

Report Date: November 23, 2016  
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Meeting Date: December 7, 2016

TO: Vancouver City Council

FROM: General Manager of Engineering Services

SUBJECT: 2017 Annual Review of Sewer Rates and Environmental Updates Under the Sewer & Watercourse By-Law

### **RECOMMENDATION**

- A. THAT Council approve the amendments to the Sewer & Watercourse By-law, generally as set out in Appendix A, including the establishment of the 2017 rates and fees, with the following recommended increases: 11.3% increase in the per unit flat fee for Single Dwelling (from \$345 per unit in 2016 to \$384 per unit in 2017); 11.3% increase in Other Sanitary Sewer User Rates (as listed in Appendix A); 11.3% increase in per unit Metered Rate (from \$2.221 in 2016 to \$2.472 in 2017); 11.3% increase in the per unit Water Discharge Permit User Rate (from \$0.7235 in 2016 to \$0.8053 in 2017); and, 2.0-3.2% increase in Public Water Connection Fees (as listed in Appendix A, PART I).
- B. THAT Council approve amendments to the Sewer & Watercourse By-law, as set out in Appendix B, to be consistent with Provincial environmental legislation.
- C. THAT Council instruct the Director of Legal Services to bring the Sewer & Watercourse By-law amendments, generally as set out in Appendices A and B, forward for enactment.

### **REPORT SUMMARY**

Each year, the Sewer Utility provides a report that describes the Utility's progress in meeting its strategic objectives, plans for the upcoming year and recommends revised rates for sanitary sewer services and connection fees.

These rates cover the sanitary sewer system while the storm system is funded through property taxes. The cost of the City's sewer system includes the levy paid to Metro Vancouver for sewage treatment, as well as capital and operating costs to maintain and improve the City's sewer system.

The key drivers of the proposed rate increase are increasing treatment costs paid to Metro Vancouver and the debt costs associated with the Sewers Capital Plan. Starting in 2016, the primary Metro Vancouver levy increase is a result of the regulatory obligation to upgrade the Iona Wastewater Treatment Plant, which treats sewage from the City of Vancouver. The increase in the 2015-18 Capital Plan for the Sewer Utility is to accelerate the sewer

separation program in order to achieve the regulatory requirement to eliminate combined sewer overflows by 2050.

For 2017, staff are recommending a 11.3% increase for sanitary service rates for flat and metered customers and a 2.0-3.2% increase for connection fees.

Discharge into the sewer system is governed by the Sewers & Watercourse By-law in conjunction with the provincial *Environmental Management Act* and Contaminated Sites Regulation. Updates to the by-law are required to better align terminology with the provincial legislation which has had amendments since its promulgation in 1997.

### ***COUNCIL AUTHORITY/PREVIOUS DECISIONS***

Sanitary sewer user fees and public sewer connection fees are reviewed annually by Council to establish the following year's rates.

On April 4, 2000, Council approved the implementation of user fees for sanitary sewer services to fund the operating portion of the sanitary sewer costs, based on volume.

In December 2008, Council approved shifting the remainder of the sanitary sewer costs (the infrastructure costs) from general taxes to payment through user fees. This shift was implemented over two years and was complete in 2010. Currently, only the storm sewer system costs are funded by property taxes.

In December 2011, Council approved annual transfers between the Water Rate Stabilization Reserve and the Sewer Rate Stabilization Reserve based on the impact that weather related water consumption has on revenues in each utility.

### ***CITY MANAGER'S/GENERAL MANAGER'S COMMENTS***

The City Manager and General Manager of Engineering Services RECOMMEND approval of recommendations A and B above.

### ***REPORT***

#### ***Background/Context***

The City of Vancouver's sewer system has two main components. The sanitary system collects wastewater from homes and businesses, while the storm system handles surface run-off from private and public property. Sanitary waste and stormwater are collected from more than 100,000 service connections from homes and businesses, and stormwater is collected from more than 45,000 catch basins through a system that is 1,400 km in length.

The system delivers sanitary waste to the treatment facilities operated by the Greater Vancouver Sewerage and Drainage District (GVS&DD - Metro Vancouver) and stormwater to outfalls along the City's waterfront.

The costs of running the system include the capital costs for renewing the system and separating sewers, the cost of sanitary treatment provided by Metro Vancouver and the operating costs to maintain the system.

The sanitary system is funded through sewer user rates based on water consumption and the storm system is funded through general property taxes.

In the City of Vancouver, only some of the Sewer Utility's customers are metered; these are mainly commercial and multi-family properties. In 2012, Council approved revisions to the Waterworks By-law requiring residential metering for all new single-family and duplex properties. Approximately 4,300 or 5% of these homes are now metered. Metered properties pay sewer costs based on water consumption as a proxy for sewer flows and unmetered single-family dwellings pay a flat rate on an annual basis.

A third group of customers, referred to as Permittees, are those industries that discharge more than 300 cubic metres of wastewater into the sanitary system over a 30-day period. These customers pay Metro Vancouver directly for sanitary treatment but also pay their share of the costs the City incurs in operating the sewer system. This is a metered rate covering only City costs and is less than the metered rate charged to other customers (which includes both City and Metro Vancouver costs).

