



REPORT

Report Date: November 9, 2021
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Meeting Date: December 1, 2021
[Submit comments to Council](#)

TO: Vancouver City Council
FROM: General Manager of Engineering Services
SUBJECT: 2022 Annual Review of Water Rates and Water Works By-law Amendments

RECOMMENDATION

- A. THAT Council approve, in principle, the 2022 rates and fees under the Water Works By-law, with the following recommended increases: 2.0% increase in the per unit flat fee for Single Dwelling (from \$793 per unit in 2021 to \$810 per unit in 2022); 2.0% increase in per unit Metered Rate in off season (from \$3.462 in 2021 to \$3.532 in 2022) and peak season (from \$4.339 in 2021 to \$4.427 in 2022); 2.3% increase for Water Flat Rate Connection Fees for Single and Two Family dwellings; 2.3% for all other Water Flat Rate Connection Fees (as listed in Appendix A, Schedule A); and varied changes for all other Water Utility User Rates (as listed in Appendix A, Schedules B, C, E, F, G and H), as well as other miscellaneous amendments.
- B. THAT Council instruct the Director of Legal Services to bring forward for enactment the necessary amendments to the Water Works By-law, generally as set out in Appendix B.

REPORT SUMMARY

Each year, staff review all costs related to the Water Utility and recommend rates for the year to come. This is also an opportunity for staff to provide an update to Council and the public on the objectives of the Utility and what progress has been made towards those objectives.

In this report are updates on 2021 overall performance and some specific initiatives already underway such as seismic improvements, conservation efforts, and the pay-as-you-go strategy for capital funding. Also, included in this report is a look ahead to work planned in 2022.

This report seeks Council approval of the recommended 2022 rates and fees for water service, which incorporates a 2.0% increase for single family flat rates and consumption driven metered rates; 2.3% increase for Water Flat Rate Connection Fees for Single and Two Family dwellings; 2.3% for all other Water Flat Rate Connection Fees; and varied changes for all other Water Utility User Rates. These increases support full cost recovery for water services as well as investing in a program that will reduce future financing costs. This report also seeks Council approval of various miscellaneous amendments to update language and to clarify certain provisions for water consumption fee adjustments, and to streamline fee collection for backflow prevention assembly tests.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

Water rates for both metered and non-metered customers are specified in the Schedules of Rates and Charges included in the Water Works By-law. These schedules are updated annually by Council.

On December 13, 2011, Council adopted the 2011-2014 Greenest City Clean Water Work Plan including By-law revisions requiring residential water metering for all new single family and duplex properties.

On December 13, 2011, Council approved transition from a uniform volumetric rate for commercial and residential metered customers to a seasonal rate consisting of two different rates for low and high seasons.

On November 27, 2012, Council approved the establishment of a peak and off-peak seasonal rate structure for all remaining metered properties.

On November 27, 2012, Council approved By-law revisions that changed billing frequency to 3 reads and 3 bills per year to better align with seasonal rates.

On November 4, 2015, Council adopted the 2016-2020 Greenest City Clean Water Work Plan to expand water conservation programs.

On November 1, 2017, Council adopted the recommendation to broaden the water conservation program to include non-potable water resources (rain water, ground water, and waste water) and to review the metering policy and metering implementation options to address long term water demands.

On December 10, 2019, Council adopted the recommendation to change the dates that set the peak season and off peak season water rates, to match the water restriction periods set out in the Drinking Water Conservation By-law

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The City Manager supports recommendations A and B above.

REPORT

Background/Context

The City's drinking water system is comprised of approximately 1,476 km of water mains that distribute water to more than 101,000 service connections and 6,600 fire hydrants. All water supplied to the City is purchased from Metro Vancouver, which is responsible for supply reservoirs, treatment, and delivery of water to the City system.

The capital cost for timely replacement of these assets and expansion to accommodate growth, the operating costs of maintaining the system and the cost to purchase water from Metro Vancouver make up the total costs of the water system. The City's water rates and fees are set based on a principle of full cost recovery, which requires that no costs related to the delivery of water are included in the general tax levy. In the City of Vancouver, all sectors are fully metered except for single and dual family homes.

In 2012, Council implemented the policy to achieve a fully metered water system over time by requiring meters for all new single-family and duplex properties undergoing redevelopment or major renovations. As of 2021, approximately 12% or 9,800 of single-family and duplex properties are metered.

Strategic Analysis

The Water Utility has a mandate to provide clean, safe drinking water, to use potable water efficiently to extend the life of our current water supplies, to ensure continued availability for consumption and fire suppression, and to ensure we are prepared for emergencies.

As part of the strategic asset management approach, the City has refined the asset condition methodology for water system assets, based on system performance analytics and industry benchmarks. Currently, 22% of the Waterworks assets have a poor overall condition rating (of which 3-5% are in very poor condition) while the remaining 78% are in fair-to-good condition. Additional investments will reduce the rate of deterioration; however, in the next 10 years, the condition will deteriorate to 24% poor, (with a goal of <5% in very poor condition). This worsening condition is expected to be further exacerbated by climate change. As the assets increasingly deteriorate, it is expected there will be higher rates of water main breaks and leaks. To counter this increase in failures, the average renewal rate of aging assets is being increased from 0.5% annually to 0.7% during the 2019-2022 Capital Plan, which will result in additional lengths of pipe being replaced year over year. Maintenance activities will also need to increase to maintain aging components such as valves and hydrants.

