



## COUNCIL REPORT

Report Date: November 7, 2023  
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Meeting Date: December 5, 2023  
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TO: Vancouver City Council  
FROM: General Manager of Engineering Services  
SUBJECT: 2024 Annual Review of Water Rates and Water Works By-law Amendments

### Recommendations

- A. THAT Council approve, in principle, the proposed amendments to the Water Works By-law, generally as set out in this report and as listed in Appendix A, including the establishment of the 2024 rates and fees.
- 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.

### Purpose and Executive Summary

This report seeks Council approval of the amendments to the Water Works By-law and recommended 2024 rates and fees for water service, which incorporates: a 4.0% increase for flat rate service charges for residential properties and metered water service rates; 20.0% increase for Water Flat Rate Connection Fees for Single Detached Houses and Duplexes; 6.0% for all other Water Flat Rate Connection Fees; and varied changes for installation of water meters and other Water Utility charges and fees. These increases are based on cost recovery for water services including capital programs to keep the water utility in a state of good repair. Key factors driving rate and fee changes are increases to bulk water purchase rates from Metro Vancouver, Water Utility capital and operating cost increases.

### Council Authority/Previous Decisions

Water user and water connection fees are reviewed annually by Council to establish the following year's rates.

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 April 12, 2017, Council approved By-law amendments to expand the prohibition of non-recirculating uses of drinking water in support of the Greenest City Action Plan.

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 Comments**

The City Manager concurs with the foregoing recommendations.

### **Context and Background**

Vancouver's Drinking Water Utility monitors and protects potable water quality, maintains infrastructure in a state of good repair, ensures adequate water supply for drinking and fire protection, manages water system resiliency and supports efficient use of drinking water for long term sustainable supply. All drinking water in the City is purchased from Metro Vancouver, which is responsible for supply reservoirs, treatment, and delivery of water to the City system.

The water distribution network, valued at \$3.1 billion, is made up of 1,488 km of buried pipelines, 101,000 service connections, approximately 6,600 fire hydrants, 30,000 valves, and 25,000 water meters. 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.

Pressures facing the drinking water utility include aging infrastructure, population growth, climate change, hazard vulnerabilities and evolving regulatory frameworks. Annual costs of the water system are driven by capital costs for asset renewal; to accommodate growth; to support efficient use of water; operating costs to maintain the system; and the cost to purchase water from Metro Vancouver. 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.

### **Discussion**

Currently, 22% of the Waterworks assets are in poor condition, while the remaining 78% are in fair-to-good condition. Additional asset renewal investments will reduce the rate of deterioration, however in the next 10 years the condition will deteriorate to 26% poor due to a large portion of

the network reaching end of life in the next 20 years. As the assets increasingly deteriorate, it is expected there will be higher rates of water main breaks and leaks. This worsening condition is expected to be further exacerbated by climate change.

Regional population growth, combined with climate change, is expected to require expanded regional drinking water supply capacity by late 2030s if water consumption is not significantly reduced. Investing in universal water metering and advanced metering infrastructure (“AMI” meter reading system) will help to continue to decrease Vancouver’s per capita water consumption. In the City of Vancouver, all services are metered except for single detached houses and duplex zoned properties. As of 2023, approximately 14% of single detached houses and duplexes are metered, with the remainder on flat rate billing. Water meters currently capture approximately 55% of water consumption in Vancouver.

Staff recommend that flat rate service charges for residential properties and metered water service rates increase by 4.0%, connection fees be increased by 6.0% to 20.0%, and new meter installation fees be increased by 6.0% to 79% over 2023 rates. Some cost areas are experiencing different cost escalations: user rate increases of 4.0% are driven mainly by Metro Vancouver’s bulk water rates; connection fees are driven by general cost increases in pipes, parts and equipment; and new water meter installations on private side have seen higher than average meter and equipment market increases. Fee increases proposed have been set to recover cost increases in the utility.

Please refer to Appendix D for more details on the City’s Drinking Water System and Long-Term Strategies.

