City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	February 7, 2011
From:	Robert Gonzalez, P.Eng. General Manager, Engineering and Public Works	**File:**	10-6400-07-01/2011-Vol 01
Re:	**Metro Vancouver Single Sewer Utility Rate**		

Staff Recommendation

That the approach outlined in the "Metro Vancouver Single Sewer Utility Rate" report be endorsed.

Robert Gonzalez, P.Eng.
General Manager, Engineering and Public Works
(604-276-4150)

Att. 3

FOR ORIGINATING DEPARTMENT USE ONLY			
ROUTED TO:	CONCURRENCE		CONCURRENCE OF GENERAL MANAGER
Budgets	Y ☑ N ☐		
REVIEWED BY TAG	YES ☑	NO ☐	REVIEWED BY CAO YES ☑ NO ☐

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Staff Report

Origin

Metro Vancouver is facing large capital expenditures related to sewer infrastructure largely driven by the secondary treatment plant upgrades at Iona and Lions Gate Treatment Plants (est. $1 B and $400 M respectively). The Liquid Waste Management Plan was adopted by the MV Board on May 21, 2010. The report presented three scenarios for sewer utility rate projections for member municipalities. In moving these large capital projects forward, Metro Vancouver is engaging its member municipalities in reviewing further alternative sewer utility rate structures for the provision of sewer services and in particular MV staff are interested in understanding what the implications would be of establishing a standard single sewer utility rate for member municipalities similar to what is in place for the water utility.

The purpose of this report is to obtain direction from Council on an approach that best meets Richmond's objectives in context of the endorsed Liquid Waste Management Plan.

Analysis

The "Cost Allocation Task Force" report dated September 16, 1994 established the basis for Tier 1 and Tier 2 costs in the Metro Vancouver context of the sewer utility. While the subject is complex it can be generally summarized as follows:

Tier 1: Metro Vancouver projects involving basic infrastructure to support primary treatment.

Tier 2: Metro Vancouver projects involving enhanced treatment beyond primary. Tier 2 costs are split into 30% of the cost being allocated to the municipalities which the treatment plant supports, and 70% of the cost being allocated to the rest of the member municipalities.

It was between 1998 and 2001 that Richmond saw an increase followed by a decline in sewer utility rates due to the application of the Tier 1 and 2 cost structure. By 2001 the MV sewer utility rates for the Lulu Island Sewer Area (LISA) fell in line with that of the other sewerage districts (see attachment 1). However of greater issue going into the future and discussed in further detail below is the escalation in MV sewer utility rates for the LISA since then. The primary drivers of the cost escalation are the operating and maintenance costs related to the LISA (specifically for the treatment plant and Gilbert Trunk sanitary sewer forcemain.

Future MV Sewer Utility Rates

Through the development and ultimately adoption of the Regional Liquid Waste Management Plan, MV estimated sewer utility cost implications from the forthcoming major capital expenditures (including the Iona and Lions Gate treatment plant upgrades). MV prepared three different cost estimate scenarios: optimistic, moderate, and pessimistic. Variables in each scenario included various market driven factors, differing inflation rates, and grant funding amounts. The resulting impact of these major capital expenditures on most member municipalities, including Richmond was a doubling of MV sewer utility costs between 2010 and

2020 (approx. 8% annual increase). The sewer utility cost for the north shore municipalities, however, are estimated to triple by 2020 under the Moderate Scenario (see attachment 2).

It is important to note that the MV sewer utility rate estimates in the future are largely driven by the large capital projects. Richmond's recent sewer utility rate increases have been driven by MV's operation and maintenance costs of the LISA (treatment plant and related infrastructure operations and maintenance. The table below summarizes the average MV member municipality sewer utility rate increases compared to the increases passed through to Richmond.