The water distribution network, valued at \$3.1 billion, is made of 1,476 km of buried pipelines, 101,000 service connections, approximately 6,600 fire hydrants, 30,000 valves, and 22,000 water meters. The system is carefully managed using an asset management process.

The Water Utility also operates a dedicated fire protection system for the Downtown, Kitsilano and Fairview areas valued at \$80 million consisting of 12 km of dedicated high pressure pipes and 2 pumping stations. In an emergency, salt water from Burrard Inlet and False Creek can be used to provide fire protection, if the potable water supply is interrupted.

Key services delivered

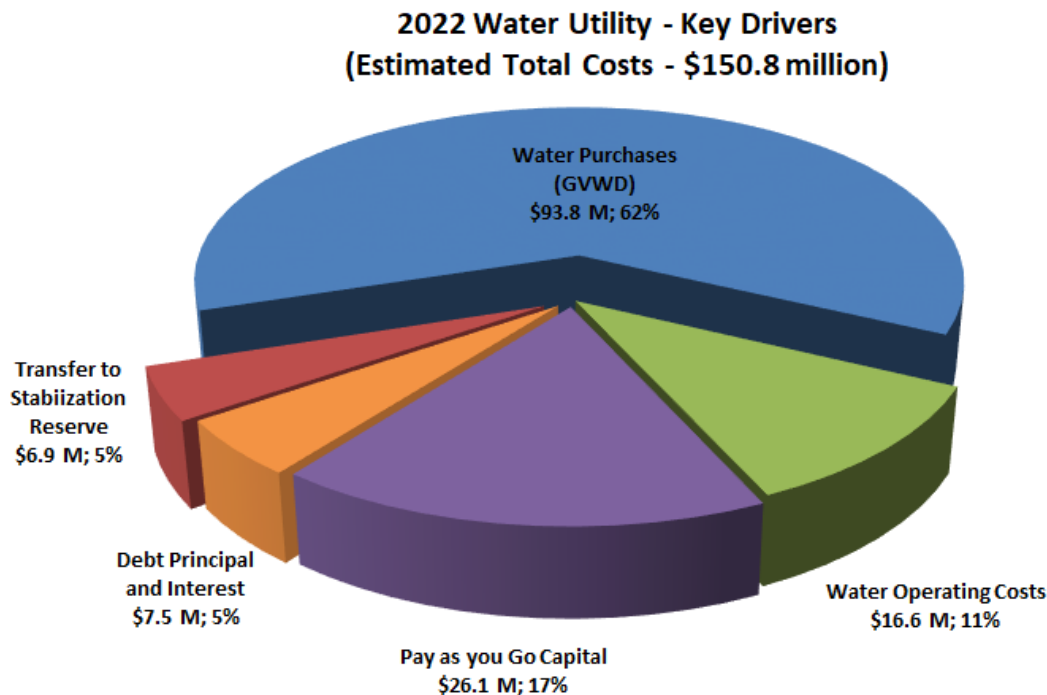
- **Water distribution service** - Providing clean water to businesses, residents and communities and serving growth. Ensuring that water system assets are in good condition and well managed by replacing aging and deteriorating infrastructure.
- **Emergency preparedness** – Supporting emergency preparedness through response planning and increasing resiliency by strategically strengthening infrastructure, and providing access to water points within the public realm to support vulnerable populations.
- **Water conservation and resource management** – Enabling the efficient use of drinking water corporately and in the community to support financial and environmental sustainability and equity, and to extend the life of our current water supplies.

Financial Implications

Key Cost Drivers

The Water Utility expenditures consist of four (4) key cost drivers: water purchased from Metro Vancouver which makes up 62% of the budget, costs associated with capital expenditures which make up about 22% of the budget, City of Vancouver's operating costs which make up about 11% of the total budget, and transfers to or from the stabilization reserve which make up the remaining, as shown graphically in Figure 1 below. A description of each component and its related activities follows.

Figure 1 – Water Utility Costs



Water Purchases

The City of Vancouver and other Lower Mainland municipalities purchase water from Metro Vancouver based on consumption. The cost to purchase water is the largest cost driver in the

Water Utility. The cost of water to the City of Vancouver is driven by the price per cubic metre that Metro charges all member municipalities, as well as the consumption within the City itself. Significant increases to the regional cost of water since 2004 were the result of regional capital water quality initiatives - primarily the Seymour-Capilano Filtration Plant and the associated twin tunnel project between Capilano and Seymour Lakes. These initiatives have resulted in greatly improved water quality in the region.

The success of water conservation and efficiency in the city has led to a trend of declining water consumption. Since most of the costs associated with the delivery of water are fixed costs, over time there will be an upward trend in the price per unit of water due to regional system upgrades and capital improvements. Metro Vancouver recently completed a long-term water supply study that identified requirements for system resiliency and continued supply and delivery of water over the next 100 years. Metro Vancouver's Water Supply Outlook 2120 indicates the region will likely need additional water supply storage by the mid-2030s to avoid seasonal supply shortages. Metro Vancouver is currently in the planning phase of the Coquitlam Lake Water Supply Project that will double the capacity to withdraw water from Coquitlam Lake. Reducing consumption through water conservation efforts can help defer needed capacity expansion in the Metro system.

