



REPORT

Report Date: October 31, 2022
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Meeting Date: November 29, 2022
[Submit comments to Council](#)

TO: Vancouver City Council
FROM: General Manager of Engineering Services
SUBJECT: 2023 Annual Review of Sewer Rates – Sewer and Watercourse By-law

RECOMMENDATION

- A. THAT Council approve, in principle, the proposed amendments to the Sewer & Watercourse By-law, generally as set out in this report and in Appendix A, including the establishment of the 2023 rates and fees.
- B. THAT Council instruct the Director of Legal Services to bring forward for enactment the necessary Sewer and Watercourse By-law amendments, generally as set out in Appendix B.

REPORT SUMMARY

This report seeks Council approval of the recommended 2023 Sewer Utility customer rates, which incorporates a 15.0% increase over 2022. This increase enables the City to continue to provide functional and reliable sewer and drainage services that protect public health, the environment and property.

Costs to the Sewer Utility include a regional levy paid to Metro Vancouver for sewage conveyance and treatment, as well as the City's capital and operating costs to plan, renew, and maintain the sewer system. The proposed annual sewer rate increase is driven by accelerating annual Metro Vancouver sewer levy increases that include funding for Phase 1 of the Iona Wastewater Treatment Plant Upgrades (estimated at \$9.9 billion as of March 2022¹). As well, the annual sewer rate increase is driven by the City's capital costs aimed at accelerating the pace of investment in renewal of the aging sewer system, combined sewer overflow mitigation, and flood prevention, per the 2023-2026 Capital Plan.

¹ Greater Vancouver Sewerage and Drainage District, Board of Directors Meeting Minutes, March 25, 2022 - http://www.metrovancouver.org/boards/GVSDD/SDD_2022-Mar-25_MIN.pdf

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

COUNCIL AUTHORITY/PREVIOUS DECISIONS

Sewer user 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 sewer services to fund the operating portion of the 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 (2) years and was complete in 2010. Currently, only the allocated costs for the storm system costs are funded by property taxes.

In May 2020, Council directed staff to develop a comprehensive sewage and rainwater management plan (now called the "Healthy Waters Plan") to guide the long-range infrastructure investments, policies, programs and partner collaboration.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager recommends the foregoing.

REPORT

Background/Context

The City of Vancouver's sewer system provides essential and reliable sewer and drainage services that protect public health, the environment, and property through the collection, conveyance, management, and treatment of sanitary water and rainwater.

The City's sewer system has a replacement value of approximately \$6.1 billion and consists of 2,140 km of sewer mains, 93,000 service connections, 41,799 catch basins and 24 pump stations, which work together to convey sanitary flow (wastewater from homes and businesses) and storm water (surface run-off from private and public property and groundwater) to regional treatment facilities operated by Metro Vancouver.

The main costs of running the system include the capital costs for renewing the system and separating combined sewers, the costs to operate and maintain the system, and the cost of conveyance and treatment of liquid waste by Metro Vancouver. The rates cover the costs associated with the sanitary sewer system, while the drainage system is funded through property taxes.

Strategic Analysis

The City's sewer infrastructure was built over a period of 100+ years, and is deteriorating at a more rapid rate than sewer renewal investments can keep up, resulting in a growing inventory of sewer assets in poor and very poor condition. The increasing gap between

deterioration and renewal rates increases sewer back-up and flooding risk, financial, environmental regulatory compliance, and public health risks to the City and the community. Specifically, over the coming 30 years, a larger portion of the City's sewer system will be reaching end of useful life requiring increased investments in renewal. Additionally, population growth and climate change are resulting in increased sewer flows which may necessitate the need for sewer upgrades prior to the end of an asset's useful life.

These increased demands result in significant costs to the City, and require integrated planning, data-driven analysis, collaborative decision making that balances risk and levels of service. Several longer-term strategy direction documents including the Rain City Strategy, the Healthy Waters Plan, the Vancouver Plan, and Asset Management Plans will assist the City in strategically optimizing investments and interventions to balance affordability, sustainability, and desired service level outcomes.

