement of the minimum night flow (MNF) which is an indicator of potential leakage.

Why a Mobile DMA Testing Unit?

DMAs may be configured as either permanent or temporary installations. Permanent DMAs are typically quite costly to implement and typically involve the construction of underground chambers with accurate in-line metering equipment, isolation valves and sometimes pressure reducing valves (PRVs). Temporary installations are considerably more affordable and involve the use of portable flow metering technology – typically insertion or clamp-on ultrasonic flow meters – and which may suffer from metering inaccuracies, particularly for smaller DMA sizes where lower nighttime flow rates may be below the detection limits of the technology. The mobile DMA testing unit allows for the accuracy of metering offered by permanent installations at a cost that rivals temporary installations.

Minimum Night Flow (MNF) Assessment

The mobile DMA testing unit is specifically designed to measure MNF values during overnight periods, the results of which can be compared to benchmarks established from relevant peer group testing to identify whether meaningful leakage exists and to what extent. The MNF is a reliable indicator of leakage owing to the predictability of human behaviour.

Direct Pressure Management Effectiveness Testing

The mobile DMA testing unit also includes a PRV that allows for the direct measurement of the impact of pressure reduction on leakage reduction which is not otherwise possible with temporary installations.

Connection & Operation of the Mobile DMA Testing Unit

Connections to the water distribution system can be made using either taps in existing valve chambers or at hydrants, depending on the circumstances. This YouTube video discusses the operation of the mobile testing unit.

Resources

For additional information, including publications and presentations, visit:
www.hydratek.com/mobile_dma_testing

Contacts

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