Capital Program

For the 2019-2022 Capital Plan, the water capital program will be fully funded on a pay-as-you-go basis. The current debt charges represent past borrowing, so the reduction of debt charges from moving to pay-as-you-go will be realized gradually.

Operating and Maintenance

These are the costs associated with cleaning, repairing, inspecting and managing the infrastructure, as well as, emergency response for main breaks, service connection leaks and other trouble calls. This also includes customer billing and general administration.

2021 Budget Performance

Table 2 summarizes the operating budget and current forecast for the Water Utility in 2021.

Table 2 – 2021 Budget Performance

Water Utility (\$ millions)	2021 Forecast	2021 Budget	\$ Variance	% Variance
Water Consumption Volume (m³)	110,058,022	112,000,000		
Revenues				
Metered Rate Revenues	\$ 78.7	\$ 80.3	\$ (1.7)	-2.1%
Flat Rate Revenues	59.4	59.6	(0.2)	-0.3%
Meter Service Charges	5.2	4.7	0.5	10.6%
Flat Rate Fire Line Charges	3.5	3.5	-	0.0%
Other Revenues	0.9	0.7	0.2	30.1%
Total Revenues	\$ 147.6	\$ 148.8	\$ (1.1)	-0.8%
Expenses & Transfers				
Water Purchases (GVWD)	\$ 88.9	\$ 90.8	\$ 1.9	2.1%
Waterworks Operations	15.3	\$ 15.9	0.5	3.4%
Debt Service Charges	10.3	\$ 10.3	-	0.0%
Pay As you Go Capital	31.3	\$ 31.3	-	0.0%
Transfer to/(from) Stabilization Reserve	1.8	\$ 0.5	(1.3)	-281.9%
Total Expenses & Transfers	\$ 147.6	\$ 148.8	\$ (1.1)	-0.8%
Surplus/(Deficit)	\$ -	\$ -	\$ -	0.0%

*Tables may not sum due to rounding. The purpose of this table is to explain budget performance. Additional revenue is reported as positive and additional expenditures as negative. 2021 Revenues

The current forecast for metered revenues is about \$1.7 million lower than budgeted. Metered revenues are estimated as a percentage of total water consumption, which is lower than budgeted this year due to slowdown in commercial and institutional activities as a result of the COVID-19 pandemic.

While the 2021 forecasted water consumption has been lower than the budgeted amount, there is a minor unfavorable variance in the revenue from the flat rate customers due to more than anticipated properties transitioning to metered accounts. Meter service charges, are slightly higher than anticipated due to an increase in the number of these accounts in recent years.

Other revenues include administrative fees for cross connection control, permit fees for high water use air conditioning units and various other cost recovery fees as set out in the Water Works By-law. These were slightly higher than budget in 2021.

2021 Expenditures & Transfers

As previously stated, the largest driver of expenses in the Water Utility is the purchase of treated, bulk drinking water from Metro Vancouver. This expense is also based on water consumption within the City, which is forecasted to be 3.0% lower than estimated in the 2021 budget due to slowdown in commercial and institutional activity resulting from the impacts of the COVID-19 pandemic, along with the success of continued water conservation and efficiency programs.

The Water Utility uses the Water Rates Stabilization Reserve to mitigate year-over-year increases in water rates and balance year-end differences between budgeted and actual revenues and expenditures.

In 2021, there was a budgeted transfer of \$0.5 million to the reserve; however, this year, \$1.7 million or an additional \$1.2 million is expected to be contributed to the reserve. This variance is due to lower than budgeted expenditures, partially offset by decrease in metered revenues.

2022 Proposed Budget and Rates

Water utility rates will increase by 2.0% or \$17 per year for a single-family residence. The utility rates have been kept relatively low in 2022 in order to provide financial relief to consumers in the wake of COVID-19 pandemic. However, the 2.0% increase is necessary due to:

- An increase of 4.1% in Metro Vancouver water rates that fund infrastructure improvements throughout the region, including improvements to reservoirs, treatment and transmission infrastructure to provide reliable, high-quality water.
- Funding for water capital projects within the approved 2019-2022 Capital Plan.

Forecasted water consumption is lower than budgeted in 2021 and the longer term trend demonstrates an overall reduction in per capita use. The per capital water consumption has been steadily decreasing, with a 24% reduction realized since 2006. This has allowed the total water purchases to remain relatively stable over this time, even with population growth and more extreme weather impacts. However, it is expected that water consumption volume for 2022 would be similar to 2021 Budget. The water consumption volume budget for 2022 has been set at 112,000,000 m³ and actual usage will be influenced by many factors including weather and the economic recovery from the impacts of the COVID-19 pandemic. The enhanced strategic water conservation activities and additional investment in water conservation programs planned over the next few years are expected to further contribute to the downward per capita consumption trend.

The Draft 2022 budget is summarized in Table 3 with the 2021 budget for comparison.

