



**City of Richmond**

**Report to Committee**

**To:** Public Works and Transportation Committee      **Date:** Oct 1, 2009  
**From:** John Irving, P.Eng. MPA      **File:** 10-6650-02/2009-Vol 01  
Director, Engineering  
**Re:** **Richmond Multi-Family Water Meter Program Work Group**

**Staff Recommendation**

That:

1. staff bring forward a toilet rebate program that provides a \$50 credit per toilet with a maximum of \$100 (or two toilets) per household for replacing a 13 litre per flush toilet with a 6 litre (or lower) per flush toilet, and that the program is funded from the water utility to a maximum of \$100,000 per year,
2. the existing voluntary metering program be continued for single-family homes and that the funding available to multi-family properties for voluntary metering be formally increased in the Waterworks and Water Rates Bylaw to the greater of \$60,000 per strata or \$500 per unit, and that \$2 million funding is made available for multi-family metering annually,
3. and that staff develop;
  - a) an information brochure specifically on multi-family water metering,
  - b) program specific communication and education strategies in support of recommendations 1 and 2,
  - c) and implement a presentation and information team that would be available to present in person to strata councils or other interested citizen groups.

John Irving, P.Eng. MPA, Director, Engineering  
(604-276-4140)

Att. 1

FOR ORIGINATING DEPARTMENT USE ONLY					
<b>ROUTED TO:</b>		<b>CONCURRENCE</b>		<b>CONCURRENCE OF GENERAL MANAGER</b>	
Budgets .....		Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>		
Water Services .....		Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>		
<b>REVIEWED BY TAG</b>		YES	NO	<b>REVIEWED BY CAO</b>	
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## Staff Report

### Origin

At the Regular Council Meeting of May 25, 2009, Council adopted the following motion:

*" That*

*(1) Council form a Task Force comprised of 5 citizens representing different ownership and build models of townhouse and apartment water users and 2 Council members, along with staff support, to examine problems experienced by townhouse and apartment properties in taking advantage of the City's water metering programme;*

*(2) the Task Force bring forward recommendations to Council through the Public Works and Transportation Committee by the end of September 2009 on how these types of properties might take advantage of the programme or if metering is not feasible or practical, how to re-structure the water and sewer utility charges to make the rates charged to these types of properties as equitable as possible with other types of metered residential properties in Richmond; and*

*(3) Councillors Linda Barnes and Greg Halsey-Brandt be appointed as the two Council liaisons to the Richmond Multi-Family Water Meter Program Volunteer Work Group. "*

Furthermore, at the Public Works and Transportation Committee meeting on Sept. 23, 2009, the following referral motion was carried:

*"That staff refer the report, dated September 9, 2009 entitled "Richmond Multi-Family Water Meter Program Work Group" back to the work group for clarification by the work group on three discount proposals outlined in the staff report."*

This report summarizes the discussions and recommendations from the Multi-Family Water Meter Volunteer Work Group (Work Group) and responds to the referral motions. A memo from the Work Group Chair summarizing the groups work is attached.

### Analysis

The Work Group identified four policy options of interest as follows:

1. Toilet rebate program
2. Universal multi-family water metering program
3. Singles and seniors discount programs
4. Communication and education programs

The option to meter individual multi-family units was discussed at length but proved to be cost prohibitive at this time for both retrofitting existing buildings and installation on new construction. Some opportunity to individually meter new and existing Townhouses may exist where the layout and design is favourable. Staff will continue to monitor developments in metering technology and identify any opportunities to move forward in this area.

### Toilet Rebate Program

The revised B.C. Water Conservation (Plumbing) Regulation, which took effect in 2005, requires that all new toilets installed in Metro Vancouver and most urban areas in BC must be 6-litre, low-consumption models. Most toilets installed prior to 2005 are 13-litre models. 13-litre toilets account for up to 30% of household water usage. Switching to 6-litre toilets or dual flush toilets can reduce this usage by half, creating a net reduction in household water usage of up to 15%. Based on an average of 5 flushes per person, a 2 person household could save more than 70 litres of water a day, or 25,550 litres per year. Based on current metered water rates in Richmond, this would save \$20 per year for a metered property.