Another group of these Permittees discharge water from contaminated sites, typically during excavation/redevelopment. Amendments to the terminology within the Sewer & Watercourse By-law that reference the provincial *Environmental Management Act* and Contaminated Sites Regulation are required to ensure discharges from contaminated sites to the sewer system are processed and managed appropriately for the protection of the aquatic environment and to prevent overloading of the sanitary system.

### ***Strategic Analysis***

The mandate of the City's Sewer Utility is to protect public health, the environment and property from contamination and flooding. All of the initiatives and strategies discussed here support this mandate.

One of the City's strategic priorities is to accelerate the sewer separation program in order to achieve the elimination of combined sewer overflows by 2050. This change is required under provincial regulation and detailed in the region's Liquid Waste Management Plan (LWMP). The change not only protects the environment and local receiving water bodies from combined sewer overflows, it also mitigates sewer backups and overland flooding damage to properties.

The City-Wide Integrated Rainwater Management Plan (IRMP) and Musqueam Creek Integrated Rainwater Management Plan (IRMP) will provide action items and implementation options to best manage rainwater run-off. Management of rainwater run-off has a number of primary benefits including improving and protecting watershed water quality along with the secondary benefit of mitigating the effects of climate change during rain events and supporting the city's biodiversity.

The following sections highlight the important work being done in these areas and what is planned for next year.

### ***Major Accomplishments in 2016***

As mandated by the regional Liquid Waste Management Plan (LWMP), the City is working to eliminate combined sewer overflow by 2050 through sewer separation and stormwater management. City staff and contracted work will replace combined sewers with separated sewers, which have significantly greater capacity to handle rain events and thus help protect the environment and prevent floods.

In 2016, the sewers utility accomplished the following objectives.

- Constructed 7.5 kilometres of separated sewers as part of the annual program to meet the regulatory obligation to eliminate combined sewer overflows.
- Received Council adoption of the City-Wide Rainwater Management Plan and direction to proceed with the Green Infrastructure implementation by hiring a project manager to oversee the implementation of these plans.
- Processed 1,200 new sewer and water service connection applications to new homes and renovated buildings separated private property connections and installed water meters. Service connection-related fees were adjusted to the level of cost recovery.
- Initiated the replacement of an end-of-life sewage pump station located at Glen and East 7th Avenue that will have back-up power and by-pass pumping provisions to strengthen the sewer utility network by reducing the risk of combined sewer outflows into receiving bodies.
- Completed the 3 year Still Creek Sewer Cross Connection investigation program.
- Inspected 105 kilometres of sewer system (5% of sewer system) to meet our regulatory obligation.

### *Plans for 2017*

- Continue with the Sewer Separation Program by using in-house design and construction expertise, supplemented by contracted design and construction services.
- Proceed with and update Council on the Green Infrastructure Implementation Plan.
- Complete detailed design and commence construction procurement for the replacement of Glen and East 7<sup>th</sup> Avenue pump station and initiate project planning for the replacement of two other pump stations.
- Complete the Musqueam Creek Integrated Storm Water Plan in partnership with Musqueam First Nation.
- Initiate a procurement process to prequalify vendor lists for professional design and construction contracting for sewer separation.

### *Looking Ahead, 2018-2021*

- Continue to separate storm and sanitary sewers.
- Construct rainwater management projects as part of the Green Infrastructure Implementation Plan.
- Plan, design and construct the replacement of three aging pump stations under the Pump Station Program.
- Develop plans for earthquake resiliency.

### **Service Metrics**

- **Sewer separation and replacement** – The City continued its sewer separation and replacement program with forecasted construction of 7.5 kilometres of separated sewers in 2016, of which 1.9 kilometres of sewer separation was delivered through contracted services. Over 53% of the sewer system is now separated. The City's goal is to substantially complete the separation program by 2050 to eliminate combined sewer overflows. In the past five years, the number of kilometres of separated sewers per year has decreased as a result of the increasing number of trunk sewer projects since 2011. These larger sewers require more time and resources to construct compared to smaller branch sewers.

- **Trouble calls** – The number of sewer connection trouble calls reflects the condition of the sewer system, irrespective of the weather. In 2016, The City received 1,052 trouble calls, slightly lower than the previous year's number of 1,097. 2016 was a more typical year for rainfall, resulting in a slight decrease in the number of flood claims received as a result of root intrusion in the public and private side service connections. Furthermore, with few intense storm events in 2016, overland flood occurrences during rain events were minimal.
- **Sewer overflows** – Combined sewer overflows are reported biennially in Metro Vancouver's Integrated Liquid Waste and Resource Management Plan. The latest reporting period was for 2013-2014. In 2016, the volume of combined sewer overflows was typical for the spring-summer months, while the volume for the remainder of the year will depend on fall and winter rainfall events.
- **Bacteria levels** – In 2016, no beach closures or advisories were issued by Vancouver Coastal Health, while bacteria levels in False Creek were consistent with previous years, except for elevated counts experienced between 2013 to 2015.
- **Construction-related costs** – In 2016, the average cost per kilometre for sewer construction was higher than in previous years due to a higher percentage of more costly trunk sewer projects involving larger pipes in wide and deep excavations. In 2016, trunk sewer projects accounted for approximately 32% of project lengths, where in previous years they typically accounted for between 10 and 20%. Beginning in 2015, sewer separation cost metrics were divided into two categories to reflect the variability of construction costs associated with branch versus trunk sewers. The increase in cost per kilometre for trunk projects was due to construction in peat-areas, large by-pass pumping requirements, wide trench width material movement and trenchless delivery methods.

