



**To:** Public Works and Transportation Committee    **Date:** February 7, 2005  
**From:** Robert Gonzalez, P.Eng.  
Director, Engineering    **File:** 10-6650-02/2005-Vol 01  
**Re:** **Richmond Long Range Drinking Water Management Plan:  
Volunteer Water Meter Program Update**

**Staff Recommendation**

That the Richmond Long Range Drinking Water Management Plan: Richmond Water Meter Program Update report from the Director of Engineering, dated February 7, 2005, be received for information.

Robert Gonzalez, P.Eng.  
Director, Engineering  
(4150)

<b>FOR ORIGINATING DIVISION USE ONLY</b>		
<b>CONCURRENCE OF GENERAL MANAGER</b>		
<b>REVIEWED BY TAG</b>	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
<b>REVIEWED BY CAO</b>	YES <input 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. The purpose of this report is to update Council on the progress of the water metering program.

### Findings Of Fact

#### Volunteer Water Meter Program

The Richmond Volunteer Water Metering program was launched on February 23, 2004. Over the past year, Neptune Technology has installed 2,442 water meters on a voluntary basis. This number is approximately 9% of the total number of single family residential water customers in the City. The current wait time for a water meter is short. Funding for 2004 was almost completely utilized.

1856 of the volunteer customers have received at least one metered utility invoice in 2004. 89% of these customers saved money on metered utility service when compared to the 2004 flat rate. A number of volunteers that did not save money in 2004 had problems with water leaks that have been fixed and staff expects the percentage of people saving money to increase in 2005.

The volunteer program has been well received by the public. A significant number of customers have provided positive testimonials concerning the metering program that Neptune Technology will use as part of their 2005 advertising campaign. The volunteer booklet has been revised to incorporate the testimonials and a copy of the draft booklet is attached to this report.

#### Mandatory Residential Water Meters

The City of Richmond has 2,394 mandatory residential metered water customers (customers who got their meters through development or watermain installation projects). For 2004, 67% of the mandatory customers are saving money on the metered utility rate as compared to the flat rate. On the other end of the spectrum, 7% of mandatory metered utility customers are paying over two times the flat rate.

A significant number of mandatory water meter customers were found to have large leaks that have since been repaired. The largest leak identified to date was in the order of 3,000 cubic meters per quarter, the equivalent of 29 average single family dwellings. Most of these leaks would have gone undetected without water meters, as they are on private property.

It is difficult to determine if the mandatory meter group is changing its usage habits since the metered rate for water and sewer was implemented. Water usage in this group is down dramatically for the fourth quarter of 2004, however, this is traditionally a lower water usage period. By the end of 2005 staff will be in a position to perform a meaningful analysis of changes in water use for this group.

**Financial Impact**

None at this time.

**Conclusion**

The first year of the water metering program has been successful. 4,836 single family dwellings are metered for water, representing 18% of the City's single family residential inventory. Most of the metered single family residential customers are saving money when compared to flat rate.



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

## THE VOLUNTEER WATER METER PROGRAM

# 89%

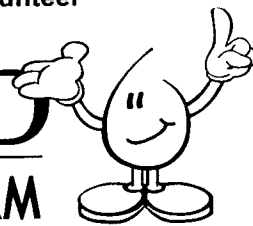
of the customers who volunteered for a water meter saved money on their water and sewer bills. You can too!

## Who Can Save Money With a Water Meter?



*"I volunteered for a meter because it would save me some money."*  
Patrick Rooney, Richmond Water Meter Volunteer

# RICHMOND WATER METER PROGRAM



*"Everyone keeps talking about the price of water going up. We don't use a lot of water so we decided to volunteer for a meter."*  
**Lawrence G., Water Meter Volunteer**

## METERED RATES VERSUS FLAT RATES

### **RESIDENTIAL FLAT RATES** As of January 2005

Estimated Average Yearly Water Consumption	Flat Rate Water 2004	Flat Rate Sewer 2004	Total Water & Sewer Bills
410 Cubic Metres*	\$328.02	\$197.69	\$525.71

\*1 Cubic Metre = 1000 Litres = 220 Gallons

### **RESIDENTIAL METERED RATES** As of January 2005

Water Charge Per Cubic Metre	Sewer Charge Per Cubic Metre	Minimum Quarterly Water Charge	Quarterly Water Meter Operating Fee
\$0.6577	\$0.4999	\$20.00	\$10.00

#### **WHAT IS THE MINIMUM QUARTERLY WATER CHARGE?**

This charge is oriented toward homes that are not occupied for considerable lengths of time but still benefit from the fire protection provided by the water system. If a metered customer uses less than \$20 worth of water in a quarter, that customer will pay the \$20 minimum charge. If a customer uses more than \$20 worth of water, that customer will pay for the actual amount of water used. Most households use more than \$20 worth of water in a 3 month period.