Table 3 – Draft 2022 Budget

Water Utility (\$ millions)	2021 Budget	2022 Proposed	\$ Change from 2021 Budget	% Change
Water Consumption Volume	112,000,000	112,000,000		
Revenues				
Metered Rate Revenues	\$ 80.3	\$ 82.0	\$ 1.7	2.1%
Flat Rate Revenues	59.6	59.8	0.2	0.3%
Meter Service Charges	4.7	4.8	0.1	2.3%
Flat Rate Fire Line Charges	3.5	3.5	0.1	2.3%
Other Revenues	0.7	0.7	0.0	2.2%
Total Revenues	\$ 148.8	\$ 150.8	\$ 2.1	1.4%
Expenses & Transfers				
Water Purchases (GVWD)	\$ 90.8	\$ 93.8	\$ 2.9	3.2%
Waterworks Operations	15.9	16.6	0.7	4.4%
Debt Service Charges	10.3	7.5	(2.9)	-27.9%
Pay As you Go Capital	31.3	26.1	(5.1)	-16.4%
Transfer to/(from) Stabilization Reserve	0.5	6.9	6.4	1372.5%
Total Expenses & Transfers	\$ 148.8	\$ 150.8	\$ 2.1	1.4%
Surplus/(Deficit)	\$ -	\$ -	\$ -	0.0%

* Tables may not sum due to rounding. The purpose of this table is to present year-over-year changes in the budget as presented in the 2021 Budget Book where both additional revenue and expenses are presented as positive changes

2022 Revenues & Proposed Rates

For both metered customers and flat-rate single-family dwellings, a 2.0% rate increase is recommended for 2022. Since 2012, all new single-family dwellings must be metered and no longer pay the flat rate. The 2022 budget for flat rate revenues reflects the 2.0% rate increase. As a result of these changes, water rates for single-family dwellings are projected to be \$810 versus \$793 in 2021. Also, recommended are inflationary increases of 2.3% for fire line charges and meter service charges. Both the revenue and expense changes for meter service charges and fire line charges reflect an increase in the number of accounts over the last several years.

2022 Expenditures & Transfers

The increase for the 2022 water purchase budget is \$2.9 million due to a Metro Vancouver price increase of 4.1%. Water Utility operational costs will increase by 4.4% from 2021 to 2022, primarily as a result of collective agreement increases.

In 2012, the Water Utility began funding a portion of its annual capital program on a pay-as-you-go basis; as a result, debt service charges are decreasing. The plan was to increase the pay-as-you-go contribution each year until all new capital expenditures for the renewal of assets were covered through current revenues. Capital expenditures have been funded solely by pay-as-you-go funding since 2019; with no new debt being incurred, ultimately this will eliminate the debt interest expense. The pay-as-you-go contribution has decreased from \$31.3 million to \$26.1 million which represents the revised project schedule as per the 2019-2022 Capital Plan.

The current debt charges represent past borrowing and will continue to decrease over time as outstanding borrowing is gradually retired in upcoming years.

Staff proposes to transfer \$6.9 million to the Water Rates Stabilization Reserve in 2022 to mitigate against increases in Metro Vancouver water purchase price in future years.

Five Year Outlook

Table 4 summarizes the five (5) year outlook for the Water Utility and the following paragraphs discuss the assumptions used.

Water Utility (\$ millions)	2022	2023	2024	2025	2026
Assumptions:					
Water Consumption Volume	112,000,000	111,500,000	111,000,000	110,500,000	110,000,000
Metro Price Increase	4.1%	6.1%	10.7%	11.7%	11.5%
City Rate Increase	2.0%	7.0%	7.5%	8.0%	8.0%
Revenues					
Metered Rate Revenues	\$ 82.0	\$ 87.3	\$ 93.4	\$ 100.4	\$ 108.0
Flat Rate Revenues	59.8	63.1	66.9	71.1	75.7
Meter Service Charges	4.8	4.9	5.0	5.1	5.2
Flat Rate Fire Line Charges	3.5	3.6	3.7	3.8	3.9
Other Revenues	0.7	0.7	0.8	0.8	0.8
Total Revenues	150.8	159.7	169.7	181.2	193.6
Expenses					
Water Purchases (GVWD)	93.8	99.1	109.2	121.4	134.7
Waterworks Operations	16.6	17.0	17.3	17.7	18.2
Debt Service Charges	7.5	5.1	3.2	2.2	1.4
Pay As you Go Capital	26.1	35.0	40.0	45.0	50.0
Transfer to/(from) Stabilization Reserv	6.9	3.6	-	(5.1)	(10.7)
Total Expenses & Transfers	150.8	159.7	169.7	181.2	193.6
Surplus/(Deficit)	\$ -	\$ -	\$ -	\$ -	\$ -

**Tables may not sum due to rounding – some of the revenues are grouped in Cost recoveries, grants & donations and Other revenue in the budget book*

Table 4 assumes a gradual decreased purchase of bulk water over the coming years, due to ongoing conservation measures in place partially offset by population increase. This is a conservative approach for financial planning purposes, which will be reviewed annually as water consumption results are realized.

The Conference Board of Canada forecasted that the CPI for Metro Vancouver would increase between 2.0% and 2.3% from 2022 to 2025. However, the costs of the water utility, which are heavily influenced by Metro Vancouver levy increases and increased construction material costs, are expected to increase at levels above forecasted inflation in future years.

The price of water purchases from the GVWD (Metro Vancouver) is increasing 4.1% in 2022. The following four (4) years are forecasted to increase between 6.1% and 11.7%. Metro Vancouver has proposed lower rate increases for 2022-2023 with the objective of providing short-term financial relief to the residents. However, over the five-year period, the rates are

increasing based on projected operating and capital costs for supply reservoirs, treatment, and delivery of high quality water to the City.

Debt charges will continue to decrease due to the pay-as-you-go strategy which has resulted in reduced debenture borrowing since the program started in 2012. By increasing the pay-as-you-go contribution per year in the 2019-2022 Capital Plan, all new routine capital spending is expected to be funded on a pay-as-you-go basis, eliminating the need to borrow for ongoing capital programs.