Service	Metric Type	COV Metric	2012	2013	2014	2015	2016F
Sewers and Stormwater	Quantity	km of sewers separated per year	12.7	10.5	9.6	6.9	7.5
	Quality	% of system which has separated storm and sanitary sewers	50.80%	51.60%	52.30%	52.70%	53.20%
	Result	# of sewer connection trouble calls	750	869	870	1097	1052
		# of home / business flooding claims received	38	122	90	196	125
		# of coliform limit exceedances (beaches and False Creek)	0	2	2	3	0
	Cost	cost per km of sewer weighted average	\$2,286,000	\$2,382,000	\$2,482,000	\$3,309,714	\$3,690,000
		cost per km branch size sewer	NDA	NDA	NDA	\$2,604,646	\$2,525,500
		cost per km trunk size sewer	NDA	NDA	NDA	\$4,235,685	\$5,730,000

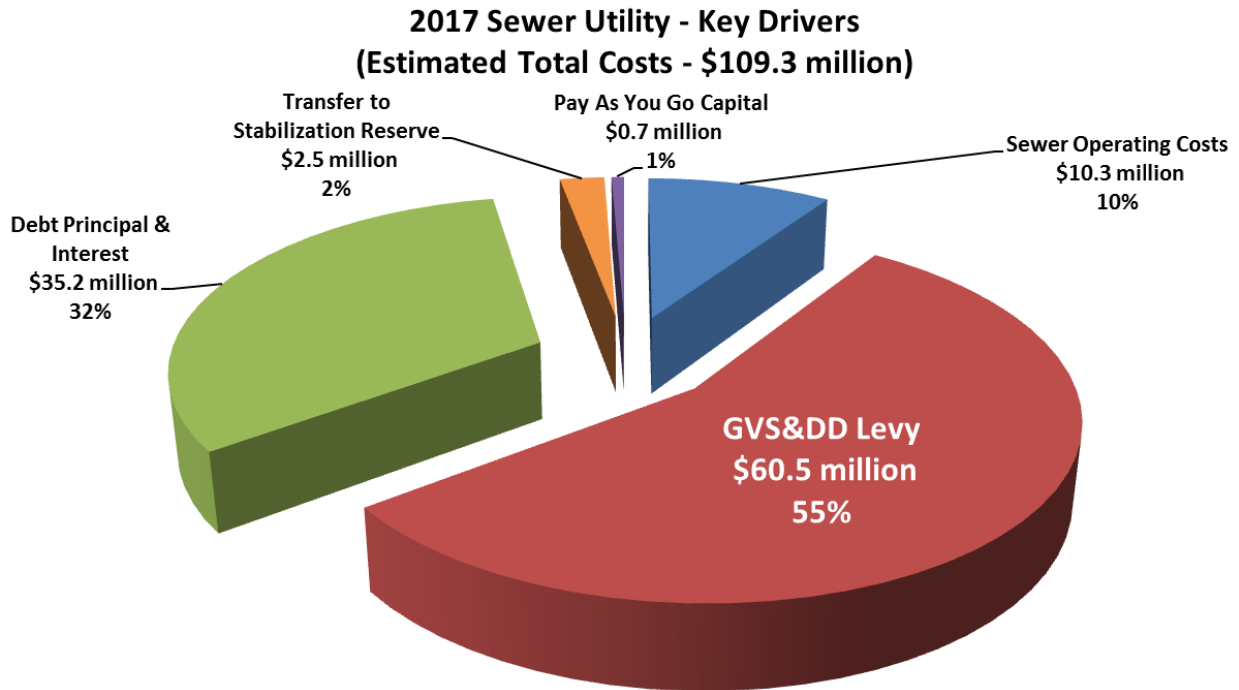
## Financial Implications

### Key Cost Drivers

Sewer Utility expenditures consist of four key cost drivers: the Greater Vancouver Sewerage and Drainage District (GVS&DD) levy which makes up about 55% of the total budget, City of Vancouver operating costs which make up about 10% of the total budget, transfers to or from

the stabilization reserve which make up 2% and costs associated with Sewers Capital Plan expenditures which make up about 33% of the budget as shown graphically in Figure 1 below. A description of each component and its related activities follows.

**Figure 1 - Sewer Utility Costs**



### GVS&DD Levy

Metro Vancouver imposes a levy on each member municipality annually to cover the cost of regional liquid waste collection and sewage treatment facilities. The levy is a fixed amount based on the operating and capital budgets in each of the sewerage areas in the region. Current year levy increases are associated with the management of existing stockpiled biosolids to make room for the new plant. Future year levy increases will primarily be associated with the high capital cost associated with the new plant, biosolid dewatering and secondary treatment biosolids management. Metro Vancouver is currently working on multi-year funding strategy and debt structure options for evaluation and input. The levy, which also covers the operating and capital costs of the regional collection system, will increase by 5.1% in 2017.