#### **WHAT IS THE QUARTERLY WATER METER OPERATING FEE?**

This covers meter reading, meter maintenance, billing and eventual meter replacement.

#### **SO WILL I SAVE MONEY ON THE METERED RATE?**

That all depends on your water consumption. If you use less water than an average Richmond household, you will save money on your water and sanitary sewer bills. If you use more water than the average Richmond household you will pay more.

#### **WHAT IS THE "FIRST YEAR GUARANTEE" & WHO MAY APPLY FOR IT?**

If your metered water and sewer bills for the first year of metered billing are higher than they would have been under the flat rate system, you may apply to the City for a credit for the difference. This guarantees that a metered customer does not have to pay more than a flat rate customer in the first year of metered billing. Customers must apply for the credit within the first 15 months of being on the metered rate.

The guarantee applies to the following customers:

- If you have volunteered for a meter
- if you receive a meter through the City infrastructure program

*"We're paying close to half of what we used to pay for water. We're happy with the meter and we'd recommend it."*

**Stephen and Lynn Ogilvy, Water Meter Volunteers**

*"We don't use a great deal of water. There is just the two of us and I thought we could save a bit of money along with the water."*  
Arthur Marshall, Water Meter Volunteer

## **WHO** COULD SAVE MONEY WITH A WATER METER

*The yearly flat rate for water and sewer is based on the average water consumption of a family of four. If there are three or fewer people living in your home, you will likely save money by volunteering for a water meter.*

### **SENIORS/EMPTY NESTERS**

The children have grown and it's just the two of you living in the house now. Or maybe you are retired and living on a fixed income. If you continue to pay the flat rate for water and sewer, you are paying for the volume of water consumed by a family of four.

### **YOUNG COUPLES**

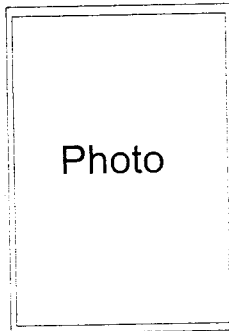
You probably both work and aren't home much during the day. You go out in the evenings and you're quite active on the weekends. Chances are you aren't using even half the water consumed by a family of four. So volunteer for a meter and save some money.

### **SMALL FAMILIES**

If there are just three of you living in the home, you would likely save money with a water meter. Even a family of four could save money if they practice a few simple water conservation tips and avoid excessive lawn watering.

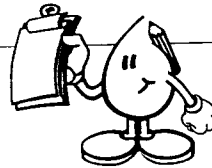
### **SINGLE OCCUPANTS**

Even though you pay a special rate, that rate is based on an estimated 350 cubic metres of water per year. You are likely consuming much less than that.



#### **They said it...**

*"There are only two of us here and we holiday quite often so our water use is lower than the average."*  
Ray Demchuck,  
Water Meter  
Volunteer



#### **The Results Are In!**

**In 2004, 89% of the people who volunteered for a water meter paid less on the metered rate than they would have paid on the flat rate.**

#### **You Have A Choice**

**You may continue to pay the flat rate for water and sewer, or you can choose to save money by volunteering for a water meter.**

*"We figured we weren't using a lot of water, and with the price of water going up we got the meter so we'd pay only for the water we use."*  
Robert Schwab, Water Meter Volunteer

# 5 REASONS TO CONSIDER A WATER METER

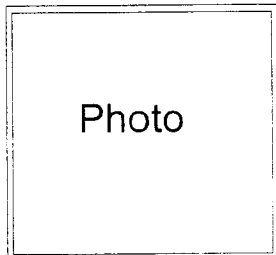
**1 THE COST OF WATER IS GOING UP**  
The City of Richmond buys its water from the Greater Vancouver Regional District. The City has no control over the price. The cost for water provided by the GVRD is expected to rise as much as 50% over the next five years. If you remain on a flat rate for water, you will have no choice but to pay these higher rates.

**2 A WATER METER GIVES YOU CONTROL**  
With a water meter you pay for the volume of water you use. When rates go up, you can keep your water and sewer bills lower by reducing your water use. If you are a low water user, under the flat rate system you are subsidizing the high water users.

