



To: Public Works and Transportation Committee **Date:** April 30, 2009
From: John Irving, P.Eng. MPA **File:** 10-6060-02-01/2009-Vol
Director, Engineering 01
Re: Richmond Long Range Drinking Water Management Plan: Water Meter
Program Update 2009

Staff Recommendation

That staff develop the terms of the 2010 – 2013 Volunteer Water Meter Program considering feedback from a Richmond Multi-Family Water Meter Program Volunteer Work Group and report back to Council prior to the establishment of the 2010 Utility rates.

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

FOR ORIGINATING DEPARTMENT USE ONLY		
CONCURRENCE OF GENERAL MANAGER 		
REVIEWED BY TAG	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
REVIEWED BY CAO	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>

Staff Report

Origin

On December 8, 2003, City Council adopted Bylaw 7620, amending the City's Waterworks and Water Rates Bylaw. The amendment includes provisions that allow the City to bill residential water customers based on a metered rate and is in alignment with the City's long-term water management strategy. City Council also endorsed extending the Volunteer Water Meter Program to multi-family units on October 23, 2006 for the 2007 budget. As committed by staff, the purpose of this report is to serve as the annual update to Council on the progress of the water metering program.

Findings of Fact

Through the reduction in leaks and better conservation practices, Richmond residents realized a 6% reduction in per capita consumption in 2008 with over 2,370,000 m³ of water conserved. Through our Water Meter Programs, the average per capita daily consumption of water is steadily decreasing in Richmond. By reducing per capita water consumption, infrastructure upgrades regionally and within Richmond can be deferred which assists in keeping the water utility rates down.

Volunteer Water Meter Program – Single Family and Duplex Residences

The City is in the last year of the three year term of the voluntary water metering program of single family and duplex residential units. Since its launch in February 23, 2004, a total of 12,891 homes (7,483 volunteer and 5,408 mandatory) received meters as of December 31, 2008, which represents 25.6% of the total single family and duplex homes in Richmond.

The City still provides conservation devices and a water system audit used to identify opportunities to reduce water consumption in the home to volunteers who request them. The City is working with its contractor Neptune Technologies to expand the marketing campaign for 2009 to aggressively promote the program and encourage more conversions to water metering by raising awareness of the benefits of water metering through a series of public education initiatives. To date we have held two public education sessions at City Hall on February 5, 2009 and February 10, 2009, two sessions at Aberdeen Mall on March 6 and 7, 2009, one session for the Capital Program Open House at City Hall on April 2, 2009, and one session at Richmond Centre Mall on April 22, 2009. The program has also been promoted through the elementary schools via participation in the BCSEA Program with four classroom visits on March 8 and 11, 2009. Neptune is also planning on a session at the Engineering & Public Works Open House on May 23, 2009. Neptune regularly advertises in news media and on websites, and through bill inserts and informational brochures. The increasing cost of water from the Metro Vancouver (MV) resulting in higher flat utility rates over the metered rate is also a notable incentive as metering is a user pay system. On July 10, 2008, MV staff brought forward a report to their Finance Committee titled Financial Projections for 2009 to 2013 that estimated the water costs to increase by an average of 6.7% annually in the next five years.

The following table summarizes the results of the last five years of the program. The 2009 projected number of volunteers is 1,000.

Year	Number of volunteers	Conservation devices installed	Leaks detected	Volunteers that saved money over flat rate
2004	2,408	1267	100	89%
2005	1,490	981	140	80%
2006	1,674	699	73	85%
2007	1,090	342	82	84%
2008	821	164	258	88%
Total	7,483	3,453	653	

Volunteer Water Meter Program – Multi-Family Complexes

This is also the third and last year for the multi-family townhouse and apartment complex volunteer program. In 2007 and 2008, we received approximately 10 inquiries for the multi-family water meter program however, there have been no strata complexes that have volunteered.

For this program, a water meter vault is installed just inside the property line or a meter within the mechanical room of a multi-family complex. These meters are typically larger than the single family residential ones and require additional plumbing components. The City has not installed any meters or vaults since this program began because volunteers have not fully resolved issues within their strata council to meet the City's criteria, which include consensus among strata members for moving to a metered system, registration of a Statutory Right-of-Way for the meter vault, and acceptance of default billing to a single assigned unit. The City continues to work with these groups to help them reach a viable resolution that best fit their needs.

At the April 22, 2009 Public Works & Transportation Committee meeting, the *Multi Family Rates for Water and Sewer Services* report was brought forward for discussion. This report was referred back to staff. Consistent with the referral, staff are recommending that a work group comprised of three Richmond multi-family residents, two stakeholders and two Council members to be called the Richmond Multi-Family Water Meter Program Volunteer Work Group be created. This work group will:

- identify options for establishing and expanding the multi-family water meter program considering techniques such as;
 - a rebate program for low flow toilets applicable to all types of houses in Richmond;
 - a City subsidized Multi-Family Water Meter Program;
 - a non-intrusive means to metering using remote meter reading;
 - a program whereby the City pays the initial cost of the meter and the property owner completes re-payment over a period of time, i.e., 10 years;

- establishing a Multi-Family Housing Water Conservation Manual that is made available on the City's web site; or
 - extending the City's one time leak audit to include Multi-Family Housing.
- hold public meetings (as required) to solicit further suggested suggestions regarding multi-family water metering;
 - evaluate public concerns and develop options and strategies to address the concerns; and
 - possibly present to Council the Work Group's final recommendations regarding multi-family water metering.