### Sewer Capital Program

The Sewers capital program has historically been funded through debentures. The impact of debt on the operating budget is gradual and spread over 10 years. In 2015, the City instituted a small 'pay-as-you-go' contribution towards capital expenditures on the sanitary sewer system. In 2016, there was a decrease of \$0.5 million to the 'Pay as you Go' contribution based on rate increase pressures related to the introduction of biosolids management at the Iona plant, bringing the contribution down to \$0.7 million. The plan for 2017 is to keep the 'Pay as you Go' contribution flat at this level in the near term.

### Operating and Maintenance

Sewer operating and maintenance costs are associated with cleaning, repairing, inspecting and managing the infrastructure, as well as emergency response for sewer backups and flooding. Tasks include unblocking mains and connections, clearing tree root intrusions, completing CCTV inspections, cleaning and maintaining catch basins, maintaining sewer pump stations and working with property owners to locate and eliminate cross connections.

### **2016 Budget Performance**

Table 2 summarizes the operating budget and current forecast for the Sewer Utility in 2016.

**Table 2 - 2016 Budget Performance**

Sewer Utility (\$ millions)	2016 Forecast	2016 Budget	\$ Variance	% Variance
<b>Water Consumption Volume</b>	<b>112,886,209</b>	<b>110,320,000</b>		
<b>Revenues</b>				
General Tax Levy	\$ 35.3	\$ 35.3	\$ 0.0	0.0%
Metered Rate Revenues	35.5	37.0	(1.5)	-4.1%
Flat Rate Revenues	27.9	27.5	0.4	1.4%
Industrial Waste Water Fees	0.8	0.8	-	0.0%
Other Revenues	1.2	0.9	0.3	34.7%
<b>Total Revenues</b>	<b>\$ 100.7</b>	<b>\$ 101.5</b>	<b>\$ (0.8)</b>	<b>-0.8%</b>
<b>Expenses</b>				
GVS&DD Levy	\$ 57.6	\$ 57.6	\$ -	0.0%
Sewers Operating Costs	10.2	10.0	(0.2)	-2.1%
Debt Interest	10.3	10.3	-	0.0%
<b>Total Expenses</b>	<b>78.1</b>	<b>77.9</b>	<b>(0.2)</b>	<b>-0.3%</b>
<b>Transfers</b>				
Debt Principal	22.9	22.9	-	0.0%
Transfer to/(from) Stabilization Reserve	(1.0)	-	1.0	0.0%
"Pay as you Go" Capital	0.7	0.7	-	0.0%
<b>Total Transfers</b>	<b>22.6</b>	<b>23.6</b>	<b>1.0</b>	<b>4.4%</b>
<b>Total Expenditures &amp; Transfers</b>	<b>\$ 100.7</b>	<b>\$ 101.5</b>	<b>\$ 0.8</b>	<b>0.8%</b>
<b>Surplus/(Deficit)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0.0%</b>

\*Tables may not sum due to rounding

### 2016 Revenues

The revenues from General Tax Levy fund the storm component of the sewer system and the utility fee supported revenues fund the sanitary component of the system. While the proportions can vary from year to year, the storm component typically makes up about 37% of the total sewer expenditures.

Metered sewer revenues are associated with the water used by metered customers since the volume of water consumed serves as a proxy for waste flows. Metered customers in all sectors consumed more water in 2016 than projected. Despite the higher consumption, the current

forecast for metered revenues is about \$1.5 million less than budgeted. This is primarily due to a change in 2015 consumption estimates after the 2016 budget was approved and unbudgeted exempt properties. There are a small number of properties that consume water but can apply for an exemption to the sewer fee. Previously these were not accounted for in the budgeted metered revenue; for 2017 they have been. Flat rate revenues are higher than budgeted due to additional revenue generated from the number and type of flat-rate customers. For further discussion of this trend, refer to the 2017 Annual Review of the Water Utility (RTS 11615). Finally, the increase in other revenues is largely due to the recoveries at the City's Vernon Drive Grit Facility. This facility de-waters and provides environmental handling for wet slurries from catch basin cleaning and other "sucker-truck" tasks; these services are also offered to private operators of similar equipment, on a fee-for-service (cost recovery) basis.

### 2016 Expenditures & Transfers

The expenses for 2016 are expected to be over budget by less than 1%.

The anticipated transfer from the Rate Stabilization Reserve is related to the lower metered revenues described above.

### **2017 Proposed Budget and Rates**

The average regional Sewer Levy set by Metro Vancouver is set to increase by 5.5%. However, the levy, imposed on individual Metro Vancouver member municipalities, is a fixed amount based on the operating and capital costs of each specific sewage area. The Metro Vancouver levy to the City of Vancouver covers the cost of regional collection and sewage treatment facilities. The Vancouver Sewage Area (VSA) levy increase is less than the average rate due to Metro Vancouver's VSA operation, maintenance and capital programs being less than expected and higher in other sewerage areas. VSA biosolids work is on the rise, but is largely funded by Metro Vancouver's reserves. As a result, the City faces a 5.1% increase.