The purchase price of a new toilet will depend on the model, but is generally in the \$150 to \$300 range. At these prices a \$50 rebate can represent up to a 30% savings on the toilet purchase. Toilet rebate programs that are currently active within the Metro Vancouver area are as follows:

<b>Municipality</b>	<b>Toilet Rebate available</b>	<b>Rebate Value</b>
Vancouver	under review	-
Surrey	under review	-
Burnaby	no	-
Township of Langley	no	-
West Vancouver	yes	\$50
District of North Vancouver	yes	\$50
City of North Vancouver	yes	\$50
Delta	no	-
City of Coquitlam	yes	\$100
City of Port Coquitlam	yes	\$100

Some of the key features of these rebate programs, for those municipalities that have them, are as follows:

- Usually based on each toilet replaced with a limit per household
- Rebate may be cash or credit on their utility bill
- Are only applicable for replacing an existing 13-litre toilet
- Some restrict the program to non-metered customers or to homes built prior to a set date
- Required proof of purchase/installation/removal of old toilet (photos may be required)

The federal government through Natural Resources Canada is also offering a \$65 toilet rebate until March 31, 2011. This program requires that the owner hire a certified energy advisor to perform an energy and post-retrofit evaluation of the home and is therefore only attractive to owners doing larger renovation projects.

A toilet rebate program could be developed for Richmond that provides a \$50 credit per toilet with a maximum of \$100 (or two toilets) per household. The credit could be applied to the utility bill only and would be eligible for all residential homes. The new toilets must be the ultra low flow toilets of 6 litres per flush (or lower, i.e. dual flush) and proof of purchase/installation/removal of the old toilet must be provided at the time of the application for the rebate.

Based on rebate program usage in other member municipalities, the average annual cost for a Richmond program is estimated at approximately \$100,000 (representing 1,000 homes per year if 2 toilets are replaced per home). \$100,000 could be budgeted for in each year, and once the \$100,000 is expended the program would remain idle until the next year when the new budget is available. The program will be reviewed annually with recommendations brought forward to Council with the annual utility rates bylaw amendments. Staff anticipate that the administrative costs for the Toilet Rebate Program can be absorbed into the existing programs and would not require additional funding.

The \$100,000 per year ongoing program cost would be funded from the existing \$2M water meter budget within the water utility. There would be no impact to water or sewer rates on this basis. It is estimated that with the replacement of 2,000 toilets at a cost to the City of \$100,000, the City would save \$10,000 per year on the Metro Vancouver water purchase that is charged to the City.

#### Recommendation

Staff support the following Work Group recommendation:

*That Council adopt a toilet rebate program that provides a \$50 credit per toilet with a maximum of \$100 (or two toilets) per household, and that the program is funded from the water utility to a maximum of \$100,000 per year.*

#### Universal Multi-Family Water Meter Program

The City of West Vancouver is the only municipality in Metro Vancouver that has a universal metering program for multi-family properties. Their program utilizes master meters at the property line of each parcel or if feasible, within the mechanical room of each building.

The City currently has universal metering for all commercial and industrial uses and single-family homes are 45% metered through the existing voluntary meter program. The existing voluntary program is also available to multi-family properties, however there have been no volunteers metered in this category to date. A universal metering program would make mandatory the metering of the remaining non-metered single-family homes and all multi-family properties.

Metering of multi-family properties would generally require the use of master meters at the property line as most of the buildings are older and do not have sufficient space in the mechanical room. The estimated average number of municipal connections per multi-family property is 2.5 with an average cost of \$60,000 per meter installation. With 911 multi-family parcels in the City,

the estimated program cost for a universal multi-family metering program would be approximately \$137 Million. The options would be to phase the program over set periods as shown below. There would be a continued perceived disconnect between the single family and multi-family programs unless the single family program was converted to a universal metering program as well (at a cost of approximately \$13M to meter the remaining single-family homes). The table below shows costs of universal metering over various program periods in today's dollars:

Program Duration	Average Annual Expenditure		
	Multi-Family	Single-Family	Total
1 year	\$137M	\$13M	\$150M
10 years	\$13.7M	\$1.3M	\$15M
15 years	\$9.1M	\$0.9M	\$10M
20 years	\$6.9M	\$0.7M	\$7.6M

Even with implementation spread over 20 years, the cost to universally meter multi-family would be \$6.9M per year, which would be funded by a 21% increase to all current water utility rates. The key benefits of universal metering (equity and conservation) are substantial, however based on the foregoing financial information it is staff's opinion that this level of expenditure is not supportable.

Given that universal metering is not financially feasible at this time, it is recommended that focus be placed on making the voluntary metering program as equally accessible as possible for all single-family and multi-family customers. Under the existing voluntary metering program, the City funds the total cost of meter installation on single-family homes, while under the current Waterworks and Water Rates Bylaw No. 5637, a multi-family strata that requests a meter is responsible for the connection and water meter charge.

