



CITY OF KINGSTON
**REPORT TO ENVIRONMENT,
INFRASTRUCTURE AND TRANSPORTATION
POLICIES COMMITTEE**

Report No.: EITP-12-004

TO: Chair and Members of the Environment, Infrastructure and Transportation Policies Committee

FROM: Jim Keech, President and CEO

RESOURCE STAFF: Jim Miller, Director, Utility Engineering
Steve Sottile, Conservation Officer

DATE OF MEETING: December 13, 2011

SUBJECT: Water Efficiency Retrofit Incentive Program

EXECUTIVE SUMMARY:

The number and size of applications to Utilities Kingston’s multi-residential low-flow toilet rebate program has begun to decline as this successful, multi-year program reaches market saturation.

Utilities Kingston believes that expanding both the types of measures and the types of participants eligible to receive water conservation rebates will help accomplish the following:

- Effective application of the approved water conservation incentive program budget.
- Cost effective and verifiable water savings.
- Alignment of water conservation funding processes with those used for province-wide electricity conservation incentive programs.
- Leveraging and funding of creative conservation ideas from our customers.
- Establishment of a more flexible water conservation rebate program structure that can adapt to changes in technology and react to market saturation of certain water efficiency measures on an ongoing basis.
- Provision of a more inclusive water conservation incentive program that reaches all sectors of our local commercial and institutional community.
- Prepare for potential province-wide water conservation expectations by increasing the sophistication of our programs and capacity of Utilities Kingston staff to deliver cost-effective conservation programming.
- Assists in addressing our Permit to Take Water applications with the MOE.

This report proposes that Utilities Kingston should offer both prescriptive and custom water conservation incentives to all multi-residential, commercial and institutional customers.

Prescriptive incentives, similar to the Multi-residential Toilet Rebate, will offer set amounts for certain measures that offer permanent, verifiable water savings. Custom incentives will offer a rate of \$5/m³ of verifiable, permanent water savings up to 20% of documented project costs for creative water conservation projects that are not on the list of prescriptive measures. A social housing adder will offer additional incentives to social housing providers that wish to lower their water and sewer costs through conservation efforts.

The change in program offering for conservation initiatives in water has no budgetary implications and current activities such as pre-approval, inspection, and claims processing procedures would remain unchanged.

RECOMMENDATION:

It is recommended that Council approve a Water Efficiency Retrofit Incentive Program that offers both prescriptive incentives that offer a set dollar amount per measure and custom incentives that offer \$5/m³ of annual water and sewer savings up to a maximum of 20% of eligible project costs. This new program will expand the water conservation measures eligible for funding to include measures other than toilet retrofits in multi-residential buildings.

AUTHORIZING SIGNATURES:

<u>ORIGINAL SIGNED BY PRESIDENT & CEO, UTILITIES KINGSTON</u> Jim Keech, President and CEO, Utilities Kingston
<u>ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER</u> Gerard Hunt, Chief Administrative Officer

CONSULTATION WITH THE FOLLOWING COMMISSIONERS:

Cynthia Beach, <i>Sustainability & Growth</i>	N/R
Lanie Hurdle, <i>Community Services</i>	N/R
Denis Leger, <i>Transportation, Properties & Emergency Services</i>	N/R

(N/R indicates consultation not required)

OPTIONS/DISCUSSION:

In late 2008 Council approved the first iteration of a water conservation program for the City of Kingston. That program had had three elements: a rain barrel program, a toilet replacement program and continuing education and public awareness programs. Many water savings measures generated from these programs translate to equivalent savings on the waste water side by reducing the volumes of collection, pumping and treatment. Kingston's water and sewer rates are based on the cost of water and sewer service provision to Utilities Kingston's customers.

The Current Multi-Residential Toilet Rebate Program, at \$60 per toilet, pays an effective average rate of between \$3.50 and \$7 per m³ of permanent, annual metered water savings. The effective \$/m³ rate varies based on average flush frequency and tank capacity reductions. Kingston's base variable water and sewer rates added together represent a cost to the customer of approximately \$1.39/m³.

