Municipal Water Demand Management

PRIMER 4 Water Metering

P4

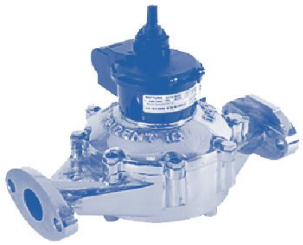
Grand River Watershed
Water Management Plan

water savings	revenue risk	ease of use	cost
high	high	moderate	high

How can water meters benefit WDM in your Municipality?

Water meters are often considered the first step in water demand management and are key to helping both the municipality and users understand how much water is being used and where.

Metering also sets the stage for adopting a more equitable user-pay structure that is representative of the true costs for water services. Flat rate water fees – the only option in a non-metered system – are often associated with the perception of "unlimited supply", and could therefore actually deter water conservation. In contrast, charging customers by volume increases their awareness of the link between the amount of water they use and the amount they pay, which typically leads to reduced water use.



More than Just a Water Conservation Tool

Beyond the obvious benefits of decreasing demand, water meters can help a municipality:

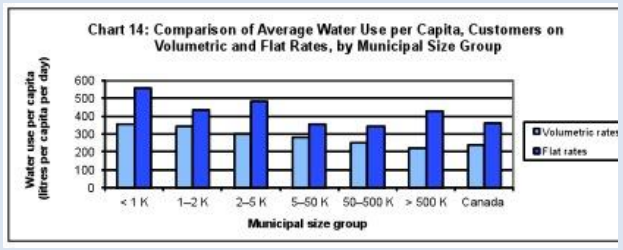
- Track progress in municipal water conservation monthly, seasonally and/or annually;
- Identify high water users and areas of water loss, often "low-hanging fruit" solutions where scarce monetary resources can be directed;
- Estimate water use by sector and employ "narrowcasting" techniques (see **Primer #3**);
- Showcase your progress by comparing numbers with other similarly-sized communities or a national average;
- Provide essential management information to system operators in both water and other utilities (e.g. energy) for improved efficiencies; and
- Use the collected data for better long-term WDM planning through forecasting future water use.

What Gets Measured Gets Managed

While there are many factors influencing water consumption behaviour in a community, flat versus volumetric rates play a large role.

Environment Canada's *2011 Municipal Water Pricing Report: 2009 Statistics* found that households on a flat rate system use 52% more water (361 litres per person per day) than households paying per volume of water used (238 liters per person per day).

Determining a water rate that works best for your municipality's context, resource needs, and customers can be a complex task. **Primer #8** – Conservation Pricing – provides some ideas and examples of water rates used by municipalities across the Grand River watershed and beyond.



***2011 Municipal Water Pricing Report: 2009 Statistics,* Environment Canada**

How can your Municipality get started?

Installing water meters requires a large capital investment and public support. Once installed, the effect on water demand may be substantial – so substantial that the municipality faces reduced revenue.

These challenges are felt especially by small municipalities that have fewer resources and personnel.

Municipalities across the Grand River watershed have used creative strategies to overcome these obstacles. These are outlined in the following chart:

Challenge	Creative solution
Large Capital Investment	• Applying for provincial and federal grants • Partnering with neighbouring communities to share costs
Lack of Public Understanding and Support for Water Meters	• Fostering an informed public with regular communications explaining rate increases (see **Primer #3**) • Framing the need for changes in terms the target audience can relate to • Being proactive with public engagement • Illustrating the absolute impact of rate increases in relatable terms for consumers – e.g. "a 10% rate increase is equivalent to only X cups of coffee over the year"
Revenue Loss	• Conducting sewer and water rates study to recover costs • Adjusting water rates, coupled with education campaign • Clustering financial systems • Using a monthly base rate to cover standard expenses

Funding Opportunities for Installing Water Meters

The *Federation of Canadian Municipalities Green Municipal Fund* provides low-interest loans and grants for capital water projects with the potential to reduce per capita consumption by 20 per cent.

The *Ontario Small Waterworks Assistance Program (OSWAP-3)* provides funding for water meter installation for small municipalities serving 5,000 or fewer customers. Further provincial funding opportunities may be forthcoming, associated with regulations soon to be released under the 2010 Ontario *Water Opportunities Act.*

Case Study

Metering in Small Systems: Township of Centre Wellington

Population (2011): 26,693
Density: 65.5 people/km^2
Number of Meters/Services: ~6000
Water Supply: Groundwater

In 2003, the Township of Centre Wellington installed water meters for residential and ICI customers, initiating their water/wastewater user-pay system.

They saw a 15% drop in revenue in the first year, primarily from residential customers. To keep revenue stable, the Township has both a base rate and volumetric rate. The monthly base rate (which does not change with volume consumed) covers the cost of maintenance, programming and meter replacement, ranging from $9.05 for meters that are 3/4" or less to $297.49 for 10" meters (2012 rates). The volumetric rate covers the costs of delivering water and programs.

Despite the challenges of reduced revenue, the Township has experienced major benefits from the detailed water use data collected from each of 6,000 metered customers.

This data – and the advantage of being a small system – has allowed the Township to identify leaks and large water users, helping to target limited resources for follow-up.


Karen MacMillan, Township of Centre Wellington

Karen McMillan, Environmental Support Coordinator, commented, "I use data from my spreadsheet two or three times a day! I often know before someone at home knows that they have a water leak".

With the water use data, McMillan has been able to help notify homeowners of small indoor leaks, as well as track non-compliance to the Township's outdoor water use by-law through large jumps in water use. In both cases, a follow-up call, visit or information reminder can be provided to that user.

The Township has also been able to monitor system leakage by comparing amount of water pumped to that consumed and infiltrated as wastewater. The calculated 20 to 25 per cent monthly loss highlights a key area where the Township can focus on improving water efficiencies.

Resources:

- Alliance for Water Efficiency's Resource Library: http://www.allianceforwaterefficiency.org/resource-library/default.aspx
- Building Canada Fund – Communities Component: http://www.infrastructure.gc.ca/prog/bcf-fcc-eng.html#cc-vc
- Federation of Canadian Municipalities (FCM) Green Municipal Fund: http://www.fcm.ca/home/programs/green-municipal-fund/what-we-fund/projects/water-funding.htm
- Ontario Small Waterworks Assistance Program:
- http://www.moi.gov.on.ca/en/infrastructure/sectors/oswap.asp

The Water Demand Management Primer series was developed in partnership with the following municipalities and partners:

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