Based on existing known costs of metering single-family homes, equitable funding for multi-family metering could be achieved if the City funded multi-family master metering to the greater of \$60,000 per strata or \$500 per unit (for review and adjustment annually).

A new program would be developed for the Voluntary Multi-Family Water Meter Program with a recommended \$2.0M annual budget. In addition, staff will be responsible for meeting with and providing a cost estimate to potential multi-family volunteers. Staff anticipate that the administrative costs for the Volunteer Multi-Family Water Metering Program would be funded from the proposed \$2.0M budget and the program would require one additional full-time staff member to administer.

Recommendation

Staff support the following Work Group recommendation:

*That the existing voluntary metering program be continued for single-family homes and that the funding available to multi-family properties for voluntary metering be formally increased in the Waterworks and Water Rates Bylaw to the greater of \$60,000 per strata or \$500 per unit, and that \$2 million funding is made available for multi-family metering annually.*

Singles/Seniors Discount Program

The Work Group identified 3 specific discount program options: singles, seniors, and single seniors. The base assumptions for all three programs are as follows:

- For multi-family only (single-family has the option to meter)
- For flat rate customers only
- Must be owner and occupier to be eligible.

*Single Occupant Discount*

The City introduced single occupant water and sewer rates prior to 1988. As rates were revised over the years to create equity between specific categories (single-family dwellings, townhouses, and apartments), the single occupant rate became higher than the apartment rate, therefore the single occupant rate for apartments was eliminated in 2003. Council eliminated the remaining single occupant rate for single-family dwellings and townhouses effective January 1, 2007. At the time, the actual discount available to single occupants in townhouses and single family dwellings was approximately \$20.

The single rate program allowed the owner of the property to apply for a discount and continue receiving this discount until ownership changes or notice is provided to the City of occupancy changes. Over the years, some property owners advised the City of occupancy changes, but more often than not, other taxpayers were calling the City and complaining of neighbours paying a single rate when there was more than one person living in the home. This system was subject to exploitation and misrepresentation because the City does not have the authority or resources to monitor occupancy.

Currently, it is estimated that there are over 7,500 single occupants living in strata units. If a \$20 Single Rate discount is re-introduced to strata units only, the cost of the discounts and administrative costs would exceed \$200,000. This cost would be recovered through higher utility rates to all others. Administratively, there is no means of auditing or monitoring single occupancy therefore the system is at risk of abuse. A summary of the pros and cons for the Single Discount Program are as follows:

Pro	Con
<ul style="list-style-type: none"> <li>• Recognizes that single occupants use less services</li> <li>• Benefits single occupants</li> </ul>	<ul style="list-style-type: none"> <li>• Program open to abuse</li> <li>• Requires additional administration to maintain accurate billing information</li> <li>• Inequity in billing because discount is tied to historical applications</li> <li>• A minimum cost of \$200,000 from discounts taken</li> <li>• increase to utility rates in order to compensate for the cost of discounts.</li> </ul>

*Seniors Discount*

Currently the City of New Westminster offers a discount to seniors on their utility bills. Similar to the Home Owner Grant program, the owners must reside in their own home, be 65 years of age or older and must submit an annual application to the City declaring their age and occupancy. Once the application form is received, the clerk manually processes the discount into their tax system. New Westminster currently has approximately 5,000 taxable residential properties and approximately 150 seniors qualify for the discount.

In comparison, the City of Richmond have almost 62,000 residential properties and of those, approximately 36,000 are strata units that are on flat rate. Historically, 80% of Richmond's residential properties are owner occupied and 25% are occupied by seniors. Using the simple calculation of (80% x 36,000) x 25%, it can be estimated that approximately 7,200 strata units are occupied by seniors.

Seniors discounts would require additional administrative costs to assist telephone enquiries and to manually process the discounts on an annual basis. To control administrative costs, the discount must be credited to the utility account and cannot be refunded to the customer. The estimated additional administrative cost required for a senior discount program is \$50,000 annually. All program costs would be funded by other utility users as increases to the utility rates. The costs of a seniors discount program at 5, 10 and 20% discount levels are as follows:

Discount on Water and Sewer charges	Value of discount to Senior apartment owner	Total annual cost of discounts (Aptmt's and TH's)	Admin. cost	Required % increase to all other user rates to fund program	% of total program cost that is Admin cost
5%	\$25	\$209,000	\$50,000	0.5%	24%
10%	\$50	\$418,000	\$50,000	0.9%	12%
20%	\$100	\$835,000	\$50,000	1.8%	6%

