



REPORT TO COUNCIL

TO: Richmond City Council
FROM: Cllr. Howard, Chair
Public Works and Transportation Committee
DATE: December 23, 2004
FILE: 10-6650-02/2004-vol.
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RE: MULTI FAMILY RESIDENTIAL WATER METERING

The Public Works and Transportation Committee, at its meeting held on Wednesday, December 22, 2004, considered the attached report, and recommends as follows:

COMMITTEE RECOMMENDATION –

That:

- (1) *all new duplex residential properties be required to install water meters and be charged the metered rate for water and sanitary sewer;***
- (2) *all duplexes undergoing renovation in excess of \$75,000 be required to install water meters at the property owners cost and be put on the metered rate for water and sewer;***
- (3) *all existing duplex units, except those with interconnected potable water plumbing, become eligible for the Residential Volunteer Water Metering Program; and***
- (4) *all existing apartment and townhouse sites be allowed to have watermeters installed at the property owners cost.***
- (5) *staff provide additional comment on the metering of new townhouse and apartment complexes after:***
 - i) consultation has occurred with industry stakeholders, which would include the Urban Development Institute, the Greater Vancouver Homebuilders Association, and local developers; and***
 - ii) consultation has occurred with other communities to determine their specific water-metering histories and results.***

Cllr. Howard, Chair
Public Works and Transportation Committee

Attach.

Variance:

That:

- (1) all new multi family residential properties be required to install water meters and be charged the metered rate for water and sanitary sewer;**
- (2) all duplexes undergoing renovation in excess of \$75,000 be required to install water meters at the property owners cost and be put on the metered rate for water and sewer;**
- (3) all existing duplex units, except those with interconnected potable water plumbing, become eligible for the Residential Volunteer Water Metering Program; and**
- (4) all existing apartment and townhouse sites be allowed to have watermeters installed at the property owners cost.**

Staff Report

Origin

At the February 24, 2003 Council Meeting, City Council endorsed a voluntary water metering program for single family dwellings.

Both Council and the public have expressed interest in metering multi family dwellings for water. This report outlines issues involved in multi family water metering and recommends a potential approach to this issue.

Analysis

Multi family development comes in all shapes and sizes within the City of Richmond, each with it's own water metering challenges and requirements. For the purpose of establishing a water metering program for multi family developments, staff has divided these developments into three broad categories:

- Duplex
- Apartment
- Townhouse

The following explores some options for metering each of these groups of multi family dwellings:

Duplex

Duplexes are limited to two separate units and are the least dense form of multi family development.

It is desirable from the property owner perspective to meter each unit in a duplex separately. Staff recommends that all new duplex units be constructed to allow water metering of individual units at the property line they share with the City.

Some existing duplexes were constructed with one water connection servicing the entire duplex building. For these sites, individual metering from the property line would require installation of new water services as well as extensive plumbing modifications to the duplex. This approach is not considered practical by staff. Instead, Staff recommends that existing strata duplexes with only one water service have meters installed inside of the building in such a manner that each unit is metered for water independently and the meters are easily accessible.

Through the Volunteer Water Metering program, staff has received numerous requests for water meter installation from duplex owners. Given that duplex sites are similar in nature to single family dwellings, staff recommends that duplexes be treated similar to single family dwellings with respect to water metering. Staff recommends that:

- All new duplexes be required to install water meters at the property owner's expense.
- Duplexes that have their water services replaced through capital works have water meters installed at the property line at the City's expense, similar to the current practice for single family dwellings.
- Duplexes with interconnected potable water plumbing not be metered.
- Duplexes be added to the Volunteer Water Metering Program.

It should be noted that Richmond has a number of existing non strata duplexes. These properties receive one utility bill covering both units of the duplex. Staff recommends that non strata duplexes be treated the same as single family dwellings for the purpose of water metering. This means that only one meter will be used to measure water for both units of a non strata duplex.

Apartments

Apartments can have any number of units within one building. Staff recommends that apartment buildings be metered through one master meter for all units within an individual structure, with the metered water and sanitary sewer bill charged to the apartment strata corporation. The strata corporation can divide the bill as it sees fit. This practice is common in the water industry.

Staff recommends that all new apartment buildings be metered in a mechanical room inside of the apartment building. This will dramatically reduce the cost of meter installation, as no underground pit will be required and the meters used can be smaller (a typical underground meter installation for a large apartment building is estimated to cost \$40,000, while an indoor installation is estimated to be less than \$4,000).

Some existing apartment sites that have irrigation systems or fire hydrants connected to their water service that can not be metered from an indoor mechanical room will require the more expensive underground installation. These sites will be reviewed on an individual basis for meter location and cost.

Staff recommends that:

- Existing apartment buildings be permitted metered service if they wish to pay for water and sewer based upon metered usage.
- The cost of water meter installation be the property owner's responsibility.
- Existing apartment buildings not be required to meter at this time.
- All new apartment buildings be required to install water meters.

Townhouses

It is recommended that townhouse sites be metered for water with one master meter at the property line, with the metered water and sewer bill being charged to the complex strata corporation.

Townhouses are potentially the most difficult multi family configuration to meter for water due to high variability in size of development, on site amenities and private water system

configuration. Based on the City's Geographic Information System (GIS), the City has 286 townhouse sites that range in size from 3 units to 220 units. The smaller sites have only domestic water service while the larger sites will have domestic and fire service. Fire flows are generally two orders of magnitude higher than peak domestic flows, requiring larger pipes and larger water meters. Therefore, townhouse sites that have a fire flow requirement will be much more expensive to meter. For example, a 3 unit townhouse site without fire flow will cost approximately \$1,000 to meter for water. A 20 unit townhouse site with a fire hydrant on the site will cost up to \$40,000 to meter due to the meter's size, complexity and the size of underground chamber required.

Given the variability in townhouse sites, staff recommends that these sites be metered for water through master meters located at the site's property line with the City. Further, Staff recommends that:

- The cost of water meter installation be the property owner's responsibility.
- These installations be done at cost and that property owners be given the option to install the meter pit and associated piping (supply and installation of the actual meter would remain in the City's purview).
- All new townhouse sites be required to install a water meter.
- Existing townhouse sites not be required to meter at this time.
- Existing townhouse sites be permitted a metered service if they wish to pay for water and sewer based upon metered usage.

Waterworks Bylaw

The staff recommendations above will require an amendment to the Waterworks Bylaw as part of the implementation process. Should Council choose to proceed with multi family metering, staff will recommend amendments to the Waterworks Bylaw for Council's approval.

Financial Impact

Existing duplex owners who volunteer for water meter installation can be accommodated by the existing Volunteer Water Metering program.

Conclusion

Metered water billing is more equitable than the current flat rate system used for residential multi family sites. Duplexes and apartment buildings are relatively cost effective to meter for water, while townhouses are likely to require expensive installations. It is most cost effective to install water meters during the construction of a multi family dwelling site and staff recommends that all new multi family dwellings sites be required to install water meters. Duplexes are similar in nature to single family dwellings and staff recommends that duplexes be added to the scope of

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the current Volunteer Water Metering program. Staff recommends that existing apartment buildings and townhouses be metered on a volunteer basis at the property owner's cost.

A handwritten signature in black ink, appearing to read 'Lloyd Ble', is written above the typed name.

Lloyd Ble, P. Eng.
Project Engineer - Water and Sewer
(4385)