While City operating costs are forecast to continue to increase by inflation over the next five years, staff will continue to look for ways to provide the same service at a lower cost.

An increase to the budget to repair main breaks and impacted roadways has been incorporated into the outlook. Since 2012, the rolling average of main breaks has increased by approximately 30%, reflecting an aging water system. This budget increase does not include unanticipated needs that may emerge as a result of a leaks or breaks beyond the anticipated trend. Pipe breaks tend to fluctuate year to year and are dependent on weather conditions, system pressures, ground conditions and pipe age. Single year anomalies could require an offset from reserve funding, whereas an increased trend beyond what is currently anticipated would require additional program funding.

Connection Fees and Miscellaneous Fees

All new development and major renovation projects in the City are required to install water connections on private property and pay connection fees for the corresponding connections on City property. Water meters are also required to be installed on all new and major renovation projects.

Connection fees are collected prior to the timing of the actual work and are based on an average price model and the underlying complexities can vary by job and by job type. Fee increases are required to cover annual inflationary increases for construction costs, as well as to account for the increases in material supply costs.

Private side meter installation fees require adjustments beyond inflation, in line with market increases in material costs that have also been experienced by various municipal supply sectors. To support full cost recovery, it is recommended that an increase of 10% be approved for some fees for Installation of Water Meters on Private Property.

Updates to the Cross Connection Control fee collection are proposed to support process efficiency, fairness and equity for customers, and to align with industry best practices and practices across the region. It is recommended that the Cross Connection Control Administration Fees be removed from Schedule H, with fees being remitted at the time of cross connection assembly testing to the City's vendor that supports the program.

To maintain full cost recovery, it is recommended that a 2.3% increase be approved for all Water Flat Rate Connection and Removal fees.

Water Consumption Fee Adjustments

There are miscellaneous amendments recommended to clarify language in By-law 4848 regarding how consumption is estimated for a metered property in the event that the meter reading cannot be relied upon for a period of time. Additional updates are proposed to clarify the

qualification for bill adjustment in the event of an underground leak on a private side service pipe. The updates proposed are to ensure clear, fair and equitable estimation of consumption and transparency regarding allowable bill adjustment conditions.

Legal

The proposed amendments to the Water Works By-law are contained in Appendix B, and a red-lined version of the miscellaneous amendments is provided in Appendix C.

CONCLUSION

Rates for water services are adjusted annually to offset cost increases in the water utility, including operating and debt costs and water purchases from Metro Vancouver. Based on a review of the proposed water costs for 2022, it is recommended that rates and fees for water service incorporate a 2.0% increase for single family flat rates and consumption driven metered rates; 2.3% increase for Water Flat Rate Connection Fees for Single and Two Family dwellings; 2.3% for all other Water Flat Rate Connection Fees; varied changes for all other Water Utility User Rates; miscellaneous amendments to update language and to clarify certain provisions for water consumption fee adjustments, and to streamline fee collection for backflow prevention assembly tests as described in this report.

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Appendix A
Water Works By-Law No. 4848
2022 Rate Changes

Schedule A		Flat Rate Connection Fees		
	2021	Proposed 2022	% Increase	
<u>Single-Family & Two-Family Dwellings</u>				
20 mm (3/4")	\$6,342	\$6,488	2.3%	
25 mm (1")	\$6,566	\$6,717	2.3%	
40 mm (1 1/2")	\$7,895	\$8,077	2.3%	
50 mm (2")	\$8,755	\$8,956	2.3%	
<u>Other Connections</u>				
20 mm (3/4")	\$10,648	\$10,893	2.3%	
25 mm (1")	\$11,078	\$11,333	2.3%	
40 mm (1 1/2")	\$12,784	\$13,078	2.3%	
50 mm (2")	\$12,784	\$13,078	2.3%	
100 mm (4")	\$18,482	\$18,907	2.3%	
150 mm (6")	\$22,860	\$23,386	2.3%	
200 mm (8")	\$24,963	\$25,537	2.3%	
300 mm (12")	\$35,132	\$35,940	2.3%	
Schedule A.1		Removal Fees		
	2021	Proposed 2022	% Increase	
20mm (3/4") to 50mm (2") inclusive	\$1,238	\$1,266	2.3%	
100mm (4") to 300mm (12") inclusive	\$3,715	\$3,800	2.3%	
Schedule B		Flat Service Charges for Residential Properties		
	2021	Proposed 2022	% Increase	
Single dwelling unit	\$793	\$810	2.0%	
Single-Family with suite or laneway house	\$1,076	\$1,098	2.0%	
Single-Family with suite and laneway house	\$1,359	\$1,387	2.0%	
For each strata title duplex	\$537	\$548	2.0%	
Parking Lot/Community Garden	\$243	\$248	2.0%	
Water Service - Turned Off	\$180	\$184	2.0%	
Other Property	\$180	\$184	2.0%	
Schedule C		Flat Service Charges for Unmetered Fire Service Pipes		
	2021	Proposed 2022	% Increase	
50 mm (2") or smaller	\$243	\$249	2.3%	
75 mm (3")	\$364	\$372	2.3%	
100 mm (4")	\$503	\$515	2.3%	
150 mm (6")	\$581	\$594	2.3%	
200 mm (8")	\$680	\$696	2.3%	
250 mm (10")	\$724	\$741	2.3%	
300 mm (12")	\$775	\$793	2.3%	

Schedule D	Charges for Metered Water Service	2021	Proposed 2022	% Increase
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Four Month Period

Rate for all metered uses

October 16 - April 30	Per Unit	\$3.462	\$3.532	2.0%
May 1 - October 15	Per Unit	\$4.339	\$4.427	2.0%

Schedule E	Meter Service Charge	2021	Proposed 2022	% Increase
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The following schedule shows the meter charge based on the size and type of meter, payable on each service, in addition to water consumption charges.

