



# City of Richmond

## Report to Committee

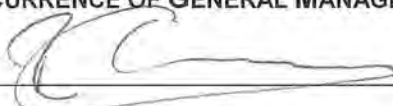

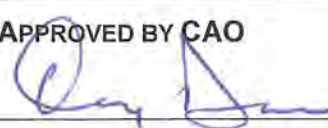
**To:** Public Works and Transportation Committee      **Date:** May 27, 2015  
**From:** John Irving, P.Eng. MPA      **File:** 10-6125-07-02/2015-Vol 01  
                  Director, Engineering  
**Re:** **Water and Energy Conservation Programs for Businesses and Residential Properties**

### Staff Recommendation

That, as presented in the staff report titled Water and Energy Conservation Programs for Businesses and Residential Properties dated May 27, 2015, from the Director, Engineering:

1. The implementation of a program to install efficient, low-flow water fixtures in businesses and institutions be endorsed;
2. The Chief Administrative Officer and General Manager, Engineering and Public Works be authorized to execute a funding agreement with FortisBC and other potential partners to implement the program; and
3. The City's existing water conservation kit offered to properties with a water meter be expanded to include all residential customers.

  
 John Irving, P.Eng. MPA  
 Director, Engineering  
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<b>REPORT CONCURRENCE</b>	
<b>CONCURRENCE OF GENERAL MANAGER</b> 	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 
<b>APPROVED BY CAO</b> 	

## Staff Report

### Origin

This report proposes programs that will install efficient water fixtures in businesses and residences, as part of City efforts to reduce energy, emissions, and water consumption in Richmond.

This report supports Council's 2014-2018 Term Goal #4 Leadership in Sustainability:

*Continue advancement of the City's sustainability framework and initiatives to improve the short and long term livability of our City, and that maintain Richmond's position as a leader in sustainable programs, practices and innovations.*

*4.2. Innovative projects and initiatives to advance sustainability.*

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

*Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

### Analysis

#### Background

##### *Richmond's Climate & Energy Action*

Richmond's 2041 OCP includes aggressive targets to reduce community GHG emissions 33 per cent by 2020 and 80 per cent by 2050, below 2007 levels. Additionally, the City has a target to reduce energy use 10 per cent by 2020. The 2014 Community Energy and Emissions Plan (CEEP) identifies that significant energy improvements to most existing buildings are necessary for Richmond to meet the City's targets. Accordingly, Strategy #3 in the CEEP is to "Improve the Performance of the Existing Building Stock," and includes the following actions:

- Action 7: Promote building efficiency through outreach and education
- Action 8: Provide incentives for building retrofit action
- Action 9: Develop a residential energy conservation program to support housing affordability

Additionally, as a signatory to the Climate Action Charter, the City has committed to being "carbon neutral" in its corporate operations. Carbon neutrality is achieved by reducing emissions, and balancing remaining emissions with carbon credits. The Joint Provincial-UBCM Green Communities Committee has established protocols for how local governments can generate carbon balancing credits by supporting energy projects in their communities.

### *Richmond's Action on Water Conservation*

The City is committed to water conservation in our community. Water conservation helps protect the environment, while deferring or eliminating the costs of water system upgrades to serve a growing community. To this end, the City has established a number of customer based water conservation programs, including:

- The Single-Family and Multi-Family Water Meter Programs. The City is on track to have single-family dwellings universally metered by 2018. Multi-family dwelling residents have the opportunity to volunteer for a water meter and pay for water based on what they use. Through these programs, participants can receive water saving devices at no cost to the participant.
- The Toilet Rebate Program.
- The Clothes Washer Rebate Program.
- The Rain Barrel Program.

Efforts that reduce hot water consumption (such as the Clothes Washer Rebate and the provision of low-flow showerheads and faucet aerators under the Water Meter Programs) have the added benefit of additional reductions of energy use and emissions.

### Proposed New Water and Energy Programs

A new program is proposed to provide water conserving fixtures free of charge to businesses and institutions. Additionally, it is proposed that the provision of water savings kits be expanded to serve any residential customer, instead of only those customers that have a water meter. The goals of these initiatives are to:

- Save businesses and households on energy and water costs.
- Evaluate businesses and institutions for deeper energy and water conservation opportunities, and connect them with additional programs that can further reduce energy and water consumption.
- Determine if “carbon balancing” credits can be generated via the programs, to count towards the City’s carbon neutral commitments, and subsequently develop these credits.

Further detail on the programs is provided below.

### *Business Water and Energy Saving Program*

This program will initially target businesses and institutions with commercial kitchen facilities. The program will provide direct installation of efficient pre-rinse spray-valves (used to clean dishes) as well as low-flow faucet aerators. Additionally, participants will be provided with an energy, water and waste Opportunities Assessment, to identify additional conservation opportunities. The program will subsequently communicate with participants, to connect them with further sustainability opportunities, such as FortisBC’s “Efficiency A la Carte” service for restaurants, BC Hydro incentive programs, and others. Communications of retrofit options will be uniquely tailored based on each business or institution’s Opportunities Assessment. The program will initially target 100 participants.

Experience from past implementations of such programs suggest that the efficient pre-rinse spray-valves and faucet aerators:

- Reduce average water consumption per participant by over 500,000 liters per year.
- Save a restaurant \$200 to \$600 in annual water and energy costs.
- Reduce annual GHG emissions 1 to 4 tonnes per participant.

Providing a spray-valve, faucet aerator, and Opportunities Assessment to a business will cost \$290. Staff are currently working with FortisBC, who may co-fund the program. Should partnership with FortisBC be confirmed, it is anticipated that the terms of the agreement will include:

- The City will be responsible for administering the program.
- The City will share data on participants with FortisBC, for the purposes of FortisBC providing further promotions to customers of their energy programs.
- FortisBC will provide 50 per cent of the program's cost for purchase of spray valves, installer contracting, marketing materials, program evaluation and administration, to be applied only to customers that use natural gas for hot water heating (likely the majority of participating businesses).

#### *Expanded Water and Energy Savings Kit Program*

Water savings kits are currently available at no charge to households and multifamily properties participating in the City's Water Meter Programs. It is proposed that the offer of water savings kits be expanded to all households in Richmond. Reducing water consumption in properties not currently water metered will benefit the City by reducing overall demand for water, while reducing energy use and greenhouse gas emissions.

#### **Financial Impact**

The business and institution program is budgeted for \$40,000. City funding for the program will be split between the Toilet Rebate Account, and the existing neighbourhood energy retrofits programs initiative within the Sustainability operating budget. The expansion of the water savings kits to all residential customers will be accommodated as part of the existing water savings kit program, funded through the Toilet Rebate Account. FortisBC may provide funding covering approximately 50 per cent of the business and institution program's cost, reducing City spending.

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## Conclusion

This report proposes a business water and energy saving program, and an expansion to the City's pre-existing water savings kits program to all residential customers. These programs will help the City pursue its climate, energy, and water conservation goals.



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