The key drivers of the proposed 11.3% rate increase are the 5.1% increase in the Metro Vancouver Sewer Levy Rate charged for sewer treatment and stockpiled biosolids management, the 6% increase in debt costs associated with increased sewer separation, a \$2.5 million transfer to the stabilization reserve and increased volume of sewer revenues projected in 2017 as a result of anticipated increased total water consumption. While this levy does include GVS&DD capital costs, the increase this year is driven by the increased Metro operating costs at the Iona Wastewater Treatment Plant and biosolids management and the allocation of these costs fully to the sanitary system.

Since sewage flows are not directly metered, an estimate is made on the basis of water consumed. As discussed in the Annual Review of Water Rates, water consumption has been higher than expected in 2016 and the estimate has been adjusted for the 2017 budget and beyond. The increase in total water volume is also due to the alignment of assumptions with the Greenest City Action Plan (GCAP) target of per capita water use.

The 2017 proposed budget is summarized in Table 3 with the restated 2016 budget and forecast for comparison.



**Table 3 - Proposed 2017 Budget**

Sewer Utility (\$ millions)	2016 Forecast	2016 Budget	2017 Proposed	\$ Change from 2016 Budget	% Change
<b>Water Consumption Volume</b>	<b>112,886,209</b>	<b>110,320,000</b>	<b>112,620,359</b>		
<b>Revenues</b>					
General Tax Levy	\$ 35.3	\$ 35.3	\$ 36.9	\$ 1.6	4.5%
Metered Rate Revenues	35.5	37.0	40.3	3.3	8.9%
Flat Rate Revenues	27.9	27.5	30.2	2.7	9.7%
Industrial Waste Water Fees	0.8	0.8	0.8	0.0	5.1%
Other Revenues	1.2	0.9	1.0	0.1	14.4%
<b>Total Revenues</b>	<b>\$ 100.7</b>	<b>\$ 101.5</b>	<b>\$ 109.3</b>	<b>\$ 7.7</b>	<b>7.6%</b>
<b>Expenses</b>					
GVS&DD Levy	\$ 57.6	\$ 57.6	\$ 60.5	\$ 2.9	5.1%
Sewers Operating Costs	10.2	10.0	10.3	0.3	3.2%
Debt Interest	10.3	10.3	12.0	1.7	16.5%
<b>Total Expenses</b>	<b>78.1</b>	<b>77.9</b>	<b>82.8</b>	<b>4.9</b>	<b>6.3%</b>
<b>Transfers</b>					
Debt Principal	22.9	22.9	23.2	0.3	1.3%
Transfer to/(from) Stabilization Reserve	(1.0)	-	2.5	2.5	0.0%
"Pay as you Go" Capital	0.7	0.7	0.7	-	0.0%
<b>Total Transfers</b>	<b>22.6</b>	<b>23.6</b>	<b>26.4</b>	<b>2.8</b>	<b>11.8%</b>
<b>Total Expenditures &amp; Transfers</b>	<b>\$ 100.7</b>	<b>\$ 101.5</b>	<b>\$ 109.3</b>	<b>\$ 7.7</b>	<b>7.6%</b>
<b>Surplus/(Deficit)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0.0%</b>

\*Tables may not sum due to rounding

### Revenues

The proposed rate increase for both flat and metered sewer utility customers is 11.3% in 2017. The net increase of \$3.3 million in metered revenues is a result of an increase of \$4.1 million attributed to the change in the rate charged offset by a \$0.8 million decrease attributed to an increase in total water volume estimates (which serve as a proxy for sewers), refer to the 2017 Annual Review of the Water Utility (RTS 11615), offset by an adjustment in assumptions for exempt properties, causing an overall decrease in volume.

Prior to 2012, all single-family dwellings and duplexes paid a flat annual rate for water. Since January 1, 2012, all new single family homes and duplexes are metered and no longer pay the flat rate. Approximately 1,200 homes per year are moving to a metered rate. The net increase of \$2.7 million in flat rate revenues is a result of a \$3.1 million increase attributable to the flat rate increase and type of flat rate customers offset by a \$0.4 million decrease attributable to the decrease in the number of customers paying the flat rate.

The \$1.6 million increase in the tax supported portion of the sewer budget represents the cost of the storm component of the sewer system which is calculated to be about 34% of the total expenses and transfers.

### Expenditures & Transfers

Debt charges (debt interest and principle combined) associated with the sewer capital program are increasing by 6% in 2017. These capital costs are related to our ongoing prioritization of the sewer separation program.

The 2017 budget for the GVS&DD levy for Vancouver is increasing by 5.1% over the 2016 budget. While this levy does include GVS&DD capital costs, the increase this year is driven by increased Metro operating costs at the Iona Wastewater Treatment Plant and biosolids management and the allocation of these costs fully to the sanitary system.

Since 2014 the Rate Stabilization Reserve has declined. For 2017 a transfer of \$2.5 million is budgeted to help achieve target a target reserve balance of 5-10% of water purchases.

Staff are proposing no changes to the Pay as You Go strategy.

By realigning how the City provides service and reducing equipment costs, staff were able to partially offset increases in labour and equipment costs. Part of the increase in operating costs is due to the planned creation of an Adopt a Catch Basin program that will engage citizens and the community to clear clogged catch basins of leaves to reduce overland flooding during rain events.

### **Five Year Outlook**

The Utility's five-year outlook and estimated balance of the rate stabilization reserve is summarized in Table 4.