Per Four Monthly Period	2021	Proposed 2022	% Increase
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Services with Standard Type Meters

17 mm (1/2") and 20 mm (3/4")	\$35	\$36	2.3%
25 mm (1")	\$35	\$36	2.3%
40 mm (1 1/2")	\$74	\$76	2.3%
50 mm (2")	\$103	\$105	2.3%
75 mm (3")	\$232	\$237	2.3%
100 mm (4")	\$282	\$288	2.3%
150 mm (6")	\$366	\$374	2.3%
200 mm (8")	\$567	\$580	2.3%
250 mm (10")	\$695	\$711	2.3%
300 mm (12")	\$824	\$843	2.3%

Services with Low Head Loss Meters / Detector Check Valves

100 mm (4")	\$326	\$333	2.3%
150 mm (6")	\$476	\$487	2.3%
200 mm (8")	\$638	\$653	2.3%
250 mm (10")	\$796	\$814	2.3%
300 mm (12")	\$949	\$971	2.3%

Schedule F	Charges for Temporary Water Service during Construction	2021	Proposed 2022	% Increase
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Building Size in Square Meters of Gross Floor Area

Up to an including 500 sq.m	\$350	\$357	2.0%
Over 500 but not exceeding 2,000	\$686	\$700	2.0%
Over 2,000 but not exceeding 9,000	\$1,030	\$1,051	2.0%
Over 9,000 but not exceeding 24,000	\$1,733	\$1,768	2.0%
Over 24,000 but not exceeding 45,000	\$2,593	\$2,646	2.0%
Over 45,000	\$3,440	\$3,510	2.0%

Schedule G	Fees for Installation of Residential Water Meters	2021	Proposed 2022	% Increase
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Single-Family & Two-Family Dwellings

20 mm (3/4") meter assembly and box	\$1,204	\$1,204	0.0%
25 mm (1") meter assembly and box	\$1,313	\$1,313	0.0%
40 mm meter assembly and box	1,788.00	\$1,788	0.0%

Fees for Installation of Water Meters				
Size of Standard Meter	Meter on City Property	2021	Proposed 2022	% Increase
20 mm (3/4")		\$3,572	\$3,654	2.3%
25 mm (1")		\$3,735	\$3,821	2.3%
40 mm (1 1/2")		\$4,070	\$4,164	2.3%
50 mm (2")		\$4,208	\$4,305	2.3%
75 mm (3")		\$14,685	\$15,023	2.3%
100 mm (4")		\$16,058	\$16,427	2.3%
150 mm (6")		\$52,446	\$53,652	2.3%
200 mm (8")		\$53,940	\$55,181	2.3%
250 mm (10")		\$72,876	\$74,552	2.3%
300 mm (12")		\$80,578	\$82,431	2.3%

Size of Standard Meter	Meter on Private Property	2021	Proposed 2022	% Increase
20 mm (3/4")		\$565	\$578	2.3%
25 mm (1")		\$651	\$666	2.3%
40 mm (1 1/2")		\$870	\$957	10.0%
50 mm (2")		\$1,200	\$1,320	10.0%
75 mm (3")		\$2,648	\$2,913	10.0%
100 mm (4")		\$4,024	\$4,426	10.0%
150 mm (6")		\$8,532	\$8,728	2.3%
200 mm (8")		\$10,206	\$10,441	2.3%
250 mm (10")		\$20,570	\$21,043	2.3%
300 mm (12")		\$28,276	\$28,926	2.3%

Schedule H Miscellaneous Fees and Charges				
		2021	Proposed 2022	% Increase
Extra charge for inaccessible meter (per incident)		\$81	\$83	2.3%
Special meter reading (per occurrence)		\$107	\$109	2.3%
Customer requested meter test (deposit)		\$214	\$219	2.3%
Charges for Returned Cheques		\$38	\$39	2.3%
Residual Water Pressure Estimate Fee				
	Original calculation	\$39	\$40	2.3%
	Additional copies for same location	\$10	\$10	2.3%
Miscellaneous water information requests (per hour)		\$48	\$49	2.3%
City Crew call out fee (normal working hours) (per hour or portion thereof)		\$107	\$109	2.3%
City Crew call out fee (outside normal working hours) (per hour or portion thereof)		\$214	\$219	2.3%
Frozen pipe thawing		at cost	at cost	

DRAFT

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

**A By-law to amend Water Works By-law No. 4848
Regarding 2022 Water Rates and Fees and Miscellaneous Amendments**

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. 4848.
2. In section 4.11, Council:
 - (a) in subsection (c), strikes out “and submitted to the City within 15 days of the test”, and substitutes “and submitted within 15 days of the test”; and
 - (b) in subsection (d), strikes out “City of Vancouver”.
3. Council strikes out section 4.14.
4. In section 6.18, Council:
 - (a) in subsection (a), strikes out clause (i), and substitutes the following:

“

 - (i) an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or”; and

(b) in subsection (b), adds “amended” after “issue an”.
5. In section 6.19, Council:
 - (a) in subsection (a), strikes out clause (i), and substitutes the following:

“

 - (i) an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or”; and

(b) in subsection (b), adds “amended” after “issue an”.