Staff recommends that Sewer Utility user rates be increased by 15.0% and connection fees be increased by 10.0% over 2022 rates. This increase is part of a multi-year funding strategy that takes into account the City's and the region's near-term and medium-term capital investments, and aims to achieve a sustainable level of funding to meet the imperatives associated with the reliable and resilient operations of an integrated sewer and drainage system in the City. Please reference to Appendix C for more details on the City's Sewer System and Long-Term Strategy.

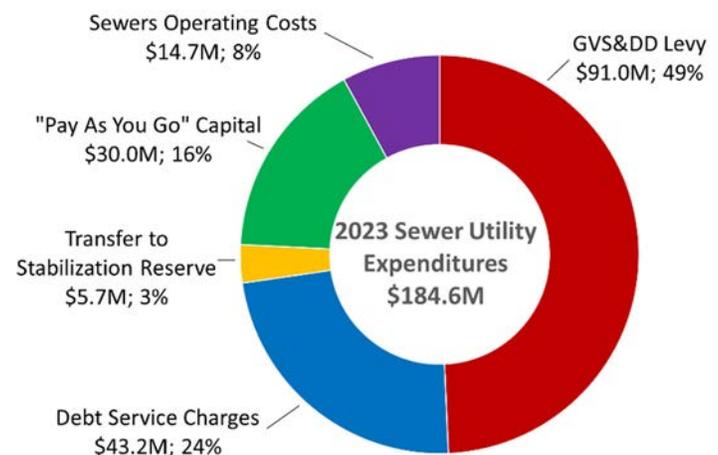
Financial Implications

Key Cost Drivers

Sewer Utility expenditures consist of four key cost drivers, shown in Figure 1:

- The Greater Vancouver Sewerage and Drainage District (GVS&DD) levy (49%)
- Capital expenditures and debt (40%),
- City of Vancouver operating and maintenance costs (8%)
- Transfers to or from the stabilization reserve (about 3%).

Figure 1 – Sewer Utility Expenditures



GVS&DD Levy

The Greater Vancouver Sewerage and Drainage District (GVS&DD), part of Metro Vancouver, imposes an annual levy on each of its member municipalities to cover the cost of implementing and operating of regional collection systems 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. Levy increases in the coming five years are needed for the upcoming upgrades to the Metro Vancouver Iona Island Wastewater Treatment Plant. The current year levy, which also covers the operating and capital costs of the regional collection system, will increase by 6.6% in 2023, with substantially higher increases anticipated in the following four years.

Sewer Capital Program

The sewer capital program comprises the City's pipe system renewal and upgrades, pump station program renewal and upgrades, and the service connections program. The sewer capital program has historically been funded through debentures. In 2015, the City instituted a small 'pay-as-you-go' contribution towards capital expenditures on the sanitary sewer system. 'Pay-as-you-go' uses current year revenues to fund current year and ongoing capital investments, ensuring the City's borrowing capacity is preserved for important one-time capital investments that are not appropriate for or too costly to be funded on a 'pay-as-you-go' basis.

This 'pay-as-you-go' contribution was \$20.1 million in 2022, and the plan for 2023 is to increase this contribution by a further \$9.9 million to \$30.0 million. This is needed in order to help fund the capital work associated with the 2023-2026 Capital Plan to achieve our targeted rate of system renewal of 0.8% by the end of this capital plan.

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.

2023 Proposed Budget and Rates

Sewer utility rates are proposed to increase by 15.0% or \$98 per year for a single-family residence. This increase is necessary due to:

- Increase in funding for sewer capital projects related to the approved 2023-2026 Capital Plan to achieve a targeted rate of renewal of 0.8% by the end of the current capital plan. The objective is to progressively increase investments into the future to achieve an asset renewal rate of 1-1.5%, to allow the City to keep up with the rate of deterioration of aging infrastructure and meet regulatory obligations.
- A 6.6% increase in the Metro Vancouver levy, which includes costs for the planned upgrades to secondary treatment at Iona Island Wastewater Treatment Plant. The Iona Island plant must be upgraded to secondary treatment by no later than 2030 to meet regulatory requirements. Per Metro Vancouver, the upgrade with tertiary treatment is anticipated to be completed by 2034 at a cost of approximately \$9.9 billion, including contingency and risk reserve. Preparatory work has already begun.
- An increased transfer to the Sewer Stabilization Reserve to help mitigate future rate increases as a result of higher future Metro Levy due to upgrades at the Iona Island wastewater treatment plant.