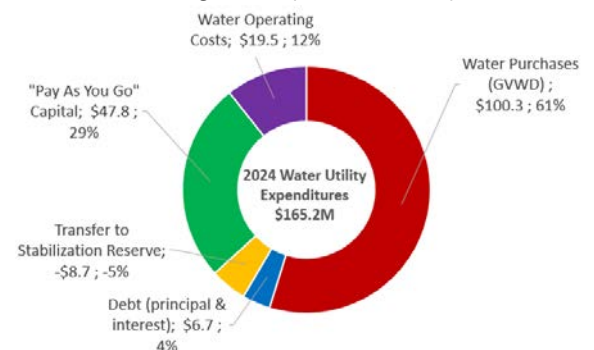
## Financial Implications

### Key Cost Drivers

**Figure 1: Water Utility Expenditures**

The Water Utility expenditures consist of four key cost drivers, shown in Figure 1 (\$ in millions):

- Water purchased from Metro Vancouver = 61%
- Capital expenditures and debt = 33%
- Operating and maintenance costs = 12%
- Transfers from the stabilization reserve = (-5%)



### Water Purchases

The cost to purchase water from Metro Vancouver is the largest cost driver in the Water Utility (61%), based on the price per cubic metre that Metro charges all member municipalities and the total consumption within the City.

Metro Vancouver water rates are expected to rise by an average of 5.8% annually from 2024 to 2028 for investments to address climate change, population growth and aging infrastructure pressures on regional water infrastructure. Metro Vancouver's recently approved 2024-2028 Financial Plan will shift more growth-driven regional infrastructure costs paid for by regionally collected Development Cost Charge to reduce the burden on current water rate payers.

The continued success of water demand management in Vancouver has led to declining water consumption per capita in the City even with the pressures of aging infrastructure, population growth and climate change. Further water use reductions can reduce Vancouver's overall costs to operate the water system and help defer major regional water supply expansions.

### Water Capital Program

The Water Capital Program supports work to replace aging infrastructure and improve the resiliency of the water system to climate change and emergencies. For the 2023-2026 Capital Plan, the water capital program will be fully funded on a 'pay-as-you-go' basis. '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 or too costly to be funded on a 'pay-as-you-go' basis. The current debt charges represent past borrowing and will decline over time.

### Operating and Maintenance

These are the costs associated with cleaning, repairing, inspecting and managing the infrastructure, as well as emergency response for main breaks and service connection leaks.

## **2024 Proposed Budget and Rates**

Water utility rates are proposed to increase by 4.0%, or \$33 per year for a single detached house. This change is necessary due to:

- An increase of 7.6% in Metro Vancouver water rates that fund regional infrastructure renewals and improvements to reservoirs, treatment and transmission infrastructure;
- Funding required for water capital projects within the approved 2023-2026 Capital Plan; and
- Increasing asset renewal rate from 0.9% annually to 1.1% during the 2023-2026 Capital Plan, to catch up with the rate of deterioration of aging infrastructure.

The Draft 2024 budget is summarized in Table 1 with the 2023 budget for comparison.

**Table 1 – Draft 2024 Budget**

| Water Utility (\$ millions)              | 2023<br>Budget     | 2024<br>Proposed   | \$ Change from<br>2023 Budget | % Change    |
|--|--------------------|--------------------|-------------------------------|-------------|
| <b>Water Consumption Volume</b>          | <b>111,500,000</b> | <b>110,000,000</b> |                               |             |
| <b>Revenues</b>                          |                    |                    |                               |             |
| Metered Rate Revenues                    | \$ 84.1            | \$ 92.1            | \$ 8.0                        | 9.6%        |
| Flat Rate Revenues                       | 60.8               | 61.2               | 0.4                           | 0.7%        |
| Meter Service Charges                    | 4.9                | 5.8                | 0.9                           | 19.0%       |
| Flat Rate Fire Line Charges              | 3.6                | 4.0                | 0.4                           | 11.5%       |
| Other Revenues                           | 0.8                | 2.1                | 1.2                           | 148.7%      |
| <b>Total Revenues</b>                    | <b>\$ 154.2</b>    | <b>\$ 165.2</b>    | <b>\$ 11.1</b>                | <b>7.2%</b> |
| <b>Expenses &amp; Transfers</b>          |                    |                    |                               |             |
| Water Purchases (GVWD)                   | \$ 95.8            | \$ 100.3           | \$ 4.5                        | 4.7%        |
| Waterworks Operations                    | 17.5               | 19.2               | 1.6                           | 9.3%        |
| Debt Service Charges                     | 5.1                | 6.7                | 1.6                           | 32.0%       |
| Pay As you Go Capital                    | 31.5               | 47.8               | 16.3                          | 51.7%       |
| Transfer to/(from) Stabilization Reserve | 4.3                | (8.7)              | (13.0)                        | -302.8%     |
| <b>Total Expenses &amp; Transfers</b>    | <b>\$ 154.2</b>    | <b>\$ 165.2</b>    | <b>\$ 11.1</b>                | <b>7.2%</b> |
| <b>Surplus/(Deficit)</b>                 | <b>\$ -</b>        | <b>\$ -</b>        | <b>\$ -</b>                   | <b>0.0%</b> |

