



City of Richmond

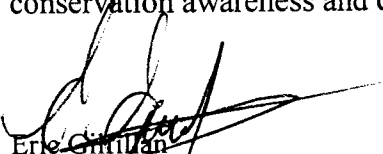
Report to Committee

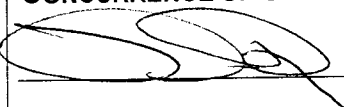

To: Public Works & Transportation Committee
From: Eric Gilfillan
Director of Operations
Re: Rainwater Barrel Program

To Public Works & Transportation
Date: July 21, 2004 - Aug 25, 2005
File: 10-6650-01

Staff Recommendation

That a subsidized rainwater barrel distribution program be initiated by the City to increase water conservation awareness and complement the residential metering program.


Eric Gilfillan
Director of Operations

FOR ORIGINATING DIVISION USE ONLY			
ROUTED TO:	CONCURRENCE		CONCURRENCE OF GENERAL MANAGER
Emergency and Environmental Programs	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Budgets	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
Engineering	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		
REVIEWED BY TAG	YES <input type="checkbox"/>	NO <input type="checkbox"/>	REVIEWED BY CAO YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> 

Staff Report

Origin

At the Public Works & Transportation Committee meeting dated May 19, 2004 the following direction was given. That staff examine the possibility of allowing Richmond residents to purchase rainwater barrels, and report to Committee on the feasibility of this proposal, including suggestions on process and the implementation of a program.

Analysis

The idea behind the rainwater barrel initiative is to draw attention to residential irrigation practices, which accounts for 40% of domestic water consumption during summer (June to September). This is the area in which the City's Drinking Water Shortage Response Plan (Sprinkling Regulations) is focusing its attention and efforts for conserving water.

Rainwater barrels would provide an alternative to using treated drinking water for irrigation, and give our residents the ability to take responsible action in discretionary water use, allowing for reduced seasonal consumption.

In Richmond and other cities or municipalities, many downspouts from our roofs are connected directly to the drainage system or they are directed over surfaces that are poor at absorbing water. To utilize a rainwater barrel, a diverter is installed on the downspout, which is designed to capture some of this water. Rainwater flows from the roof into the gutter downspout, then the diverter transfers rainwater to the barrels for storage.

The rainwater collected can be used for a number of outdoor uses that would normally require treated tap water, such as watering gardens and lawns, or washing cars and pets. Added benefits of rain water barrels include, decrease the use of treated potable water for outdoor uses such as plants, decrease storm water runoff since the water seeps into the groundwater when used to water gardens and lawns, decrease the demand for new capacity at water treatment plants, decrease in the water bill.

Other Cities

Staff undertook a review of rainwater barrel programs offered by other Cities. The average capacities of the rainwater barrels offered are between 202 litres (45 imperial gallons) to 341 litres (75 imperial gallons). Some are designed and manufactured specifically for this purpose; others are recycled from the food and beverage industry.

Most cities subsidize their rainwater barrel programs by up to 65% of the total cost. As an example, the City of Vancouver buys a 341 litre or (75 imperial gallon) rainwater barrel for \$140 and sells the rainwater barrel for \$60.00. (See attachment A)

A local supplier is offering "The Garden WaterSaver" a very low cost alternative utilizing recycled food industry 202 litre (45 imperial gallon) barrels at approximately \$55 per unit complete with rainwater gutter hook up. Interconnecting more barrels through a piping system will increase storage capacity at an additional cost of approximately \$40 each.

The average roof sheds $3/4\text{m}^3$ of rainwater per hour during a moderate rainfall. It takes 0.5 cm of rainfall on the average roof will fill a rainwater barrel.

During the 2003 year, rainfall sufficient to fill the rainwater barrel occurred 11 times during the high demand period (June to September). If the rain fills the barrel each time, the total amount of water saved will be approximately 2.25 m³, a value of \$1.37 during this period.

Water Quality

Rainwater collected in a barrel can provide a relatively clean, safe, and reliable source of water as long as the collection system is properly built and maintained. Rainwater that is to be used outside to water lawns or gardens is typically not a water quality concern.

Rainwater **should not** be used for drinking purposes unless health professionals perform a proper analysis and a treatment process is determined. In an emergency where the water distribution system is inoperable, relatively clean water is available for non-drinking purposes.