6. Council strikes out section 6.20 and substitutes the following:

“6.20 Adjustment for Underground Leak

If, in the opinion of the Engineer, an underground leak that is between the service pipe and the main buildings on the premises has resulted in an increase in water consumption and has, in the opinion of the Engineer, been repaired by the customer in such a manner as to effectively prevent future leaks of a similar nature, the Collector may:

- (a) estimate the water consumption based on:
 - (i) an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or
 - (ii) if there is no water consumption history, median consumption rates for similar properties; and
- (b) issue an amended bill for the period between the end of the meter reading period in which the leak was fixed, and the beginning of the meter reading period containing the unusual increase, as determined by the Collector, to a maximum adjustment of three meter reading periods, if the customer took reasonable steps, in the opinion of the Engineer, to address the issue within 14 days of either the meter billing date on which the meter bill indicated an unusual increase in water consumption, or the date of notification from the City regarding an unusual increase in water consumption, whichever is dated earlier.”.

7. Council strikes out Schedules A, B, C, D, E, F, G and H and substitutes the following:

**“SCHEDULE A
Flat Rate Connection Fees
And Service Pipe Removal Fees**

Flat Rate Connection Fees

<i>Service Pipe Size</i>	<i>Single-Family and Two-Family Dwelling with or without a Laneway House</i>
20 mm (3/4")	\$ 6,488.00
25 mm (1")	6,717.00
40 mm (1 1/2")	8,077.00
50 mm (2")	8,956.00

<i>Service Pipe Size</i>	<i>Other Connections</i>
20 mm (3/4")	\$10,893.00
25 mm (1")	11,333.00
40 mm (1 1/2")	13,078.00
50 mm (2")	13,078.00
100 mm (4")	18,907.00
150 mm (6")	23,386.00
200 mm (8")	25,537.00
300 mm (12")	35,940.00

Service Pipe Removal Fees

Service Pipe Size

20 mm (3/4") to 50 mm (2") inclusive	\$ 1,266.00
100 mm (4") to 300 mm (12") inclusive	3,800.00

**SCHEDULE B
Annual Flat Rate Service Charges for Residential Properties**

The following charges apply to unmetered single family dwellings and dwellings comprising not more than two separate dwelling units:

Single Dwelling Unit	\$ 810.00
Single-Family with suite or laneway house	1,098.00
Single-Family with suite and laneway house	1,387.00
For each strata title duplex	548.00
Parking Lot/Community Garden	\$ 248.00
Water Service - Turned Off	184.00
Other Property	184.00

**SCHEDULE C
Annual Flat Rate Service Charges for Unmetered Fire Service Pipes**

Fire Service Pipe Size

50 mm (2") or smaller	\$ 249.00
75 mm (3")	372.00
100 mm (4")	515.00
150 mm (6")	594.00
200 mm (8")	696.00
250 mm (10")	741.00
300 mm (12")	793.00

SCHEDULE D
Charges for Metered Water Service

<i>Four Month Period</i>		<i>Rate In Dollars per Unit (2,831.6 Litres)</i>
<u>Rate for all metered uses</u>		
October 16 - April 30	Per unit	\$3.532
May 1 – October 15	Per unit	\$4.427

SCHEDULE E
Meter Service Charge

The following schedule shows the meter charge based on the size and type of meter, payable on each service, in addition to water consumption charges:

Per Four Month Period
Services with Standard Type Meters

17 mm (1/2") and 20 mm (3/4")	\$ 36.00
25 mm (1")	36.00
40 mm (1 1/2")	76.00
50 mm (2")	105.00
75 mm (3")	237.00
100 mm (4")	288.00
150 mm (6")	374.00
200 mm (8")	580.00
250 mm (10")	711.00
300 mm (12")	843.00

Services with Low Head Loss Meters/Detector Check Valves

100 mm (4")	\$ 333.00
150 mm (6")	487.00
200 mm (8")	653.00
250 mm (10")	814.00
300 mm (12")	971.00

SCHEDULE F
Charges for Temporary Water Service During Construction

<i>Building Size in Square Meters of Gross Floor Area</i>	<i>Rate in Dollars of Gross Floor Area Per Building</i>
Up to and including 500	\$ 357.00

Over 500 but not exceeding 2,000	700.00
Over 2,000 but not exceeding 9,000	1,051.00
Over 9,000 but not exceeding 24,000	1,768.00
Over 24,000 but not exceeding 45,000	2,646.00
Over 45,000	3,510.00

SCHEDULE G
Fees for Installation of Water Meters

Fees for Installation of Water Meters for Single and Two Family Dwellings with or without a Laneway House

Size of Standard Meter

20 mm (3/4") meter assembly and box	\$1,204.00
25 mm (1") meter assembly and box	\$1,313.00
40 mm meter assembly and box	\$1,788.00