\* Tables may not sum due to rounding.

### 2024 Revenues & Proposed Rates

The revenue projections above incorporate a 4.0% water rate increase for both metered customers and flat-rate service charges for residential properties, an increase in the proportionate water consumption by metered customers and forecasted water use reductions due to water conservation and water demand management.

There is also more revenue from fire line charges, meter service charges, and other miscellaneous revenues which reflect the increasing number of these types of accounts.

### 2024 Expenditures & Transfers

The increase for the 2024 water purchase budget is \$4.5 million due to a Metro Vancouver price increase of 7.6% combined with a lower volume of water purchase forecasted. Water Utility operational costs will increase by 9.3% from 2023 to 2024, primarily as a result of fixed cost increases, including a 6% increase in costs for existing staff.

The 'pay-as-you-go' contribution has increased from \$31.5 million to \$47.8 million which represents funding for projects scheduled as part of the 2023-2026 Capital Plan. This includes funding for multi-year projects that will span the remainder of the Capital Plan. The 2024 debt charges represent past borrowing and will decrease over time as outstanding borrowing is gradually retired in upcoming years.

The proposed budget includes a transfer of \$8.7 million from the Water Rates Stabilization Reserve to temper the impact of these costs on water customers while still managing a healthy rate stabilization reserve to balance future cost fluctuations.

### Five Year Outlook

Table 2 summarizes the five year rate outlook for the Water Utility. Only the 2024 rate increase is to be approved by Council; future year increases are provided for information only. The primary driver of Water Utility rate increases will be Metro Vancouver decisions on levy increases; the information below is based on the most recent Metro Vancouver rate forecasts. Future rates will also depend on future capital plan decisions and cost inflation which is uncertain. As noted in previously in this report, renewal of aging infrastructure regionally, as well as other factors such as population growth and climate change, will put upward pressure on long term Water Utility rates. Future rate projections are considered when assessing the use of the rate stabilization reserve, as the City rates seeks to achieve more consistent and predictable rate increases over time for ratepayers as part of the fee setting process.

**Table 2 – Water Utility Rate Outlook 2024-2028**

| Water Utility Rate Forecast  | 2024 | 2025 | 2026 | 2027 | 2028 |
|------------------------------|------|------|------|------|------|
| Metro Rate Increases         | 7.6% | 8.9% | 6.4% | 3.5% | 2.7% |
| Proposed City Rate increases | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% |

### Connection Fees and Miscellaneous Fees

All development and major renovation projects that require new water connections and water meters pay fees for the new infrastructure. To recover program costs, a 20.0% increase is recommended for residential flat rate water connection fees for a Single Detached House or Duplex, and a 6.0% increase is recommended for all other flat rate water connection and removal fees.

Costs for new water meter installations have seen higher than average material and equipment increases over the last several years. Fee increases of 6.0% up to 79.0% are proposed as a fee adjustment to recover program cost increases.

There are additional fee and miscellaneous amendments recommended to clarify language and improve administration and enforcement of Water Works By-law 4848 including: Cross Connection Control requirements and fee clarification; a charge for inaccessible meter or appurtenances; clarity on obligations of a water customer to ensure a privately located meter is accessible to City staff; and, as part of the Permit Improvement Project, the definition of a building site has been updated to better reflect renovation cost threshold that require a new water connection and meter.