As is made clear in this table, the challenge with a senior's discount program is making it simultaneously efficient and affordable. At a 5% discount level, the cost increase to other users is low at 0.5%, but 25 cents of every dollar in the program goes to administration. At the 20% discount level, the administration costs become reasonable but the increased cost to other users is then 1.8%. Holistically, a Seniors Discount program does not support user pay objectives and will create other cost inequities within the City. The pros and cons of a seniors discount program are summarized as follows:

Pro	Con
<ul style="list-style-type: none"> <li>• Provide financial assistance to seniors</li> </ul>	<ul style="list-style-type: none"> <li>• Does not support the user pay objective or equity since not all seniors are single occupants and therefore may consume more services than single occupants</li> <li>• Similar to the Home Owner Grants applications, this option will require annual application for senior discount</li> <li>• Program adds administrative costs to the City</li> <li>• Additional staff time required to process senior discount application forms</li> <li>• Cost of discounts would be subsidized by other utility customers</li> </ul>

*Single Seniors Discount*

A hybrid discount program providing assistance to single seniors residing in multi-family complexes that are on flat rate will provide assistance to a much smaller category of taxpayers. It is estimated that there are approximately 1,500 taxpayers who meet this criteria.

Assuming a 10% discount based on the same assumptions as in the Seniors Discount option, the approximate total annual value of single senior discounts would be \$86,000.

Administratively, this program would be similar to the Senior Discount program in that the owner occupant must apply for the discount annually and staff must process each discount manually as the applications are received. In order to provide a program that is convenient for seniors, the application form must be sent out with all mailings. Since the program is not offered to the general population, additional costs will be incurred to provide application forms to only the targeted group. Additional staff time will also be required to field complaints from other users omitted from the program. Historically, complaints regarding new programs or discount changes continue for a number of years. Annual administrative costs will remain unchanged for this option at \$50,000. The estimated total annual cost for this program would be \$136,000.

Incurring \$50,000 of administrative costs to deliver \$86,000 of discounts is not an efficient use of utility funds, however Work Group members in favour of the discount felt the benefit to single seniors sufficiently warranted the cost. This program also introduces the same challenges as the singles discount as the City does not have the authority or resources to monitor single occupancy. The pros and cons of a single seniors discount program are summarized as follows:



Pro	Con
<ul style="list-style-type: none"> <li>• Provides financial assistance to single seniors</li> <li>• Provides some support to the user pay objective since it offers discounts to only single seniors, who as a group are more likely to be consuming less water.</li> </ul>	<ul style="list-style-type: none"> <li>• Creates inequity since other single owner occupants cannot qualify</li> <li>• Similar to the Home Owner Grant applications, this option will require annual application for a single senior discount</li> <li>• Program adds administrative costs to the City</li> <li>• Additional staff time required to process single senior discount application forms</li> <li>• Cost of discounts and administration would be subsidized by other utility customers</li> <li>• Program is not an efficient use of utility funds</li> </ul>

Conclusion on Singles, Seniors and Single Seniors Discount Programs

There was no majority support from the Work Group on any of the three discount programs, however of the three, there was greatest support (50%) for the single seniors discount program. The exact counts on individual Work Group member preferences for the 3 programs are as follows:

	Support	Do Not Support
10% Singles Discount	1	5
10% Seniors Discount	0	6
10% Single Seniors Discount	3	3

Communication and Education Program

The City’s current communication and education programs on the water utility and water metering program include:

- Advertisements in the local papers (both on the City Page as well as through Neptune)
- Information on the City’s website

- Information brochures at City Hall and information sheets that are included with utility bills
- Project WET, a program that the City in partnership with the Richmond School Board created with interactive learning on water issues targeted at grades 4 to 7
- Annual events such as the Public Works & Engineering Open House and the Capital Program Open House
- A dedicated website established by Neptune (the contractor for the Volunteer Water Meter Program Contract) with information on single family residential and duplex water metering and water conservation
- An education component through the Volunteer Water Meter Program Contract where open houses are held annually in the local malls and at City Hall to provide information to the public
- Door to door canvassers that provide information to residents as part of the Volunteer Water Meter Program Contract
- Through the BC Sustainable Energy Association Climate Change Showdown education program where the elementary school students are taught the benefits of water conservation and are provided information on the Richmond Volunteer Water Meter Program.
- City staff who are available during regular hours to answer questions and provide information via telephone, e-mail, and in person at City Hall.