**Table 4 - Sewer Utility Five-year Outlook**

Sewer Utility (\$ millions)	2017	2018	2019	2020	2021
<b>Assumptions:</b>					
Water Consumption Volume	112,620,359	111,790,451	110,960,101	110,129,508	109,298,868
Debt Cost Increases	6.0%	7.0%	7.0%	7.0%	6.5%
Metro Levy Price Increase	5.1%	8.0%	10.0%	10.0%	10.0%
City Rate Increase	11.3%	9.3%	9.3%	9.3%	9.3%
<b>Revenues</b>					
General Tax Levy	\$ 36.9	\$ 39.5	\$ 42.8	\$ 46.3	\$ 50.1
Sewer Fees - Metered	40.3	43.8	47.5	51.5	55.8
Sewer Fees - Flat Rate	30.2	32.4	34.9	37.5	40.3
Industrial Waste Water Fees	0.8	0.9	1.0	1.1	1.2
Other Revenues	1.0	1.1	1.1	1.1	1.1
<b>Total Revenues</b>	<b>109.3</b>	<b>117.7</b>	<b>127.2</b>	<b>137.5</b>	<b>148.6</b>
<b>Expenses</b>					
GVS&DD Levy	60.5	66.8	74.6	81.4	88.4
Sewers Operating Costs	10.3	10.5	10.8	11.0	11.2
Debt Interest	12.0	12.7	14.7	15.4	16.1
<b>Total Expenses</b>	<b>82.8</b>	<b>90.0</b>	<b>100.1</b>	<b>107.8</b>	<b>115.7</b>
<b>Transfers</b>					
Debt Transfers	23.2	25.0	25.6	27.7	29.9
Pay As you Go Capital	0.7	0.7	0.7	0.7	0.7
Transfer to/(from) Stabilization Reserve	2.5	2.0	0.9	1.3	2.4
<b>Total Transfers</b>	<b>26.4</b>	<b>27.7</b>	<b>27.1</b>	<b>29.7</b>	<b>33.0</b>
<b>Total Expenditures &amp; Transfers</b>	<b>109.3</b>	<b>117.7</b>	<b>127.2</b>	<b>137.5</b>	<b>148.6</b>
<b>Surplus/(Deficit)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

	Forecast 2016					
Reserve Balance (\$ millions)	1.3	3.8	5.8	6.7	8.0	10.4
% of Water Purchases (target 5 - 10%)	3.3%	5.1%	7.6%	8.5%	9.9%	12.6%

\*Tables may not sum due to rounding

The GVS&DD levy for Vancouver is increasing by 5.1% in 2017 with projected increases in the GVS&DD levy of 8.0% - 10% per year for the next four years. These projections are based on operating and capital costs at the Iona Wastewater Treatment Plant and have been adjusted for biosolid removal costs. The Iona plant must be upgraded to secondary treatment by 2030 and the Lions Gate Treatment Plant by 2020. As such, we expect to see larger increases in Metro costs in the future.

Debt costs are expected to increase as we continue to invest in our sewer infrastructure and strive to meet the LWMP requirement of eliminating combined sewer overflows by 2050. In order to do this, we will increase separating the sewer system to an average rate of more than 1% of the system per year. Increases in future capital plans will be required for the city to meet its regulatory obligation regarding separated sewers.

Although this five-year outlook assumes inflationary increases in the sewer operating costs, we will continue to look for ways to provide the service at a lower cost by finding more efficient ways to maintain the system.

## **Related Fees**

To be consistent with other flow related rate increases, an 11.3% increase in rates for specific types of disposals is proposed. These include discharge of contaminated groundwater, ship wastewater and discharges by Utilities (per manhole connected).

## **Connection Fees**

All new development and major renovation projects in the City are required to install separated sanitary and storm sewer service connections on private property and pay connection fees for the corresponding connections on City property. These fees are updated regularly to ensure cost recovery.

The connection fees are based on an average price model, and the underlying complexities can vary by job. The number of complex connections has also increased, putting pressure on the average cost. In an effort to ensure fees are appropriate, a comprehensive review of fees for the connections program was done in 2016 and fees were adjusted during the year. For further discussion of this trend, refer to the 2017 Engineering Fees (RTS 11629). A subsequent review was performed on pavement restoration fees and staff are recommending that fees are updated to ensure continued cost recovery. Pavement restoration is a key component to providing sewer service connections.

It is recommended that a 2.0-3.2% increase for flat rate connection and removal fees be approved. This increase is required to cover annual inflationary increases as well as additional costs for pavement restoration to maintain full cost recovery.

## ***Legal Implications***

The Sewer and Watercourse By-law annual rate changes are contained in Appendix A.

In addition to the annual rate and fee changes, this report recommends environmental administrative updates to align terminologies between provincial legislation and the Sewer and Watercourse By-law.

## **CONCLUSION**

Rates for sewer services are adjusted annually to offset cost increases in the sewer utility, including operating and debt costs and the Metro (GVS&DD) levy. Based on a review of the proposed sewer costs for 2017, it is recommended that flat and metered sewer fees be increased by 11.3% and service and connection fees be increased by 2.0-3.2%.

