



City of Richmond

Report to Committee

To: Public Works and Transportation Committee **Date:** April 23, 2021
From: Milton Chan, P.Eng.
 Director, Engineering **File:** 10-6060-02-01/2021-Vol 01
Re: **Multi-Family Water Meter Program and Water Conservation Initiatives Update**

Staff Recommendation

That staff bring forward options and recommendations for a mandatory Multi-Family Water Meter Program for consideration as part of the 2022 Utility Budgets and Rates report.

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 Director, Engineering
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REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance Department Water Services	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	 <hr/>
SENIOR STAFF REPORT REVIEW	INITIALS:	APPROVED BY CAO
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Staff Report

Origin

Water metering in the City has been successfully implemented for 100% of single-family residential, industrial, commercial, and institutional (ICI) properties. Water metering provides Richmond residents with an equitable way to pay for drinking water and supports the Official Community Plan objective to pursue water demand management strategies and continue water conservation initiatives.

This report supports the following strategies within Council's Strategic Plan 2018-2022:

Strategy #1 A Safe and Resilient City:

Enhance and protect the safety and well-being of Richmond.

1.2 Future-proof and maintain city infrastructure to keep the community safe.

1.3 Ensure Richmond is prepared for emergencies, both human-made and natural disasters.

Strategy #2 A Sustainable and Environmentally Conscious City:

Environmentally conscious decision-making that demonstrates leadership in implementing innovative, sustainable practices and supports the City's unique biodiversity and island ecology.

2.1 Continued leadership in addressing climate change and promoting circular economic principles.

2.2 Policies and practices support Richmond's sustainability goals.

This report provides an update on the City's water meter program, water conservation initiatives and recommendations for advancing the multi-family water meter program.

Analysis

Water Metering

The key benefits to water metering include equity, conservation, leak detection, improved information for analysis, and reduced load on the sanitary system.

The City currently meters 100% of ICI and single-family properties. Mandatory metering of new multi-family complexes began in 2005, and 316 complexes (16,930 dwelling units) have been metered under this program. Volunteer metering of existing multi-family complexes began in 2010, through which 148 complexes (9,234 dwelling units) have been metered. To date, 50% of multi-family dwellings have been metered through a combination of the volunteer program and mandatory program.

Universal deployment of the fixed base water meter reading network throughout the City was endorsed by Council through the 2017 Capital budget process. The fixed base network covers the entire urban area in Richmond and will ultimately read 97% of Richmond's water meter inventory. The network facilitates automated data collection, reduces costs and carbon emissions associated with reading water meters, allows staff to gather real-time consumption data, assists customers in identifying causes of leaks and water consumption habits, and enhances revenue forecasting to inform the utility budget process. The fixed base network has been deployed and is in the final stages of system optimization.

The population of Richmond has increased by 25% since metering started in 2003; however, total consumption in the City has decreased by approximately 12% (4,500,000 m³) over the same period. By reducing water consumption, the City achieved a cost reduction of over \$10M in Metro Vancouver water and sewer charges in 2020 alone. This is a strong indication that water metering efforts to date are having a positive impact on water conservation and minimizing the need for costly infrastructure upgrades by managing increases in demands.

Water Conservation Initiatives

To further promote reduced water use, the City provides metered customers with water conservation kits, which include low flow showerheads, faucet aerators, toilet fill cycle diverters, toilet leak detection tablets, and educational water conservation tools. In addition, the City has successful programs for toilet rebates, rain barrels, and clothes washer rebates. In 2020, 877 toilet rebates, 154 rain barrels, and 226 clothes washer rebates were provided to Richmond residents. These combined initiatives are estimated to save over 3,500,000 liters of water in 2021 alone.

Multi-Family Water Meter Program

The City subsidizes water meter installations for multi-family complexes by \$100,000 or \$1,200 per unit, whichever is greater.

In 2017, Council endorsed an advanced volunteer multi-family water meter program to encourage a higher rate of adoption. As a part of this advanced program, staff hosted presentations and information sessions to provide more engagement opportunities for residents. The advanced program also included a 5-year guarantee (increased from two years), which ensures that complexes will not pay more than the flat rate during that period. This allows residents time to fix any leaks in their system and adjust their consumption habits without the risk of incurring a higher utility bill.

As of January 2021, 50% of the multi-family dwellings have been metered, 97% of which saved money in 2020, averaging a 46% savings compared to the flat rate.

Table 1 is a tabulation of the multi-family residential inventory and their water metering status as of January 2021.

Table 1. Multi-Family Inventory

Type	Number of Complexes	Number of Units	Number of Complexes Metered	Number of Units Metered	% of Units Metered
Townhouse	618	17,978	282	6,496	36%
Apartment	305	34,466	182	19,668	57%
Total	923	52,444	464	26,164	50%

While the advanced volunteer program has been successful in providing residents with more information and incentives, the rate of adoption has remained low. An annual average of 2.6 multi-family complexes volunteered for meters since the advanced program started in 2017. At the current rate, it would take over 175 years to meter all multi-family dwellings.

Considering the significant benefits of water metering, it would be prudent to give further consideration to advancing the Multi-Family Water Meter Program towards universal metering. Staff recommend that options to implement a universal multi-family meter program be investigated and that a recommended implementation strategy be brought forward for consideration as a part of the 2022 Budgets and Rates report.

Financial Impact

None at this time. If Council endorses the recommendation, staff will bring forward options along with a recommended implementation strategy for Council consideration as a part of the 2022 Utility Budgets and Rates report.

Conclusion

The City of Richmond continues to be a leader in water conservation through the water meter program, fixed base meter readings, and water conservation initiatives. The ICI and single-family residential sectors are fully metered as well as 50% of the multi-family properties. While the remaining multi-family properties can participate in the volunteer water meter program, the adoption rate has been low. Staff recommend that options and recommendations for a mandatory Multi-Family Water Meter Program be brought forward for consideration as a part of the 2022 Budgets and Rates report.



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JH:cc