**Legal Implications/Risks**

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 capital and operating costs and water purchases from Metro Vancouver. Based on a review of the proposed water costs for 2024, it is recommended that rates and fees for water service incorporate a 4.0% increase for flat rate and metered user rates; 20.0% increase for flat rate water connection fees for Single Detached House or Duplex; 6.0% for all other Water flat rate connection fees; and varied changes for all other Water Utility rates and fees. Amendments to By-law language have also been incorporated to provide clarity and improve administration.

\* \* \* \* \*

**Appendix A**  
**Water Works By-Law No. 4848**  
**2024 Rate Changes**

| <b>Schedule A</b>   | <b>Flat Rate Connection Fees</b>                             | <b>2023</b> | <b>Proposed</b> | <b>% Increase</b> |
|---|--|-------------|-----------------|-------------------|
| <u>Single Detached House, with or without a Laneway House, and Duplex</u> |  |             |                 |                   |
|   | 20 mm (3/4")   | \$7,137     | \$8,564         | 20.0%             |
|   | 25 mm (1")   | \$7,389     | \$8,867         | 20.0%             |
|   | 40 mm (1 1/2")   | \$8,885     | \$10,662        | 20.0%             |
|   | 50 mm (2")   | \$9,852     | \$11,822        | 20.0%             |
| <u>Other Connections</u>  |  |             |                 |                   |
|   | 20 mm (3/4")   | \$11,252    | \$11,927        | 6.0%              |
|   | 25 mm (1")   | \$11,707    | \$12,409        | 6.0%              |
|   | 40 mm (1 1/2")   | \$13,510    | \$14,321        | 6.0%              |
|   | 50 mm (2")   | \$13,510    | \$14,321        | 6.0%              |
|   | 100 mm (4")  | \$19,531    | \$20,703        | 6.0%              |
|   | 150 mm (6")  | \$24,158    | \$25,607        | 6.0%              |
|   | 200 mm (8")  | \$26,380    | \$27,963        | 6.0%              |
|   | 300 mm (12")   | \$37,126    | \$39,354        | 6.0%              |
| <b>Schedule A.1</b>   | <b>Removal Fees</b>  | <b>2023</b> | <b>Proposed</b> | <b>% Increase</b> |
|   | 20mm (3/4") to 50mm (2") inclusive                           | \$1,308     | \$1,386         | 6.0%              |
|   | 100mm (4") to 300mm (12") inclusive                          | \$3,925     | \$4,161         | 6.0%              |
| <b>Schedule B</b>   | <b>Flat Service Charges for Residential Properties</b>       | <b>2023</b> | <b>Proposed</b> | <b>% Increase</b> |
|   | Single Detached House  | \$834       | \$867           | 4.0%              |
|   | Single Detached House with secondary suite or laneway house  | \$1,131     | \$1,176         | 4.0%              |
|   | Single Detached House with secondary suite and laneway house | \$1,429     | \$1,486         | 4.0%              |
|   | For each strata title duplex                                 | \$564       | \$587           | 4.0%              |
|   | Parking Lot/Community Garden                                 | \$255       | \$265           | 4.0%              |
|   | Water Service - Turned Off                                   | \$190       | \$198           | 4.0%              |
|   | Other Property   | \$190       | \$198           | 4.0%              |
| <b>Schedule C</b>   | <b>Flat Service Charges for Unmetered Fire Service Pipes</b> | <b>2023</b> | <b>Proposed</b> | <b>% Increase</b> |
|   | 50 mm (2") or smaller  | \$257       | \$272           | 6.0%              |
|   | 75 mm (3")   | \$384       | \$407           | 6.0%              |
|   | 100 mm (4")  | \$532       | \$564           | 6.0%              |
|   | 150 mm (6")  | \$614       | \$651           | 6.0%              |
|   | 200 mm (8")  | \$719       | \$762           | 6.0%              |
|   | 250 mm (10")   | \$765       | \$811           | 6.0%              |
|   | 300 mm (12")   | \$819       | \$868           | 6.0%              |



| <b>Schedule D</b>         |          | <b>Charges for Metered Water Service</b> |                      |                   |
|---------------------------|----------|--|----------------------|-------------------|
|                           |          | <b>2023</b>                              | <b>Proposed 2024</b> | <b>% Increase</b> |
| Four Month Period         |          |  |                      |                   |
| Rate for all metered uses |          |  |                      |                   |
| October 16 - April 30     | Per Unit | \$3,638                                  | \$3,784              | 4.0%              |
| May 1 - October 15        | Per Unit | \$4,560                                  | \$4,743              | 4.0%              |

| <b>Schedule E</b> |  | <b>Meter Service Charge</b> |  |  |
|-------------------|--|-----------------------------|--|--|
|-------------------|--|-----------------------------|--|--|

