

Moving Towards Smart Water in Ontario

Summary of a Stakeholder Workshop held Wednesday November 30th

Hosted by:



SOUTHERN ONTARIO WATER CONSORTIUM

LE CONSORTIUM POUR L'EAU
DU SUD DE L'ONTARIO

Summary

Increasingly, “smart” tools and techniques are being developed and implemented for water management and treatment that help to extend asset life, reduce energy and water use, and provide better client service, ultimately leading to more strategic asset management and saving money. And many Ontario companies are advancing “smart” products and services.

The purpose of this workshop was to facilitate a structured engagement between companies, municipalities and researchers focused on the key challenges and opportunities for more widespread adoption of these technologies and approaches. Our key question was “What specific actions or changes would facilitate transforming to fully “smart” water utilities through the uptake of innovative approaches and technologies?” A visioning exercise focused on the current and necessary future conditions to enable the adoption of more “smart” approaches technologies and articulate a set of desired outcomes for the sector.

Emerging from the discussion and previous events (see box below) the host organizations put forward the following “critical conditions” that must be put in place for Ontario to be a leader in the adoption of technologies in this important area:

1. Performance-based Asset Management Planning will be implemented by all municipalities.
2. Infrastructure funding programs will be linked to sustainability and innovative approaches, including dedicated funding for innovative approaches and technologies.
3. Utilities will be fully optimized including process optimization, energy and water efficiency.
4. Common performance measures will be in place, with benchmarking.
5. Water systems will be financially sustainable – revenues will pay for services (and revenue will not be restricted to rates only).
6. Municipalities will have the tools and support they need (i.e. templates, available expertise and funding) in place to accomplish all of above.
7. A culture of innovation will exist in the workforce of water – planners, operators, managers and decision-makers – integrating water with broader "smart" strategies.

In addition to above, there are a number of fundamental drivers and opportunities that are going to necessitate a shift to ‘smart’ or digital approaches, including:

1. Emergence of new tools and technologies:
 - a. Credible companies in the Ontario technology landscape
 - b. Demonstrated benefit, but lack of adoption
2. Real needs for new approaches:
 - a. Imperative to reduce asset management costs and capital investment needs (extending asset life)
 - b. Breaking the dependency between water rates (with declining use and increasing conservation) and revenue (i.e. maintaining revenue through finding process and business efficiencies)
3. Changing government expectations:
 - a. Push toward “open data”
 - b. Drive toward energy efficiency / GHG reductions
 - c. Expectation of adoption of new technologies
4. Changing public expectations:
 - a. Transparency, desire for information
 - b. Need for well-informed customers (re: value of service with increasing rates)
 - c. New customer interface tools, personal control of information.

The host organizations will work to include these priorities and messages into future events, dialogue and communications. We encourage others to use the language to advance similar priorities.

Sustainable Infrastructure Recommendations to the Federal Infrastructure Minister

In June, 2016 SOWC, OCWA and WaterTAP hosted a session for water leaders from technology companies, municipalities, and the broader water sector to present four strategic recommendations to the Honourable Amarjeet Sohi, federal Minister for Infrastructure and Communities. The recommendations were intended to inform the federal government's design and implementation of "phase 2" of its Clean Water and Wastewater Fund. The four key recommendations, which should be considered part of a comprehensive package rather than stand-alone options, included:

Recommendation #1: Create a dedicated program to help municipalities get the most out of their existing assets. A dedicated fund should support effective performance-based asset management planning, and programs for optimization and efficiency (including conservation and inflow/infiltration reduction and minimizing sewage bypass events). It would build upon the new dedicated national fund (through Federation of Canadian Municipalities) to support asset management planning best practices. It should also make available dedicated expertise, training and tools to support small municipalities including templates and tools to support the development of appropriate full cost rate structures.

Recommendation #2: Create a dedicated funding program to help municipalities implement projects to increase capacity or performance with non-traditional approaches. A dedicated fund should support upgrades and repairs, living green infrastructure, innovative approaches and technologies including hardware and software to support maintenance management, monitoring and automation ("smart" systems and enhanced data collection). It will help municipalities identify, promote and invest public dollars in projects that can defer capital costs, quickly realize cost savings, and promote cost-effective, green and sustainable approaches and technologies before they consider new or expanded infrastructure.

Recommendation #3: All major infrastructure funding programs must include criteria that prioritize sustainability and resilience and encourage and support innovation. Once the activities and approaches described in the previous recommendations are enabled, this would require that municipalities plan for and fully implement those approaches with clear preconditions before any major infrastructure investment will be considered. Prerequisites should include having in place a performance-based asset management plan; implementation of a recognized optimization program (such as the Composite Correction Program) which will improve performance with minimal or no capital investment; and tracking and reporting of key performance indicators including energy consumption, GHG emissions and carbon footprint.

Recommendation #4: Adopt wastewater regulations that set clear expectations that support the bold vision the government puts forward. Incorporate performance-based effluent targets and benchmarks into regulations for wastewater systems that are based on fully optimized treatment facilities. Work with the provinces and territories to bring in requirements that all facilities set targets for nutrient recovery, water reuse, drinking water treatment performance and minimization of energy consumption. These are becoming expectations globally, and Canada's vision and regulations need to set the country on a path to accomplish this while encouraging made-in-Canada expertise and technologies.