Sewerage Rates – Projected vs. Actual

Year	Projected Rate – Metro Vancouver	Actual Rate Richmond Increase
2011	4.6%	9.6%
2010	2.6%	4.4%
2009	6.0%	18.8%
2008	3.8%	6.6%

As can be seen the actual operating and maintenance costs for the LISA consistently exceeds the average sewer utility cost for other member municipalities. As the treatment plant is aging and the Gilbert trunk sanitary sewer is nearing the end of its useful life requiring replacement, staff anticipate that MV will continue to flow higher than average LISA costs to Richmond resulting in higher than average sewer utility rate increases.

Attachment 3 is an excerpt from the Metro Vancouver 2011 Budget Municipal Consultation Presentation (October 22, 2010). Recognizing that the Liquid Waste rates presented are averages for MV member municipalities and considering the forthcoming capital costs from the approved LWMP historical MV operating and maintenance requirements, staff anticipate that Richmond could continue to be higher than the presented average.

Single Regional Sewer Utility Rate

The development of a single regional sewer utility rate is intended to parallel the single regional water rate. Each member municipality purchases water from MV in bulk. In 2011, regardless of volume consumed, municipalities paid $0.56 per cubic metre (1000 L) of water.

On February 23rd MV staff are reporting to the MV Regional Administrators Advisory Committee the results of their review of the implications of transitioning from the current Tier 1 and 2 sewer utility rate system to a single regional sewer utility rate. MV staff were asked to consider principles of fairness and equity as part of the review.

While a single regional sewer utility rate has some long term benefits, there are several implications that from Richmond's perspective warrant in-depth analysis:

1. Capital and Operating Cost Redistribution
2. Sewer Separation Programs
3. Amortization of Capital

Capital and Operating Cost Redistribution

Introduction of a single regional sewer utility rate would normalize the cost for all regional infrastructure for member municipalities. Each municipality would pay the same rate regardless of population size, amount of infrastructure or its condition.

For the north shore municipalities the transition to a single regional sewer utility rate would be an obvious advantage from a financial perspective given the upgrade to the Lions Gate sewer treatment plant and the relatively small population base on the north shore (approx. 180,000 people in West Vancouver and North Vancouver District and City combined).

It is important to note that Richmond is also currently paying one of the higher MV sewer utility rates in the region through the LISA, second only to the north shore municipalities. Other cities such as Vancouver, Burnaby, Surrey, etc... enjoy a lower MV sewer utility rate given their larger population base through which costs are more widely distributed. As noted previously, the aging MV infrastructure in Richmond and the relatively small population base through which we distribute costs results in higher MV sewer utility rates for the LISA. As Richmond contains approximately 10-15% of the MV member municipality population, re-distributing costs will stabilize future utility rate increases given the ability to spread costs amongst all municipalities.

Over the past few years Richmond has paid considerably more than the average MV sewer utility rate. MV does not have sewer utility reserves as compared to Richmond and other member municipalities. Therefore the attached MV future projections do not include higher than average operating and maintenance costs for the LISA resulting as an example from the Gilbert Trunk sewer replacement. Staff believe that the review of the single sewer utility rate is warranted to determine whether it could be advantageous in the longer term provided that the review includes both capital *and all operating and maintenance costs*.

Sewer Separation Programs

Vancouver, Burnaby, and New Westminster all have Combined Sewers (Drainage and Sewer) Systems. For many years it has been the objective of MV to have municipalities separate drainage and sewer systems so that effluent volumes entering treatment plants are minimized to the greatest extent possible. The last two iterations of the LWMP have contained specific initiatives requiring these municipalities to invest substantial capital funding to separate the combined sewers.

While it is difficult to quantify exactly how much is being invested by these municipalities today, the annual cost is in excess of $30M annually. As these costs are anticipated to extend to 2050 for the Vancouver Sewerage Area and 2075 for Fraser Sewerage Area, it unreasonable from Richmond's perspective to include these costs in the single sewer utility rate. No other member municipalities have similar combined sewer separation issues, and it is staff's recommendation that the analysis be conducted in isolation of this capital intensive program.