The cost of installing a low flow toilet in a multi-residential building is assumed to be around \$300. The \$60 incentive represents around 20% of the average cost of this water conservation measure. This incentive has been well subscribed and effective in encouraging building owners to replace older, inefficient toilets. Setting a guideline of 20% of project cost for prescriptive measures and using 20% of project costs as a ceiling for custom incentives is in line with current practice and is effective in encouraging water conservation investment, and ensures that the City of Kingston's water rate payers are not paying unreasonably rich incentives to customers who also benefit from reduced water costs. This ceiling also ensures that customers and the utility are investing in measures that are reasonably cost effective on their own merits.

In order to ensure that the program maintains administrative cost effectiveness and to encourage more significant investments in water conservation, a minimum savings of 200 m³ of water savings would be required for custom stream projects.

For example: Retrofitting of fixtures and appliances in a high volume institutional kitchen could generate 800 m³ per year of water savings at an estimated cost of \$10,000. The customer would submit an application for pre-approval before any work was conducted that included the estimated water savings, costs and evidence documenting the systems currently in place. As is current practice for the toilet rebate program, Utilities Kingston staff would verify the details of the application and consult with the customer about their idea, potentially including a site visit to collect photographic evidence of the existing fixtures. The customer would then be pre-approved for an incentive. This pre-approval process verifies water savings up-front, prevents fraud, allows fair allocation of a limited budget among Utilities Kingston customers, and gives customers certainty that they will receive a set incentive before investing in water conservation.

Once the project is completed, evidence of project completion and costs would be submitted by the customer, and verification of the installation, costs, and savings would be conducted by Utilities Kingston staff. In this example, the project is completed as designed and pre-approved. At \$5/m³ of annual verified permanent savings, the custom incentive is calculated at \$4000. 20% of documented project costs is \$2000. The customer would be eligible for the lower of these two amounts, and would be paid \$2000 in a lump sum.

Prescriptive measures offer set incentive levels for specific water conservation measures. For example, the current incentive of \$60 per toilet for replacement of a 13 Litre per flush (Lpf) or greater toilet with one that uses 6 Lpf is a prescriptive incentive. Prescriptive incentives offer a simple, streamlined process and provide a “menu” of effective water conservation measures to customers. Over time, the menu of prescriptive measures could increase as staff research and custom applications reveal effective measures and effective incentive levels.

The first prescriptive measure recommended is continuation of the toilet rebate of \$60 per toilet with one change. As technology has developed, there has been a proliferation of 4.8L per flush (Lpf), single flush toilets, and dual flush toilets (with one option of less than 3 Lpf and another up to 6 Lpf) that have high reliability. In order to maximize water conservation from a given toilet replacement project, it is recommended that eligible toilets be limited to a 4.8L per flush single flush toilet, or a dual flush toilet with a maximum capacity of 6 L per flush.

There have been no applications over the past year for toilet retrofits at social housing units. This is due to the replacement of most if not all older toilets through Utilities Kingston, Federal, and Provincial funding envelopes. It is recommended that the \$125 per toilet incentive for social housing units be removed as a prescriptive measure, and a “social housing adder” be implemented in its place, in line with Ontario Power Authority electricity conservation incentives for social housing providers. This adder will allow water conservation measures to be funded to up to 40% of project costs, with ½ of pre-approved incentives paid to social housing providers up front to assist in cash flow and cost management for these vital service providers. Evaluation, Measurement & Verification best practices currently administered by Utilities Kingston staff for Kingston Hydro electricity conservation programs will also be adopted for water conservation incentive applications.

This program design and process is analogous to that currently administered by Utilities Kingston staff on behalf of Kingston Hydro for commercial and institutional province-wide Ontario Power Authority-contracted electricity conservation programs. Both Utilities Kingston staff and customers are familiar with this type of program design. Utilities Kingston staff will be able to cross-promote water and electricity conservation programs to its largest water and electricity customers that have similar application and incentive payment processes.