The Draft 2023 budget is summarized in Table 1 with the restated 2022 budget for comparison.

Table 1 – Draft 2023 Budget

Sewer Utility (\$ millions)	2022 Budget	2023 Proposed	\$ Change from 2022 Budget	% Change
Water Consumption Volume	112,000,000	111,500,000		
Revenues				
General Tax Levy	\$ 48.0	\$ 49.4	\$ 1.3	2.8%
Metered Rate Revenues	67.8	77.6	9.8	14.5%
Flat Rate Revenues	48.2	54.6	6.4	13.4%
Industrial Waste Water Fees	1.1	1.1	0.0	2.0%
Other Revenues	1.8	1.9	0.1	6.8%
Total Revenues	\$ 166.9	\$ 184.6	\$ 17.7	10.6%
Expenses & Transfer				
GVS&DD Levy	\$ 85.3	\$ 91.0	\$ 5.6	6.6%
Sewers Operating Costs	14.4	14.7	0.3	2.3%
Debt Service Charges	46.3	43.2	(3.0)	-6.5%
Transfer to/(from) Stabilization Reserve	0.8	5.7	4.9	592.7%
"Pay as you Go" Capital	20.1	30.0	9.9	49.2%
Total Expenditures & Transfers	\$ 166.9	\$ 184.6	\$ 17.7	10.6%
Surplus/(Deficit)	\$ -	\$ -	\$ -	0.0%

*Tables may not sum due to rounding.

2023 Revenues & Proposed Rates

The proposed rate increase for both flat and metered sewer utility customers is 15.0% in 2023, which results in a net increase of \$16.3 million to revenues.

Prior to 2012, all single-family dwellings and duplexes paid a flat annual rate for sanitary services. Since January 1, 2012, all new single-family homes and duplexes are metered and no longer pay the flat rate. Approximately 1,000 homes per year are moving to a metered account through redevelopment activity. Although the rates are increasing by 15.0%, the total flat revenue is increasing by 14.0% due to a decrease in the number of flat rate accounts.

The \$1.3 million increase in the General Tax Levy represents the cost of the storm water component of the sewer system which is calculated to be about 37% of the total expenses and transfers. This funding assumes a continuation of the current state budget which reflects a 5% property tax increase. If the approved budget differs from this amount, adjustments will need to be made to the storm water component of the operating budget.

2023 Expenditures & Transfers

The 2023 budget for Metro Vancouver charges will increase by 6.6% over the 2022 budget. While this levy includes Greater Vancouver Sewerage and Drainage District (GVS&DD) capital costs, the 2023 increase is primarily driven by increased Metro Vancouver costs at the Iona Island Wastewater Treatment Plant, including expense of site preparation for secondary treatment. The increase in City operations costs are account for merit and pay increases along with new positions to support approved work in the capital plan.

In 2023, City staff recommends a \$9.9 million increase in the ‘pay-as-you-go’ contribution from \$20.1 million to \$30.0 million to help fund the approved projects in the 2023-2026 Capital Plan. Debt charges (interest and principal combined) will decrease by \$3.0 million or 6.5%. Staff proposes to transfer \$5.7 million to the Sewer Stabilization Reserve in 2023 to provide rate stabilization to mitigate what would otherwise be a higher year-over-year rate increase in future years based on the projected Metro Vancouver rate increases over the next five years.

Five Year Outlook

Table 2 summarizes the five year outlook for the Sewer Utility at this time. These rates are reviewed every year and updated as needed. The City rates seek to achieve more consistent and predictable rate increases over time for ratepayers, whereas Metro rates do not, which is appropriate because it leaves the individual Metro municipalities the flexibility to apply consistent rates appropriate to their particular community’s context.

Table 2 – Sewer Utility Rate Outlook 2023-2027

Sewer Utility Rate Forecasts	2023	2024	2025	2026	2027
Metro Rate Increase	6.6%	23.9%	25.4%	18.0%	11.7%
Proposed City Rate Increase	15.0%	15.0%	15.0%	15.0%	15.0%

Related Fees

These include discharge of contaminated groundwater, ship wastewater and discharges by third-party utilities. A 15.0% increase in rates for these specific types of disposal is proposed.