**3 FREE WATER CONSERVATION DEVICES**  
After your water meter is installed, you can receive FREE water conservation devices. We will install a high-quality low-flow showerhead, faucet aerators, and a toilet water saving device at no charge.

**4 FAST "NO HASSLE" INSTALLATION**  
The water meter will be installed outside your house. You don't even have to be home for the installation. The meter reading device will also be located outside. A meter reader will never have to enter your home and your privacy will be ensured.

**5 FIRST YEAR GUARANTEE**  
You will have 12 full months to adjust your water consumption and get used to the metered water rate. If, after a year on the new rate, your total bills are more than they would have been under the flat rate for that same year, you will receive credit for the difference. This guarantees that you will not pay more if you have a water meter.



These are just a few reasons to consider volunteering for a water meter. Most of the 2,300 people who volunteered for a meter in 2004 did it to save money.

### **They said it...**

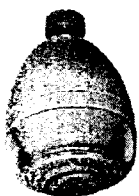
*"I hope to see a reduction in the cost of water because there is only two of us."*

John McBride, Water Meter Volunteer

*"Our water bill isn't as high as it used to be."*  
Hermann Eggers, Water Meter Volunteer

# FREE WATER CONSERVATION DEVICES

For Everyone Who Volunteers for a Water Meter



## LOW FLOW SHOWERHEAD

Fully Adjustable.  
Provides a Rigorous  
Shower Action.

Showering accounts for about 20% of all water used indoors. A high-quality low-flow showerhead can cut this by up to 50%, saving water, sewer and heating costs.

## WATER SAVING TOILET DEVICE

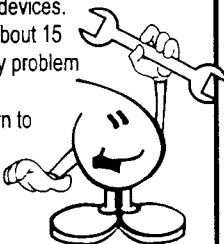
Photo  
of Pop Flush

Fully Adjustable  
to Provide a  
Powerful Flush  
With Less Water.

Anywhere from 25 - 50% of the water consumed inside your home is flushed down the toilet. This water saving toilet device can be adjusted to reduce the water your toilet uses to flush by up to 35%.

### A \$20 Value Plus Free Installation

After your meter is installed, we can return at a time that is convenient for you, and install the water saving devices. The installation takes about 15 minutes. If you have any problem within two years of the installation, we will return to repair or replace the product at no cost.



### They said it...

Here are a few more quotes from water meter volunteers.

*"I like the low-flow showerhead. I am saving money and feel better about doing my share to help the environment."*

*"I volunteered for a meter because I live by myself and I don't use very much water."*

*"I believe in promoting water conservation and I believe there should be some equity in water charges."*

*"I got a credit on the water bill. We're quite pleased about it."*

*"I'm a single old-age pensioner and I don't use much water. I was willing to pay for the water I used, but I didn't want to pay for those people who were abusing water."*

*"We know that water rates are based on a family of four. There are only two of us so we believed we were over paying for water."*

*"We saved over \$100. Volunteering for a meter was the right thing for us to do."*



*"We only have two people in the house so we thought the water meter would be a good idea."*

Sue Louie, Water Meter Volunteer

# YES I WANT TO VOLUNTEER FOR A WATER METER

Please read the explanation of the 2005 water rates and the Frequently Asked Questions section before applying for the water meter.

## It's a Simple Four-Step Process

### STEP 1



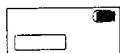
Call (604) 271-9700 to volunteer for a water meter. Or you may register online at [www.watermeter.ca](http://www.watermeter.ca)

### STEP 2



A Neptune representative will inspect your property to determine where the meter will be installed. You do not have to be present. The representative will leave an authorization form on your front door.

### STEP 3



Fill out the form and return it to Neptune in the postage-paid envelope supplied.

### STEP 4



Neptune will install the water meter. You do not have to be present.

### Where Does the Meter Go?

The meter will be installed near the City's shut-off valve which is located near your property line. A small hole will be dug to access your water service. We will then shut off the water for a short period in order to cut into your water service and install the meter.

Next, we will install a small chamber around the meter and fill in the hole, which will be covered (the meter must remain accessible for future maintenance). The area around the hole will be restored to the way it was prior to the installation.

## Information on Reading & Billing

Does it cost the Volunteer anything to have a meter installed?

No - the water utility pays for the meter and the cost of installation.

Will a Meter Reader have to enter my house to get a reading?

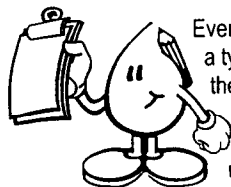
No - the meter will be installed and read outside your house.

How often will I receive a bill under the metered rate?