Fees for Installation of Water Meters on Other Connections

<i>Size of Standard Meter</i>	<i>Meter on City Property</i>	<i>Meter on Private Property</i>
20 mm (3/4")	\$ 3,654.00	\$ 578.00
25 mm (1")	3,821.00	666.00
40 mm (1 1/2")	4,164.00	957.00
50 mm (2")	4,305.00	1,320.00
75 mm (3")	15,023.00	2,913.00
100 mm (4")	16,427.00	4,426.00
150 mm (6")	53,652.00	8,728.00
200 mm (8")	55,181.00	10,441.00
250 mm (10")	74,552.00	21,043.00
300 mm (12")	82,431.00	28,926.00

SCHEDULE H
Miscellaneous Fees and Charges

Extra charge for inaccessible meter (per incident)	\$ 83.00
Special Meter Reading (per occurrence)	109.00
Customer Requested Meter Test (deposit)	219.00
Charges for Returned Cheques	39.00
Residual Water Pressure Estimate Fee	
Original calculation	40.00
Additional copies for same location	10.00
Miscellaneous water information requests (per hour)	49.00

Proposed Amendments to Water Works By-law No. 4848

This document is being provided for information only as a reference tool to highlight the proposed amendments. The draft amending by-laws attached to the Council report RTS No. 14669 entitled December 1' 2021 represent the amendments being proposed to Council for approval. Should there be any discrepancy between this redline version and the draft amending by-laws, the draft amending by-laws prevail.

Section 4.11 Testing Backflow Prevention Assemblies

A customer or other person must ensure that:

- a) every backflow prevention assembly on the premises is tested by a certified backflow assembly tester;
- b) every backflow prevention assembly on the premises is tested:
 - a. upon installation,
 - b. annually,
 - c. after any cleaning or repair, and
 - d. (iv) upon request by the Engineer;
- c) the results of all backflow prevention assembly tests are recorded by a certified backflow assembly tester on a test report form that is approved by the Engineer, signed by the tester, and submitted to the City within 15 days of the test and submitted within 15 days of the test;
- d) a completed City of Vancouver test verification tag approved by the Engineer is attached to each backflow prevention assembly; and
- e) in the event that a backflow prevention assembly test indicates a need for repair or replacement, the assembly is repaired or replaced and retested within of the time specified by the Engineer

Section 4.14 Annual Administration Fees

~~All customers whose premises are metered and contain one or more backflow prevention assemblies, must pay an annual administration fee as specified in Schedule "H"~~

Section 6.18 Adjustment for Inaccurate Meter Record

If, in the opinion of the Collector, the water consumption rate is inaccurate as the result of a malfunctioning, damaged or broken meter, the Collector must:

- a) estimate actual water consumption based on:
 - ~~i. an average of the water consumption for the current year and up to two previous years, or~~ **an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or; and**
 - ii. if there is no consumption history, median consumption rates for similar properties; and
- b) issue an **amended** bill for the estimated water consumption:
 - i. from the actual date of the damage, or
 - ii. if the actual date of damage cannot be determined, for a period up to the current year plus the previous year

Section 6.19 Adjustment for Tampering

If, in the opinion of the Collector, the water consumption rate is inaccurate due to tampering, the Collector must:

- a) estimate actual water consumption based on:
 - i. ~~an average of the water consumption for the current year and up to two previous years, or~~ **an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or**; and
 - ii. if there is no water consumption history, the median water consumption rate for similar properties; and
- b) issue an **amended** bill for:
 - i. estimated water consumption for the entire period of the tampering, as determined by the Collector, and
 - ii. all costs incurred in estimating water consumption and repairing the City's waterworks system.

Section 6.20 Adjustment for Underground Leak

~~If, in the opinion of the Engineer, an underground leak on a metered service:~~

- ~~a) has resulted in an inaccurate water consumption record;~~
- ~~b) could not reasonably have been detected by the customer;~~
- ~~c) is not associated with a landscape irrigation system; and~~
- ~~d) has, in the opinion of the Engineer, been repaired by the customer in such a manner as to effectively prevent future leaks of a similar nature;~~

~~The water consumption rate may be adjusted by the Collector, as provided in section 6.18(a), except that the adjustment must only be made for the period between two weeks after the first meter billing date on which the meter bill indicates an unusual increase in water consumption, as determined by the Collector, and the meter reading date for the meter bill immediately preceding the meter bill containing the unusual increase or the date on which the owner was notified of the issue, whichever is the shorter period of adjustment, to a maximum adjustment period of six months.~~

If, in the opinion of the Engineer, an underground leak that is between the service pipe and the main buildings on the premises has resulted in an increase in water consumption and has, in the opinion of the Engineer, been repaired by the customer in such a manner as to effectively prevent future leaks of a similar nature, the Collector may:

- a) **estimate the water consumption based on:**
 - i. **an average of the water consumption for the same meter reading period in the three previous years, except that if, in the opinion of the Collector, one or more of those years appears to have a water consumption rate that is not reasonably representative of the usual water consumption pattern, the Collector may calculate the average using any three previous years, or**

- ii. if there is no water consumption history, median consumption rates for similar properties; and

- b) issue an amended bill for the period between the end of the meter reading period in which the leak was fixed, and the beginning of the meter reading period containing the unusual increase, as determined by the Collector, to a maximum adjustment of three meter reading periods, if the customer took reasonable steps, in the opinion of the Engineer, to address the issue within 14 days of either the meter billing date on which the meter bill indicated an unusual increase in water consumption, or the date of notification from the City regarding an unusual increase in water consumption, whichever is dated earlier.”