Connection Fees

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

To address the significant increases in construction costs incurred, a 10.0% increase is recommended for approval for Sewer flat rate connections and for inspections.

Legal Implications

The Sewer and Watercourse By-law annual rate changes and miscellaneous amendments are contained in Appendix B.

CONCLUSION

Rates for sewer services are adjusted annually to offset cost increases in the sewer utility, including operating and debt costs and the Metro Vancouver (GVS&DD) levy. Based on a review of the proposed sewer costs for 2023, it is recommended that flat unmetered, metered sewer fees and all other service and connection fees be increased by 15.0%, and that sewer connection fees be increased by 10.0%.

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Appendix A
Sewer & Watercourse By-law No. 8093
2023 Rate Changes

Schedule A

Part I: Sewer Connection Flat Rates

	2022	2023	Increase
1. Public Sewer Connection, for One-Family or Two-Family Dwellings (including 3 inch/75 mm diam and greater pressure connections)	\$12,628	\$13,891	10.0%
2. Public Sewer Connection, other than One-Family or Two-Family Dwellings			
a) 4 inch/100 mm diameter	\$18,431	\$20,340	10.0%
b) 6 inch/150 mm diameter	\$22,318	\$24,550	10.0%
c) 8 inch/200 mm diameter	\$25,248	\$27,773	10.0%
d) 10 inch/250 mm diameter	\$29,125	\$32,038	10.0%
e) 12 inch/300 mm diameter	\$33,094	\$36,403	10.0%
f) 15 inch/375 mm diameter	\$37,009	\$40,710	10.0%
g) Connection to building sewer where installation cost is greater than 1.5 times the applicable flat rate			At Cost pursuant to Sentence 2.7 (2)
h) Maintenance hole 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)	\$5,650	\$6,215	10.0%
5. New fitting on a single sewer pursuant to Sentence 2.7 (4)	\$2,431	\$2,740	10.0%
6. Inspection of a plumbing system, subsoil drainage pipes and a building sewer	\$342	\$376	10.0%

Part III: Flat Rates for Unmetered Property

	2022	2023	Increase
Single Family Dwelling	\$653	\$751	15.0%
Single Family Dwelling with Suite	\$882	\$1,014	15.0%
Single Family Dwelling with Laneway House	\$882	\$1,014	15.0%
Single Family Dwelling with Suite and Laneway House	\$1,110	\$1,277	15.0%
Strata Duplex (per dwelling unit)	\$442	\$508	15.0%
2 Services, 1 Lot	\$1,305	\$1,501	15.0%
3 Services, 1 Lot	\$1,956	\$2,249	15.0%
4 Services, 1 Lot	\$2,610	\$3,002	15.0%
Parking Lot/Garden	\$373	\$429	15.0%

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

	2022	2023	Increase
Other Property	\$295	\$339	15.0%
Turned Off, 1 Service	\$295	\$339	15.0%
Turned Off, 2 Services	\$295	\$339	15.0%
Turned Off, 3 Services	\$295	\$339	15.0%

Part V: Unit-Based Rates for Metered Property

	2022	2023	Increase
Metered Property Rate	\$4,201	\$4,831	15.0%
Waste Discharge Permit User Rate	\$1,383	\$1,591	15.0%

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

	2022	2023	Increase
For the discharge of contaminated groundwater pursuant to Section 7.11 (per cubic metre)	\$1.51	\$1.74	15.0%
For the disposal of ship wastewater pursuant to Section 7.12 (per cubic metre)	\$1.51	\$1.74	15.0%
For discharges by Utilities pursuant to Section 7.13 (per maintenance hole connected)	\$398	\$458	15.0%

BY-LAW NO. _____

**DRAFT By-law to amend Sewer and Watercourse By-law No. 8093
regarding 2023 fee increases and miscellaneous amendments**

Note: A By-law will be prepared generally in accordance with the provisions listed below, subject to change and refinement prior to posting.

1. This By-law amends the indicated provisions of By-law No. 8093.
2. 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 pay to the City the applicable sewer connection rates set out below, payable as follows:

- (a) an application fee of 10% of the applicable rates set out below in sections 1, 2(a) through (f), and 6, at the time of application, and
- (b) the remaining amount when invoiced by the City, prior to permit issuance.