You will receive your water and sewer bills quarterly, with the first bill arriving within six months of your meter installation.

"Every litre wasted is a litre wasted. The little bit that I can do to conserve doesn't take much of my time. It's important for people to do what they can."  
**Eduard Hass, Water Meter Volunteer**

# SOME HELPFUL TIPS ON WATER CONSERVATION



Ever wonder where the water goes in a typical home? Most of it goes down the toilet. Surprisingly, very little of it is used for actual drinking. These statistics do not account for water used outdoors.

- 1) Toilets.....26%
- 2) Clothes Washers.....21%
- 3) Showers.....17%
- 4) Faucets.....16%
- 5) Leaks.....14%
- 6) Baths.....2%
- 7) Dishwashers.....2%
- 8) Other.....2%

\*Source: 1999 Study by the American Water Works Research Foundation

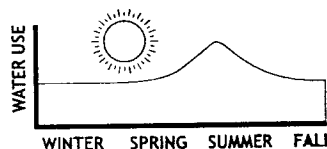


- DO** inspect your home for leaks.
- DO** install low-flow showerheads.
- DO** install a low-flow toilet.
- DO** install faucet aerators.
- DO** insulate hot water pipes.
- DO** take shorter showers.
- DO** get the whole family involved.



- DON'T** flush food or garbage down the toilet.
- DON'T** leave the tap running when brushing your teeth.
- DON'T** turn the tap on full blast when washing your hands.
- DON'T** rinse dishes before putting them in the dishwasher.
- DON'T** run your dishwasher until it is full.

## SEASONAL WATER USE



Water use goes up in summer, down in winter. Most Canadians water their lawns & gardens far more than is necessary. Over-watering can lead to excessive growth. Who wants to mow all that grass? Keep your grass at a height of 2 1/2". Taller grass shades new growth and reduces evaporation. Keep your mower blades sharp; dull blades tear the grass leaving it open to disease and heat stress.

## HOW TO CHECK YOUR TOILETS FOR LEAKS

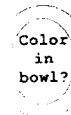
Carefully remove the toilet tank lid & drop food colouring into the water in the tank.



**WAIT.** Do not flush the toilet. Allow the dye to set for about 15 minutes.



If colour enters the bowl you have a leak. It may be caused by a worn flapper valve, which is easy to replace.



"We've saved money and we've saved water"

**Simon Shu Man Au**  
**Water Meter Volunteer**

"I'm conserving water and paying less."

**J. Maureen Beetsra**  
**Water Meter Volunteer**

# FREQUENTLY ASKED QUESTIONS

## What is Back Flow & Why Do I Need A Backflow Device?

Backflow is the flow of water from your house into the City's water system. There are several ways that this can happen, but the most common is a loss of pressure in the City system. Backflow is dangerous as it creates the potential for contaminants to enter the drinking water system. A backflow prevention device will be installed with your water meter to protect the City water system from backflow.

## What is Thermal Expansion?

Water in your hot water tank expands and creates pressure as it is heated. Normally this pressure is relieved back through your water pipes. With a backflow prevention device in place, there is the possibility that this pressure may not be relieved. If your water tank is set to the recommended 45 - 50 degrees Celsius (115 - 125 degrees Fahrenheit) you should not have a problem. However, we recommend that you have a thermal expansion tank installed after you have a water meter installed. Even if you choose not to have a water meter, it is still a good idea to have a thermal expansion tank installed.

## Will the flat rate increase for non-metered customers?

The City of Richmond can't predict the future, but it is anticipated that the cost for water supplied by the GVRD will increase by as much as 50% over the next five years. The water rate will increase accordingly. As low water users migrate to the metered rate, those customers who remain on the flat rate will be assumed to be high water users. The flat rate will likely increase at a faster rate than the metered rate in recognition of the changing demographic in the flat rate group.

## Will the metered rate increase in the future?

Yes. The metered rate will have to increase as the cost for water supplied by the GVRD increases.

## How do I know the meter and the reading is accurate?

Neptune meters are factory tested and exceed the standards for accuracy set by the American Water Works Association. The reading is transmitted electronically from a remote reading receptacle to a special reading device. If you believe there has been an error in your meter reading, the City will send Neptune Technology Group to read the meter again to confirm, and, if necessary, an adjustment will be made to your bill.

## I have lots more questions?

No problem, just call us at the number below or visit our web site. We'll be pleased to answer all your questions.

**CALL (604) 271-9700 or visit us at [www.watermeter.ca](http://www.watermeter.ca)**