We anticipate the work group to conclude its study by August 31, 2009 and report out to the Public Works and Transportation Committee prior to establishment of 2010 Utility rates.

Mandatory Water Meter Program

All new construction of residential single family, duplex and multi-family (apartments and townhouses) homes, and water service renewal requests are currently required to have a water meter installed, as per Bylaw 5637. City initiated capital improvement works for water main upgrade and replacement also require existing serviced homes to be metered. The total number of mandatory meters installed in 2008 is 582. The total mandatory water meters installed up to December 31, 2008 is 5408 which represents 18.5% of the total single family and duplex homes in Richmond.

The Volunteer and Mandatory Water Meter Programs has received almost no complaints in 2008. The comments that we have had were generally for high consumption concerns. These complaints were largely resolved given the certainty allowed in the Bylaw that residents do not have to pay more than the flat rate amount in the first year.

Government Agency Initiatives on Water Metering

Our Water Meter Programs also support initiatives established at the various levels of government. Some of the initiatives are included below.

Living Water Smart: British Columbia's Water Plan (Province of British Columbia)

This is the province of British Columbia's vision and commitment to ensuring that our water stays healthy and secure. Living Water Smart is a comprehensive plan for sustainable management of all freshwater (surface and groundwater), protection of aquatic ecosystems and encouraging water smart behaviour and community development practices. The plan commits to new actions and targets and builds on existing work underway in the province to protect and keep our water safe. Some of the targets that our Water Programs support include:

- By 2020, water use in British Columbia will be 33 percent more efficient.
- By 2012, government will require all large water users to measure and report their water use.

Through our Water Meter Programs, we have reduced the per capita water consumption by almost 11% from the inception of the program to today which is well on it's way towards the 33% reduction. Furthermore, all of our large commercial and industrial water consumers are already metered and we are now moving on to meter others in the community to offer them the opportunity to assist in controlling their water consumption.

Draft Liquid Waste Management Plan (Metro Vancouver, March 2009)

The Metro Vancouver Draft Liquid Waste Management Plan (LWMP) requires commitment from the Lower Mainland municipalities to develop and implement water conservation plans to decrease liquid waste volumes by reducing indoor water use. Richmond's Water Meter Program has been instrumental in assisting the residential home owners in their conservation efforts.

Drinking Water Management Plan (Metro Vancouver, 2007)

The Drinking Water Management Plan (DWMP) provides direction and priority for drinking water initiatives in a sustainable region. The DWMP ensures that our regions water needs will be met sustainably and affordably over the next 25 years. The plan recommends that member municipalities assess the merits of developing residential water metering programs. Richmond is seen as a leader both in the Lower Mainland as well as in the water metering industry as we are one of a handful of member municipalities that have a comprehensive water meter program.

The Green Infrastructure Guide: Issues, Implementation Strategies and Success Stories (West Coast Environmental Law Research Foundation, 2007)

The Green Infrastructure Guide provides guidance on how local governments may, using legal and policy strategies, encourage or require more sustainable infrastructure designs. Water Metering is one of the Guide's strategies to charge the user according to the volume of water consumed rather than on a flat rate basis. The Guide also identifies metering as a tool for water suppliers and users to locate system anomalies such as extreme use, unauthorized connections, leaks and breaks which can then be rectified as a further conservation measure. Richmond's philosophy at the inception of the program was user pay and that water conservation would be realized as a benefit in the process.

InfraGuide: Innovations and Best Practices (NRC, CNRC, FCM, 2003)

This is a series of guidebooks that provide a framework for municipalities to implement recent best management practices. InfraGuide's best practice, Water Use and Loss in Water Distribution Systems, revealed that metering by the water utility is critical in accounting for water use and loss in the distribution system. Richmond's Water Meter Programs have identified 653 water leaks on single family and duplex residential properties and allowed homeowners to manage their water consumption.

Next Steps

This is the last year of Richmond's Volunteer Water Meter Program. The program, based on a user pay system, has been well received and used as a model by other communities. Should Council support the continuation of the Volunteer Water Meter Program, staff will bring forward

a report in the Fall of 2009 with recommendations on the Water Meter Programs including feedback from the Richmond Multi-Family Water Meter Program Volunteer Work Group. In addition, staff will be bringing forward a report on the findings and recommendations from the Richmond Multi-Family Water Meter Program Volunteer Work Group.

Financial Impact

None at this time.

Conclusion

The Volunteer Water Metering Program initiated in 2003 has been very successful in detecting leaks, providing cost control to residential consumers, advocating equitable cost allocation, conserving our limited resource and helping volunteers save money. With 44% of Richmond's single family and duplex homes metered through the Volunteer and Mandatory Water Meter Programs, there is still a substantial amount of homes un-metered. Continued commitment to and promotion of the voluntary, and maintaining the mandatory water meter programs will help the City reach its goals over a long term planning horizon without incurring substantive financial commitments.



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