Distribution

If the City of Richmond wishes to enter into a pilot project for rainwater barrel usage, the recycling depot on Lynas Lane currently distributes blue boxes and garden composters. The addition of rainwater barrels would be a good fit and will have minimal impact on staff resources over the long term of the project.

The City of Richmond would directly purchase rainwater barrel from suppliers, coupons for a 50% subsidy will be available at the Tax counter at City Hall for Richmond residents. Pickup will be done at the recycling depot. The customer will only need to bring the coupon to receive a rainwater barrel.

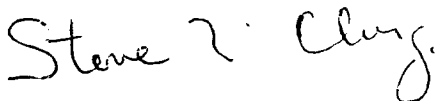
Financial Impact

Funding of \$10,000 to purchase up to 75 of the Garden Water Saver and 25 of the Flexahopper rainwater barrels can be found within the existing Utility Budget, as this year there is a decrease in the number of water main breaks. Staff recommends the City offer a 50% subsidized low cost rainwater barrel program utilizing existing staff and distribution facilities. (See attachment "B" for program cost analysis)

Conclusion

Rainwater barrels provide a source of water for lawns and gardens that does not tax the municipal water system. The combination of residential water metering and rainwater barrel programs promotes and increases the public's awareness to conserve drinking water.

Through implementing a subsidized rainwater barrel program in the City of Richmond we will reaffirm our conservation leadership and our commitment to environmental stewardship.



Steve McClurg

Manager, Water Services

(1209)

Attachments A

City or Municipality	Type	Capacity Metric	Capacity Imperial	Actual Cost	Subsidized Cost	Hookup to Gutters
Vancouver	Flexahopper	341 L	75 Gal	\$ 140.00	\$ 60.00	No
Burnaby	Flexahopper	341 L	75 Gal	\$ 140.00	\$ 65.00	No
Langley Township	Garden water saver	202 L	45 Gal	\$ 55.00	\$ 35.00	Yes
Langley Township	Flexahopper	341 L	75 Gal	\$ 160.00	\$ 100.00	No
Delta	Flexahopper	341 L	75 Gal	\$ 140.00	\$ 70.00	No
Port Moody	Pink Lotus	236 L	52 Gal	\$ 145.00	\$ 60.00	No

The City of Vancouver has designed and manufactured rain barrels for use by residents for garden irrigation. The City subsidizes the cost by 50% and has sold 1200 to date.



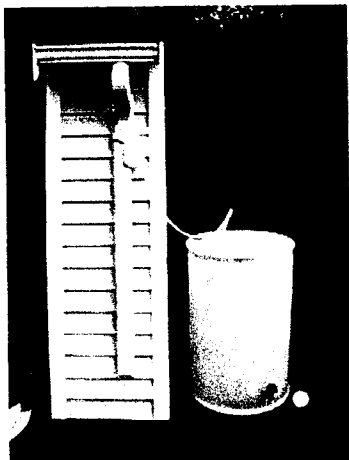
- overflow to storm drain
- childproof opening
- half barrel design allows it to sit flush against side of house
- two faucets to accommodate hose and watering can
- dark forest green
- weighs 20.5 kgs (45 lbs)
- holds 341 litres (75 imp. gallons)



As part of the **Corporation of Delta's** water conservation program, residents are encouraged to collect and reuse rainwater to keep gardens green this summer using the unique rain barrel. The City subsidizes the cost by 50% and has sold 10 to date.

- holds 341 litres (75 imp. gallons)
- half barrel design allows it to sit flush against side of house

The Garden Watersaver



- rain gutter hook-up
- No openings for mosquitoes to enter
- holds 202 litres (45 gal.)
- white or blue
- self flushes when container is full
- deactivate the system during Winter in seconds
- less than half the price of any non - subsidized Rainwater barrel
- No openings for mosquitoes to enter.
- local business

July 21, 2004

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Attachment B

Description	Actual Cost	Number of Units	Cost of City's Subsidy	Subsidized Sale Price	Start up Costs	Net City Costs
Garden Water Saver	\$40	75	\$1,500	\$20	\$3,000	
Flexahopper	\$140	25	\$1,750	\$70	\$3,500	
Advertising and Misc.					\$2,000	
Rain Gutter Hook up	\$15	100			\$1,500	
Total		100	\$3,250		\$10,000	\$6,750