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)	\$13,891.00
2.	Public sewer connection, other than One-Family or Two-Family Dwellings	
	a) 4 inch/100 mm diameter	\$20,340.00
	b) 6 inch/150 mm diameter	\$24,550.00
	c) 8 inch/200 mm diameter	\$27,773.00
	d) 10 inch/250 mm diameter	\$32,038.00
	e) 12 inch/300 mm diameter	\$36,403.00
	f) 15 inch/375 mm diameter or greater	\$40,710.00
	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)	maintenance hole 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)	\$6,215.00
5.		New fitting on a single sewer pursuant to Sentence 2.7(4)	\$2,740.00
6.		Inspection of a plumbing system, subsoil drainage pipes, and a building sewer	\$376.00

PART III
FLAT RATES
FOR UNMETERED PROPERTY

Single Family Dwelling	\$751.00
Single Family Dwelling with Suite	\$1,014.00
Single Family Dwelling with Laneway House	\$1,014.00
Single Family Dwelling with Suite and Laneway House	\$1,277.00
Strata Duplex (per dwelling unit)	\$508.00
2 Services, 1 Lot	\$1,501.00
3 Services, 1 Lot	\$2,249.00
4 Services, 1 Lot	\$3,002.00
Parking Lot/Garden	\$429.00

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

Other Property	\$339.00
Turned Off, 1 Service	\$339.00
Turned Off, 2 Services	\$339.00
Turned Off, 3 Services	\$339.00

PART V
UNIT-BASED RATES FOR METERED PROPERTY

Metered Property Rate	\$4.831
Waste Discharge Permit User Rate	\$1.591

City of Vancouver's Sewer System and Long-Term Strategy

The City of Vancouver's sewer system was originally built to convey both sanitary water and rainwater through a single pipe (a "combined system"). In a combined system, during periods of rainfall the system can become overwhelmed and Combined Sewer Overflows (CSOs) can occur in which untreated flows discharge into receiving waters. The City has been separating its combined sewers since the 1970s by replacing pipes at the end of their service life with storm and sanitary sewers. Through the incremental renewal of aging combined pipes, this sewer separation program seeks to fully eliminate CSOs by 2050 (as set out in the region's 2011 Integrated Liquid Waste and Resource Management Plan ("LWMP")). As of 2022, 56% ($\pm 1\%$) of all mainline sewers and 60% ($\pm 5\%$) of service connections are separated. An update to the LWMP is currently underway, which includes a review of the CSO elimination timeline as well as actions to reduce rainwater runoff pollution.

In some areas of the city, separation has progressed enough to allow the storm water to be discharged directly to a receiving water body (i.e., there is no sanitary sewage remaining in the storm system). Over recent decades, sewer separation work has resulted in significant improvements to water quality for west side swimming beaches and False Creek. Additionally, some storm flows are diverted away from the sewer system by green rainwater infrastructure which captures and/or treats the flow. The City's Rain City Strategy approved by City Council in 2019 guides the City's vision, goals, and actions associated with implementation of green rainwater infrastructure, as well as key transformative directions associated with holistic water management.

Building on the Rain City Strategy, Council directed staff in 2020 to develop the Healthy Waters Plan, a comprehensive city-wide plan to address pollution from CSOs and runoff while addressing impacts of climate change, population growth and aging infrastructure. A key driver for this work is to ensure sustained and affordable service delivery into the future.

Examples of current work underway and in parallel to the Healthy Waters Plan development include:

- Increasing the rate of sewer main renewal to keep up with deterioration of aging assets and support the separation of combined sewer system, prioritizing critical assets with a high consequence of failure;
- Strategically separating combined sewer systems and diverting rainwater and groundwater away from combined and sanitary systems in support of the elimination of Combined Sewer Overflows by 2050, including the installation of green rainwater infrastructure;
- Establishing watershed planning as a foundation to city planning and advancing the City's understanding of utility/servicing and climate risk, in order to right-size the service levels and investments to match acceptable risk levels;
- Implementing a One Water approach to water resources management (potable, groundwater, rainwater, wastewater, flood protection); and
- Seeking to embed equity and reconciliation with Indigenous communities into planning, decision-making, and implementation.