In late 2010, the Ontario Government passed the “Water Opportunities and Water Conservation Act”. This act has some similar elements to the Green Energy and Green Economy Act. It gives

the province the ability to set conservation expectations for municipal water utilities, similar to the manner in which Kingston Hydro is subject to electricity conservation targets as a condition of its license. This change in program offering will potentially place the City of Kingston in a better position to deal with the implementation of the Water Opportunities and Water Conservation Act, particularly when greater clarity on the requirements are issued by the Provincial Government.

Utilities Kingston does not currently offer toilet rebates to homeowners who pay their own water bill. Based on current Utilities Kingston water rates, replacement of high flush volume toilets in owner-occupied residences typically have a financial payback of 2 to 5 years while also improving property value. Investing in faucet aerators, high efficiency shower heads, and considering water efficiency when purchasing new appliances have similar or better paybacks. Since water efficiency is such a good financial investment for those who own their home and pay the water bill for the property, Utilities Kingston feels that conservation dollars are better spent in areas where financial or structural barriers prevent water efficiency investments.

The costs associated with marketing equipment replacement programs to residential customers is higher than that of marketing to businesses or institutions, the volume of verified savings per application is much lower, the opportunities for verifiable and permanent water and sewer savings are fewer and the current allocation of staff is insufficient to handle a large volume of smaller applications. Studies have shown that consumer behaviour is the single largest factor determining residential water use, whereas equipment and processes are the largest factor in the commercial, institutional, and multi-residential sectors. The Federal Eco-Energy program offers rebates for installation of low flow toilets at residences, so any incentive offered by Utilities Kingston could be considered redundant.

For these reasons Utilities Kingston believes that it is prudent for the City of Kingston continue to focus residential water conservation investment in education initiatives such as the Water Conservation Demonstration Garden, water conservation kits currently available at City customer service centres or by request, and community outreach.

EXISTING POLICY/BY LAW:

Currently, Utilities Kingston offers a Multi-Residential Toilet Rebate Program. Eligible customers include any multi-residential property with 3 or more separate units. \$60 per toilet is offered for replacement of toilets with a flush capacity of 13L or greater with one that has a flush capacity of 6L or less. \$125 is offered per toilet for eligible social housing units. The program requires that an application be made in advance of installation. Pre-approval is then granted by Utilities Kingston staff. Once the project is complete, the customer submits evidence of installation, proof of payment for the toilets and installation, and disposal of old toilets. Installation is verified by Utilities Kingston staff, and the incentive is paid to the customer.

Utilities Kingston feels that this program has been successful, but due to market saturation application size and frequency is steadily declining. In 2009, 31,317 m³ of water and sewer volume was reduced by property owners taking advantage of the program. In 2010, 23,000 m³ was saved. While projections for 2011 are higher in volume than the past two years, over 85% of the volume of water conservation achieved is due to a single very large application of a type unlikely to be seen in coming years. Without this particular project, savings would be in the 10,000 m³ range.

NOTICE PROVISIONS:

It is recommended that the new program be launched as of January 1st, 2012.

ACCESSIBILITY CONSIDERATIONS: Not Applicable.

FINANCIAL CONSIDERATIONS:

The current water conservation budget for 2012 of \$311,000 will not be affected by this change. Total incentives available will remain at previous levels, but the potential for full use of the conservation budget will increase as additional measures will be fundable.

Water conservation activities do however impact total revenues for the water and wastewater utilities. For example, for every 100,000 m³ reduction in annual commercial consumption, the water utility's revenues will be lower by approximately \$63,000. The wastewater utility's revenues will be lower by approximately \$76,000. Partially offsetting these revenue shortfalls will be reduced variable treatment costs. In addition, with reduced consumption, Utilities Kingston is able to analyze the impacts that conservation has on the timing of capital expenditure upgrades.

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OTHER CITY OF KINGSTON STAFF CONSULTED: Not Applicable

EXHIBITS ATTACHED: Not Applicable