Recommendation

The Work Group identified three specific tasks to further support specific public communication and education on multi-family water metering:

1. *Develop an information brochure specifically on multi-family water metering.*
2. *Develop program specific communication and education strategies in support of the Volunteer Water Group's policy recommendations that are adopted by Council (ie. as part of the Volunteer Multi-Family Water Meter Program and the Toilet Rebate Program).*
3. *Develop and implement a presentation and information team that would be available to present in person to strata councils or other interested citizen groups.*

Staff recommend that these programs be adopted. Item 1 can be completed and implemented with existing staff resources and budget, and Items 2 and 3 would be included within the specific program budget.

## Financial Impact

Staff anticipates the program costs as follows:

Program	Program Cost	Admin. Cost	Total Budget	Funding Source
Toilet Rebate Program	\$100,000	-	\$100,000	Water Utility – Existing meter budget
Multi-Family Water Meter Program	\$1,900,000	\$100,000	\$2,000,000	Water Utility – Capital and Provision funds

Administration of the Multi-Family Water Meter Program would require one additional full-time staff member. The communication and education programs would be incorporated as part of the specific program costs. Dedicated funding for the multi-family water meter program would be through existing capital or provisional funds, and would not impact water rates for 2010.

## Conclusion

Staff support the Multi-Family Water Meter Volunteer Work Group recommendations as follows:

*That Council adopt a toilet rebate program that provides a \$50 credit per toilet with a maximum of \$100 (or two toilets) per household, and that the program is funded from the water utility to a maximum of \$100,000 per year.*

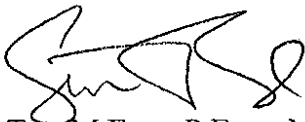
*That the existing voluntary metering program be continued for single-family homes and that the funding available to multi-family properties for voluntary metering be formally increased in the Waterworks and Water Rates Bylaw to the greater of \$60,000 per strata or \$500 per unit, and that \$2 million funding is made available for multi-family metering annually.*

*Develop an information brochure specifically on multi-family water metering.*

*Develop program specific communication and education strategies in support of the Volunteer Water Group's policy recommendations that are adopted by Council (ie. as part of the Volunteer Multi-Family Water Meter Program and the Toilet Rebate Program).*

*Develop and implement a presentation and information team that would be available to present in person to strata councils or other interested citizen groups.*

There was no majority support from the Work Group on any of the three discount programs (singles, seniors, and single seniors), however of the three, there was greatest support (50%) for the single seniors discount program.



Siu Tse, M.Eng., P.Eng., Manager, Engineering Planning  
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ST:st



City of Richmond  
Engineering & Public Works

Memorandum

To: Mayor & Councillors Date: September 14, 2009  
 From: Frank Schmidt File: 10-6650-02/2009-Vol 01  
 Chair, Multi-Family Water Meter Volunteer  
 Work Group  
 Re: Multi-Family Water Meter Volunteer Work Group Recommendations

The Work Group held 5 meetings between June 8 and September 9, 2009. The meetings included verbal and written presentations from City staff on the water and sanitary utilities, a presentation on strata law by Patrick Williams of Wilson Clark LLP, and a presentation on multi-family metering practices by Mike Middlemass of Neptune Technology Group.

After considerable investigation and discussion the Work Group identified four policy options of interest as follows:

1. Toilet rebate program
2. Universal multi-family water metering program
3. Singles and seniors discount programs
4. Communication and education programs

Staff provided detailed analysis on the policy options and the Work Group adopted recommendations for Council's consideration as follows:

*That Council adopt a toilet rebate program that provides a \$50 credit per toilet with a maximum of \$100 (or two toilets) per household, and that the program is funded from the water utility to a maximum of \$100,000 per year.*

*That the existing voluntary metering program be continued for single-family homes and that the funding available to multi-family properties for voluntary metering be formally increased in the Waterworks and Water Rates Bylaw to the greater of \$60,000 per strata or \$500 per unit, and that \$2 million funding is made available for multi-family metering annually.*

*That:*

1. *staff develop an information brochure specifically on multi-family water metering.*
2. *staff develop program specific communication and education strategies in support of the Volunteer Water Group's policy recommendations that are adopted by Council.*
3. *staff Develop and implement a presentation and information team that would be available to present in person to strata councils or other interested citizen groups.*

September 14, 2009



Frank Schmidt  
Chair, Multi-Family Water Meter Volun

cc: Mult-Family Water Meter Volur  
John Irving, Director of Engineer