Amortization of Major Capital Expenditures

MVs projection of future sewer utility rates includes borrowing large sums of capital funding when required. According to current MV policy set by its Board, the standard amortization period is 15 years. Considering that the life of the infrastructure is expected to be significantly longer, from a user pay perspective the amortization period should also be longer than 15 years. Extending the amortization period reduces the annual payment amount, which reduces the burden on rate payers today. This may be prudent given competing interests for funding of other major capital infrastructure initiatives in the region. The negative aspect of extending the amortization period is that the total amount of money paid will be greater given the inherent financing costs.

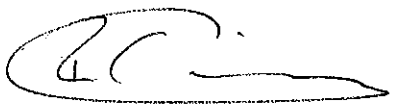
Given the user pay principle, staff recommend that MV undertake an analysis of the implications of extending the amortization period beyond the current 15 year timeframe.

Financial Impact

There is no financial impact at this time. As additional information becomes available from MV, staff will apprise Council accordingly.

Conclusion

Metro Vancouver is looking into the implications of a regional single sewer utility rate. Recognizing that Richmond has, for the past several years, been paying a higher MV sewer utility rate than the average member municipality, there may be an advantage to a single sewer utility rate across the member municipalities. It is staff's recommendation, however, that further analysis by MV is required as outlined above.



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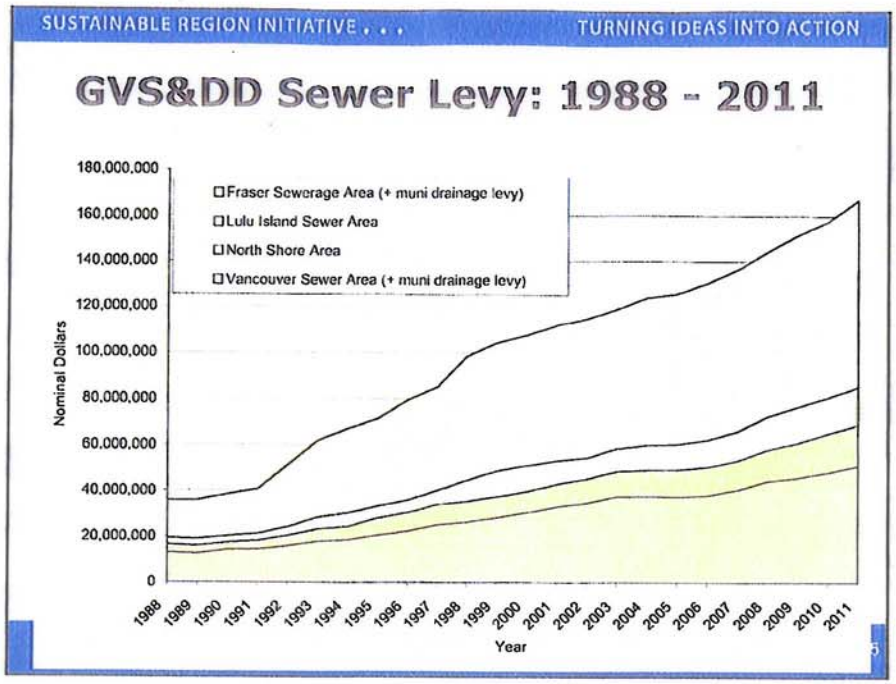
SUSTAINABLE REGION INITIATIVE . . .
TURNING IDEAS INTO ACTION
GVS&DD Sewer Levy: 1988 - 2011
Fraser Sewerage Area (+ muni drainage levy)
Lulu Island Sewer Area
North Shore Area
Vancouver Sewer Area (+ muni drainage levy)
Nominal Dollars
180,000,000
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
0
1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Year
5