\* \* \* \* \*

Appendix A  
Sewer & Watercourse By-law No. 8093  
2017 Rate Changes

**Schedule A**

**Part I: Sewer Connection Flat Rates**

	Proposed		% Increase
	2016	2017	
1. Public Sewer Connection, for One-Family or Two-Family Dwellings (including 3 inch/75 mm diameter and greater pressure connections)	\$10,302	\$10,597	2.9%
2. Public Sewer Connection, other than One-Family or Two-Family Dwellings			3.2%
a) 4 inch/100 mm diameter	\$14,079	\$14,530	3.2%
b) 6 inch/150 mm diameter	\$16,994	\$17,538	3.2%
c) 8 inch/200 mm diameter	\$19,225	\$19,840	3.2%
d) 10 inch/250 mm diameter	\$22,177	\$22,887	3.2%
e) 12 inch/300 mm diameter	\$25,200	\$26,006	3.2%
f) 15 inch/375 mm diameter	\$28,180	\$29,082	3.2%
g) Connection to building sewer where installation cost is greater than 1.5 times the applicable flat rate connection fee set out in this Schedule	At Cost pursuant to Sentence 2.7 (2)		
h) Manhole installation in conjunction with a public sewer connection pursuant to Sentence 2.7 (3) of Sewer and Watercourse By-law	At Cost pursuant to Sentence 2.7 (3)		
3. Where a public sewer connection will be placed more than 5 feet below the ground elevation, taken to the nearest foot and measured at the centre line of the street or lane as determined by the City Engineer, the fees payable shall be an amount equivalent to an increase of 10%, for each additional foot below 5 feet, of the fee otherwise payable by section 1 or 2 above.			
4. New fitting on a twin sewer pursuant to Sentence 2.7 (4)	\$4,648	\$4,741	2.0%
5. New fitting on a single sewer pursuant to Sentence 2.7 (4)	\$2,049	\$2,090	2.0%
6. Inspection of a plumbing system, subsoil drainage pipes and a building sewer	\$293	\$299	2.0%

**Part III: Flat Rates for Unmetered Property**

	Proposed		% Increase
	2016	2017	
Single Family Dwelling	\$345	\$384	11.3%
Single Family Dwelling with Suite	\$466	\$519	11.3%
Single Family Dwelling with Laneway House	\$466	\$519	11.3%
Single Family Dwelling with Suite and Laneway House	\$588	\$654	11.3%
Strata Duplex (per dwelling unit)	\$234	\$260	11.3%
2 Services, 1 Lot	\$690	\$768	11.3%
3 Services, 1 Lot	\$1,034	\$1,151	11.3%
4 Services, 1 Lot	\$1,380	\$1,536	11.3%
Parking Lot/Garden	\$197	\$219	11.3%

**Part IV: Flat Rates for Other Property or Shut Off Water Service**

	Proposed		% Increase
	2016	2017	
Other Property	\$197	\$219	11.3%
Turned Off, 1 Service	\$197	\$219	11.3%
Turned Off, 2 Services	\$197	\$219	11.3%
Turned Off, 3 Services	\$197	\$219	11.3%

**Part V: Unit-Based Rates for Metered Property**

	Proposed		% Increase
	2016	2017	
Metered Property Rate	\$2.221	\$2.472	11.3%
Waste Discharge Permit User Rate	\$0.7235	\$0.8053	11.3%

**Part VI: Flat Rate for Specific Types of Discharges/Disposals**

	Proposed		% Increase
	2016	2017	
For the discharge of contaminated groundwater pursuant to Section 7.11 (per cubic metre)	\$1.01	\$1.12	11.3%
For the disposal of ship wastewater pursuant to Section 7.12 (per cubic metre)	\$1.01	\$1.12	11.3%
For discharges by Utilities pursuant to Section 7.13 (per manhole connected)	\$266	\$296	11.3%

BY-LAW NO. \_\_\_\_\_

**A By-law to amend  
Sewer and Watercourse By-law No. 8093  
regarding 2017 Fee Increases  
and contaminated water discharges**

THE COUNCIL OF THE CITY OF VANCOUVER, in public meeting, enacts as follows:

1. This By-law amends the indicated provisions of By-law No. 8093.

2. In section 1.2, Council:

(a) strikes out the definition of “contaminated water” and substitutes

““contaminated water” means water containing any substance in a concentration that:

- (a) injures or is capable of impairing the health or safety of a person or the environment;
- (b) injures or is capable of injuring property or any life form;
- (c) interferes with or is capable of interfering with the proper operation of a sewer, a sewage facility or storm drainage facility;
- (d) causes or is capable of causing material discomfort to a person;
- (e) damages or is capable of damaging the environment;
- (f) exceeds the numerical aquatic use standards in the Contaminated Sites Regulation of the Environmental Management Act;
- (g) exceeds aquatic life or aquatic life water quality standards contained in applicable protocols, policies or guidance issued by the British Columbia Ministry of the Environment; or
- (h) exceeds the Wastewater and Storm Water Discharge and Quality Standards in Section 3”; and

(b) adds the following definitions in alphabetical order:

““contaminated site” means an area of land in which the soil or underlying groundwater or sediment contains a hazardous waste or prescribed substance in any quantities or concentrations exceeding provincial risk based or numerical criteria, standards, or conditions.

““hazardous waste” means hazardous waste as defined in the Hazardous Waste Regulation of the Environmental Management Act.