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.

| <b>Per Four Monthly Period</b>                                    |  | <b>2023</b> | <b>Proposed 2024</b> | <b>% Increase</b> |
|---|--|-------------|----------------------|-------------------|
| <u>Services with Standard Type Meters</u>                         |  |             |                      |                   |
| 17 mm (1/2") and 20 mm (3/4")                                     |  | \$37        | \$39                 | 6.0%              |
| 25 mm (1")  |  | \$37        | \$39                 | 6.0%              |
| 40 mm (1 1/2")  |  | \$79        | \$84                 | 6.0%              |
| 50 mm (2")  |  | \$108       | \$114                | 6.0%              |
| 75 mm (3")  |  | \$245       | \$260                | 6.0%              |
| 100 mm (4")   |  | \$298       | \$316                | 6.0%              |
| 150 mm (6")   |  | \$386       | \$409                | 6.0%              |
| 200 mm (8")   |  | \$599       | \$635                | 6.0%              |
| 250 mm (10")  |  | \$734       | \$778                | 6.0%              |
| 300 mm (12")  |  | \$871       | \$923                | 6.0%              |
| <u>Services with Low Head Loss Meters / Detector Check Valves</u> |  |             |                      |                   |
| 100 mm (4")   |  | \$344       | \$365                | 6.0%              |
| 150 mm (6")   |  | \$503       | \$533                | 6.0%              |
| 200 mm (8")   |  | \$675       | \$716                | 6.0%              |
| 250 mm (10")  |  | \$841       | \$891                | 6.0%              |
| 300 mm (12")  |  | \$1,003     | \$1,063              | 6.0%              |

| <b>Schedule F</b>                                  |  | <b>Charges for Temporary Water Service during Construction</b> |                      |                   |
|--|--|--|----------------------|-------------------|
|  |  | <b>2023</b>  | <b>Proposed 2024</b> | <b>% Increase</b> |
| Building Size in Square Meters of Gross Floor Area |  |  |                      |                   |
| Up to an including 500 sq.m                        |  | \$369  | \$391                | 6.0%              |
| Over 500 but not exceeding 2,000                   |  | \$723  | \$766                | 6.0%              |
| Over 2,000 but not exceeding 9,000                 |  | \$1,086  | \$1,151              | 6.0%              |
| Over 9,000 but not exceeding 24,000                |  | \$1,826  | \$1,936              | 6.0%              |
| Over 24,000 but not exceeding 45,000               |  | \$2,733  | \$2,897              | 6.0%              |
| Over 45,000  |  | \$3,626  | \$3,844              | 6.0%              |

| <b>Schedule G Fees for Installation of Residential Water Meters</b> |             |                      |                   |
|---|-------------|----------------------|-------------------|
|   | <b>2023</b> | <b>Proposed 2024</b> | <b>% Increase</b> |
| <i>Single Detached House and Duplex</i>                             |             |                      |                   |
| 20 mm (3/4") meter assembly and box                                 | \$1,204     | \$1,276              | 6.0%              |
| 25 mm (1") meter assembly and box                                   | \$1,313     | \$1,392              | 6.0%              |
| 40 mm meter assembly and box  | \$1,788     | \$1,895              | 6.0%              |

| <b>Fees for Installation of Water Meters</b> |                        |             |                      |                   |
|--|------------------------|-------------|----------------------|-------------------|
| Size of Standard Meter                       | Meter on City Property | <b>2023</b> | <b>Proposed 2024</b> | <b>% Increase</b> |
| 20 mm (3/4")                                 |                        | \$3,775     | \$4,002              | 6.0%              |
| 25 mm (1")                                   |                        | \$3,947     | \$4,184              | 6.0%              |
| 40 mm (1 1/2")                               |                        | \$4,301     | \$4,559              | 6.0%              |
| 50 mm (2")                                   |                        | \$4,447     | \$4,714              | 6.0%              |
| 75 mm (3")                                   |                        | \$15,519    | \$16,450             | 6.0%              |
| 100 mm (4")                                  |                        | \$16,969    | \$17,987             | 6.0%              |
| 150 mm (6")                                  |                        | \$55,423    | \$58,748             | 6.0%              |
| 200 mm (8")                                  |                        | \$57,002    | \$60,422             | 6.0%              |
| 250 mm (10")                                 |                        | \$77,012    | \$81,633             | 6.0%              |
| 300 mm (12")                                 |                        | \$85,151    | \$90,260             | 6.0%              |

