

IN THE MIDST OF CHANGE  
CHALLENGES AHEAD FOR THE CANADIAN AGRI-FOOD SECTOR  
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À LA CROISÉE DES CHEMINS:  
LES DÉFIS À VENIR POUR LE SECTEUR AGROALIMENTAIRE CANADIEN

ABSTRACT 12

**Reducing Peaks in Drinking Water Demand in the City of Guelph:  
Estimating the Potential Cost Savings of Delaying Water System  
Capacity Expansions**

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The obligation to meet any level of drinking water demand is exceptionally costly for water utilities in Ontario<sup>1</sup>. The highest peak in demand (maximum demand) determines the level of infrastructural and water source capacity that a utility must construct and maintain<sup>2</sup>. Therefore, a reduction in maximum demand leads to substantial savings over time and increased water source security. One conservation strategy that may reduce maximum demand effectively is the use of dual water rates: an interruptible rate and a priority rate. An interruptible rate would charge consumers a lower price but give the utility the ability to restrict water usage during peak demand periods, while a priority rate would be more expensive and not be interrupted. This project will estimate the cost savings associated with delaying capacity expansions over a 25-year period through the use of two water rates for the City of Guelph. Demand simulations will be computed and cost savings will be calculated through a cost-benefit analysis. The cost savings of this project will be compared with other common drinking water conservation strategies. Preliminary results suggest infrastructural savings of approximately \$30 million from a 10% reduction in maximum demand. The benefits in terms of water source replenishment have yet to be estimated. The conclusion of this project will develop a general framework applicable to all water utilities in Ontario for determining the cost efficiency associated with peak demand management through dual water rates.

References:

Renzetti, Steven. 2009. Wave of the Future: The Case for Smarter Water Policy, C.D Howe Institute: Commentary 281:1-21.

Ministry of the Environment. 2008. Design Guidelines for Drinking-Water Systems. Government of Ontario. Available at <http://www.ontario.ca/document/design-guidelines-drinking-water-systems>