



## GREAT LAKES AND ST. LAWRENCE CITIES INITIATIVE WATER CONSERVATION FRAMEWORK

### Participating Cities Best Practices July 2008

Best Practice	Description	Efforts of WCF Participant Cities
<p><i>Public Education and Outreach</i></p>	<p>Public education is essential to any city's water conservation plan. Increased consumer awareness has the ability to change water consumption behavior.</p>	<ul style="list-style-type: none"> <li>• <b>St. Catharines, ON:</b> The City offers free water conservation presentations to all city schools, targeting grades 4-6 to educate students about the water cycle, societal use of water and water conservation techniques.</li> <li>• <b>Toronto, ON:</b> The City bi-annually distributes a newsletter called WaterWatch to all houses and apartments, which provides tips and information about water and conservation. Advertisements are posted in daily and ethnic newspapers, local radio stations, and transit shelters to educate citizens about peak time water issues and efficient lawn watering.</li> </ul>
<p><i>Rebate Programs for Water Efficient Appliances</i></p>	<p>Rebate programs provide incentives to customers to invest in efficient appliances like washing machines and toilets that save water and energy. A standard domestic washing machine uses 45-55 gallons per load. A water efficient washing machine uses about half of that amount.<sup>i</sup></p> <p>Toilets and urinals alone account for nearly one-third of building water consumption in the U.S. Unless a facility is relatively new or has been refurbished recently, chances are that the toilets and urinals are consuming too much water.<sup>ii</sup></p>	<ul style="list-style-type: none"> <li>• <b>Durham Region, ON:</b> Durham has subsidized the replacement of over ten thousand inefficient 13 litres (L) and 20L toilets, saving approximately 253,415m<sup>3</sup> (66, 945,160.6 US gallons) of water.</li> <li>• <b>Region of Peel, ON:</b> The City offers \$60 rebates to residents of property owners who replace inefficient toilets with new <i>Peel-Approved Toilets</i> through the Residential Toilet Replacement Program. The program also includes \$100 rebates for high efficiency toilets that flush with 4.8 L or less.</li> <li>• <b>Toronto, ON:</b> Implemented a High Efficiency Clothes Washer Pilot Project in 1999 involving a total of six buildings, 945 suites, 1,626 tenants, and 39 clothes washers and dryers. Each site had a centrally located coin-operated laundry facility. The total water savings were about 45 percent (from 30.5L per day per suite to 16.6L per day per suite).</li> </ul>



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<p><i>Universal Metering</i></p>	<p>Water metering leads to a change in behavior by allowing customers to better track their consumption and thereby reduce water use. Meters provide the data necessary for assisting in managing water use and determining leakages.<sup>iii</sup> According to Environment Canada, universal water metering has proven to reduce overall residential, industrial and commercial water consumption by 15 to 30 percent.<sup>iv</sup> Water metering is also necessary for implementing variable pricing programs.</p>	<ul style="list-style-type: none"> <li>• <b>Chicago, IL:</b> Automatic Meter Reading (AMR) devices will be installed on all existing water meters throughout the City by 2010.</li> <li>• <b>Hamilton, ON:</b> The City initiated its Water Meter Project in the spring of 2002 and contracted the Water Wise Water Meter Installation team to implement the program. To date, 99.8% of Hamilton's homes have water meters installed.</li> <li>• <b>Montréal, QU:</b> The City is in the process of approving a \$200 million expenditure to fund a multi-year water meter installation program whereby approximately 29,000 new meters will be installed among commercial, industrial and institutional heavy users.</li> <li>• <b>Buffalo, NY:</b> The meter installation program started in 1998 and about 45,000 flat rate services have been retrofitted with new electronic meters and 19,000 existing meters have been replaced and upgraded to electronic touch pad style meters. From the beginning of the universal water meter installation program in 1998 to 2007, the average daily water consumption has dropped 16 percent.</li> </ul>
<p><i>Water main Rehabilitation, Leak Detection and Repair</i></p>	<p>Detecting and repairing leaks in city water mains minimizes the amount of lost water and reduces the amount of water pumped, saving water and energy. In addition, controlling and repairing corrosion on metallic pipelines helps to prevent future water main leaks.</p>	<ul style="list-style-type: none"> <li>• <b>Beaconsfield, QU:</b> In 2007, the City launched a 13 year infrastructure renewal program partnering with the federal government in a \$2.5 million investment.</li> <li>• <b>Chicago, IL:</b> Chicago's program targets a replacement rate of approximately one percent of the system's 4,230 miles of pipe each year.</li> <li>• <b>St. Catharines, ON:</b> The City is aiming to replace 2 percent of its water main network each year using a balanced approach that considers the break history, discolored water complaints, pressure and flow problems as well as coordination with other sewer and road projects.</li> <li>• <b>Toronto, ON:</b> A comprehensive infrastructure rehabilitation program is currently being considered.</li> <li>• <b>Rochester, NY:</b> Rochester has dedicated crews to leak detection and water consumption management. The use of mechanical, acoustical and electric leak detection equipment has helped the city reduce its lost water. The City has also implemented an intensive corrosion control program, where corrosion control equipment and monitoring devices have been installed on most of the large transmission pipelines and many of the distribution pipelines.</li> </ul>



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<p><i>Conservation Rate Structures</i></p>	<p>Water rates can be structured to promote water conservation by providing price signals that prompt consumers to use water efficiently. The two primary types of conservation rates are: <i>Inclining block rate</i>, in which the amount paid per unit of consumption increases when larger amounts of water are consumed and; <i>Seasonal rate</i>, in which a higher price per unit is charged during peak summer periods.<sup>v</sup></p>	<ul style="list-style-type: none"> <li>• <b><i>Cobourg, ON</i></b> and <b><i>Sault Ste. Marie, ON</i></b> have inclining rate structures for water.</li> </ul>

<sup>i</sup> *New York City City Department of Environmental Protection*. (2007, August 9). Retrieved July 1, 2008, from Residential Water Use: <http://www.nyc.gov/html/dep/html/residents/wateruse.shtml>

<sup>ii</sup> *U.S. Department of Energy: Energy Efficiency and Renewable Energy*. (2008, February 13). Retrieved July 1, 2008, from Federal Energy Management Program-Water Efficiency (Toilets and Urinals): [http://www1.eere.energy.gov/femp/water/water\\_bmp6.html](http://www1.eere.energy.gov/femp/water/water_bmp6.html)

<sup>iii</sup> *Municipal Research and Services Center of Washington*. (2008, March). Retrieved 1 2008, July, from Water Conservation Measures (Metering): <http://www.mrsc.org/Subjects/Environment/water/wc-measures.aspx#Metering>

<sup>iv</sup> *Environment Canada*. (2008, January 8). Retrieved July 1, 2008, from Freshwater Website: Quickfacts: [http://www.ec.gc.ca/water/en/e\\_quickfacts.htm](http://www.ec.gc.ca/water/en/e_quickfacts.htm)

<sup>v</sup> *Conservation water rate structure*. (n.d.). Retrieved July 1, 2008, from Water Wise Communities: <http://www.ipswichriver.org/waterwise/tool11.htm>