“prescribed substance” means a substance with a remediation standard prescribed in the Contaminated Sites Regulation of the Environmental Management Act.”

3. In Section 3.2.(2), Council strikes out subsection (m) and substitutes:  
“(m) contaminated water or wastewater unless otherwise permitted by the inspector in writing.”
4. In Section 3.3, Council strikes out subsection (g) and substitutes:  
“(g) any hazardous waste.”
5. In Section 3.4, Council strikes out subsection (1) and substitutes:  
“(1) A person who accidentally discharges any prohibited substances listed in Section 3.3, into a public or private sewerage system, storm drainage system or watercourse must immediately report the incident to the Inspector or City Engineer.”
6. In Section 5.1, Council:
  - (a) strikes out subsection (6) and (7) and substitutes:  
“(6) The Inspector or the Fire Chief may require one or more groundwater monitoring wells to be installed in the vicinity of all underground tanks.”; and
  - (b) re-number subsection (8) as (7).
7. Council strikes out Section 7.11 and substitutes:  
**“7.11 CONTAMINATED GROUNDWATER DISCHARGE RATES**  
  
Where contaminated groundwater is required to be discharged into a sanitary system or a combined sewer, the site owner must first obtain a Waste Discharge Permit and pay to the City the applicable rate set out in Part VI of Schedule A to this By-law for the volume discharged.”
8. Council repeals Parts I, III, IV, V, and VI of Schedule A to the Sewer and Watercourse By-law, and substitutes:

“PART I

SEWER CONNECTION RATES

Every applicant for a public sewer connection must, at the time of application, pay to the City the following rates:

1.	Public sewer connection, for One-Family or Two-Family Dwellings with or without a Laneway House (including 3 inch/75mm and greater pressure connections)	\$ 10,597.00
2.	Public sewer connection, other than One-Family or Two-Family Dwellings	
	a) 4 inch/100 mm diameter	\$14,530.00
	b) 6 inch/150 mm diameter	\$17,538.00
	c) 8 inch/200 mm diameter	\$19,840.00
	d) 10 inch/250 mm diameter	\$22,887.00
	e) 12 inch/300 mm diameter	\$26,006.00
	f) 15 inch/375 mm diameter or greater	\$29,082.00
	g) connection to building sewer where installation cost is greater than 1.5 times the applicable flat rate connection fee set out in this Schedule	At cost, pursuant to Section 2.7(2)
	h) manhole installation in conjunction with a public sewer connection, pursuant to Sentence 2.7(3) of Sewer and Watercourse By-law	At cost, pursuant to Section 2.7(3)
3.	Where a public sewer connection will be placed more than 5 feet below the ground elevation, taken to the nearest foot and measured at the centre line of the street or lane, as determined by the City Engineer, the fees payable shall be an amount equivalent to an increase of 10%, for each additional foot below 5 feet, of the fee otherwise payable by section 1 or 2 above	
4.	New fitting on a twin sewer pursuant to Sentence 2.7(4)	\$4,741.00
5.	New fitting on a single sewer pursuant to Sentence 2.7(4)	\$2,090.00
6.	Inspection of a plumbing system, subsoil drainage pipes, and a building sewer	\$299.00



**PART III**  
**FLAT RATES**  
**FOR UNMETERED PROPERTY**

Single Family Dwelling	\$384.00
Single Family Dwelling with Suite	\$519.00
Single Family Dwelling with Laneway House	\$519.00
Single Family Dwelling with Suite and Laneway House	\$654.00
Strata Duplex (per dwelling unit)	\$260.00
2 Services, 1 Lot	\$768.00
3 Services, 1 Lot	\$1,151.00
4 Services, 1 Lot	\$1,536.00
Parking Lot/Garden	\$219.00

**PART IV**  
**FLAT RATES FOR OTHER PROPERTY**  
**OR SHUT OFF WATER SERVICE**

Other Property	\$219.00
Turned Off, 1 Service	\$219.00
Turned Off, 2 Services	\$219.00
Turned Off, 3 Services	\$219.00

**PART V**

**UNIT-BASED RATES FOR METERED PROPERTY**

Metered Property Rate	\$2.472
Waste Discharge Permit User Rate	\$0.8053

**PART VI**

**FLAT RATE FOR SPECIFIC TYPES  
OF DISCHARGES/DISPOSALS**

For the discharge of contaminated groundwater, pursuant to Section 7.11 (per cubic metre)	\$1.12
For the disposal of ship wastewater, pursuant to Section 7.12 (per cubic metre)	\$1.12
For discharges by Utilities, pursuant to Section 7.13 (per manhole connected)	\$296.00

9. A decision by a court that any part of this By-law is illegal, void, or unenforceable severs that part from this By-law, and is not to affect the balance of this By-law.

10. This By-law is to come into force and take effect on January 1, 2017.

ENACTED by Council this \_\_\_\_\_ day of \_\_\_\_\_, 2016

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
City Clerk

**EXPLANATION**

**Sewer and Watercourse By-law  
Amending by-law regarding 2017 fees**

Enactment of the attached By-law will implement Council's resolution of December 7, 2016, respecting new sewer and watercourse rates, and fees to be effective from January 1, 2017.

Director of Legal Services  
December 13, 2016