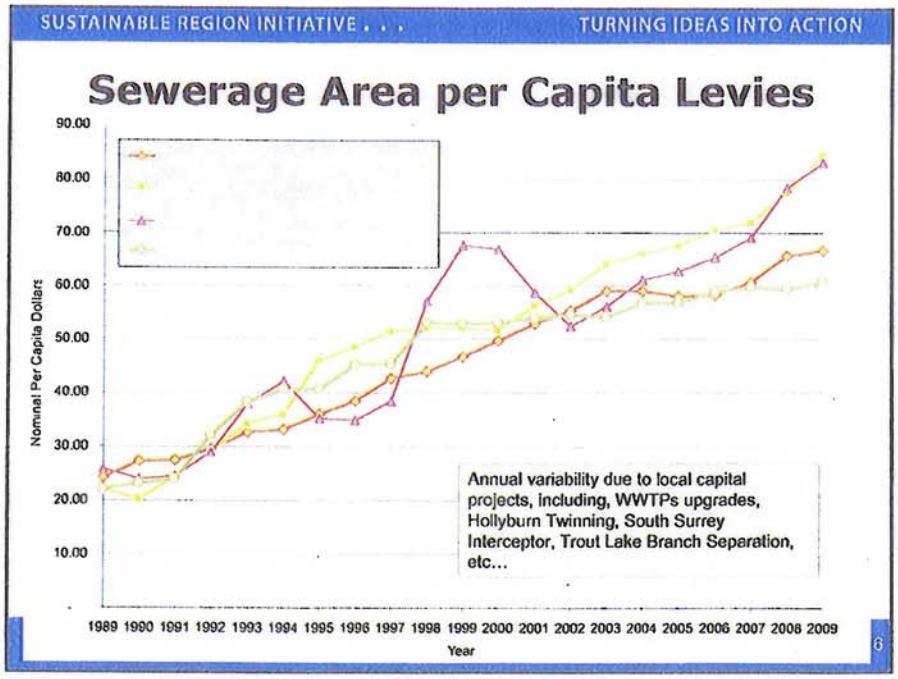
SUSTAINABLE REGION INITIATIVE . . .
TURNING IDEAS INTO ACTION
Sewerage Area per Capita Levies
Nominal Per Capita Dollars
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
Annual variability due to local capital projects, including, WWTPs upgrades, Hollyburn Twinning, South Surrey Interceptor, Trout Lake Branch Separation, etc...
1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Year
6

Table 2 *Scenarios for Annual Household Levies by Sewerage Area*

2a) Sequencing Lions Gate and Iona Island within 10 years (includes inflation and **2/3** senior government cost sharing)

Sewerage Area	2010	2015	2020	2025	2030
Fraser	$156	$171	$242	$291	$323
Lulu Island	$157	$172	$248	$298	$331
North Shore	$181	$292	$417	$504	$565
Vancouver	$159	$266	$364	$440	$492

2b) Sequencing Lions Gate and Iona Island within 10 years (includes inflation and **1/3** senior government cost sharing)

Sewerage Area	2010	2015	2020	2025	2030
Fraser	$156	$186	$282	$355	$415
Lulu Island	$157	$188	$283	$357	$418
North Shore	$181	$317	$639	$810	$953
Vancouver	$159	$290	$545	$690	$812

2c) Sequencing Lions Gate and Iona Island within 10 years (includes inflation but **no** senior government cost sharing)

Sewerage Area	2010	2015	2020	2025	2030
Fraser	$156	$205	$335	$427	$506
Lulu Island	$157	$206	$332	$423	$502
North Shore	$181	$348	$911	$1,168	$1,391
Vancouver	$159	$317	$769	$985	$1,172

The above three tables all assume that long term debt is amortized over 15 years.

Attachment 3
From: Metro Vancouver's 2011 Budget Municipal Consultation (Richmond Area) Presented October 22, 2010

Water District

	2010	2011*	2012	2013	2014	2015
Projected Water Rate	.4956	.5648	.6407	.7093	.7556	.8009
Water Rate Change	11.9%	14.0%	13.4%	10.7%	6.5%	6.0%
Household Impact	$190	$213	$241	$267	$284	$301

*Proposed Budget

- Total Capital $2.1 billion to 2020

Liquid Waste

	2010	2011*	2012	2013	2014	2015
Projection	2.6%	4.6%	6.0%	5.5%	5.0%	5.0%
Household Impact	$162	$170	$180	$190	$200	$210

*Proposed Budget

- Total Capital $2.1 billion to 2020