| Size of Standard Meter | Meter on Private Property | <b>2023</b> | <b>Proposed 2024</b> | <b>% Increase</b> |
|------------------------|---------------------------|-------------|----------------------|-------------------|
| 20 mm (3/4")           |                           | \$597       | \$633                | 6.0%              |
| 25 mm (1")             |                           | \$733       | \$1,026              | 40.0%             |
| 40 mm (1 1/2")         |                           | \$1,053     | \$1,685              | 60.0%             |
| 50 mm (2")             |                           | \$1,452     | \$1,931              | 33.0%             |
| 75 mm (3")             |                           | \$3,204     | \$5,735              | 79.0%             |
| 100 mm (4")            |                           | \$4,869     | \$6,086              | 25.0%             |
| 150 mm (6")            |                           | \$9,016     | \$12,442             | 38.0%             |
| 200 mm (8")            |                           | \$10,786    | \$15,100             | 40.0%             |
| 250 mm (10")           |                           | \$21,737    | \$23,041             | 6.0%              |
| 300 mm (12")           |                           | \$29,881    | \$31,674             | 6.0%              |

| <b>Schedule H Miscellaneous Fees and Charges</b>                                    |             |                      |                   |
|---|-------------|----------------------|-------------------|
|   | <b>2023</b> | <b>Proposed 2024</b> | <b>% Increase</b> |
| Extra charge for inaccessible meter (per incident)                                  | \$86        | \$91                 | 6.0%              |
| Special meter reading (per occurrence)  | \$113       | \$120                | 6.0%              |
| Customer requested meter test (deposit)   | \$226       | \$240                | 6.0%              |
| Charges for Returned Cheques  | \$40        | \$42                 | 6.0%              |
| Residual Water Pressure Estimate Fee  |             |                      |                   |
| Original calculation  | \$41        | \$43                 | 6.0%              |
| Additional copies for same location   | \$10        | \$11                 | 6.0%              |
| Miscellaneous water information requests (per hour)                                 | \$51        | \$54                 | 6.0%              |
| City Crew call out fee (normal working hours) (per hour or portion thereof)         | \$113       | \$120                | 6.0%              |
| City Crew call out fee (outside normal working hours) (per hour or portion thereof) | \$226       | \$240                | 6.0%              |
| Frozen pipe thawing   | At cost     | At cost              |                   |
| Backflow Prevention Test Report Fee   | \$20        | \$20                 |                   |

**APPENDIX B****BY-LAW NO. \_\_\_\_\_****DRAFT By-law to amend Water Works By-law No. 4848  
regarding location of meters, housekeeping amendments and  
2024 water rates and fees**

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

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

1. This By-law amends the indicated provisions of Water Works By-law No. 4848.
2. In section 1.1, Council:
  - (a) in the definition of “BUILDING SITE”, strikes out “the greater of \$95,000 or 100% of the building’s latest assessed value according to the records of the British Columbia Assessment Authority” and substitutes “\$250,000”; and
  - (b) in the definition of “CERTIFIED BACKFLOW ASSEMBLY TESTER”, strikes out “by the BC Water and Waste Association (BCWWA)”.
3. In section 2.14, Council:
  - (a) strikes out the paragraph starting with “Any customer served by a privately located meter” and substitutes:

“Any customer served by a privately located meter which meter or an appurtenance thereof has, in the opinion of the Engineer or Collector, become inaccessible or is deemed inaccessible for reading or maintenance, may be billed an additional charge added to their utility bill for metered water service charges at the rate as specified in Schedule H, while the said meter or appurtenance remains inaccessible.”;
  - (b) adds a new paragraph below the paragraph starting with “Any customer served by a privately located meter” as follows:

“If a customer served by a privately located meter fails to respond to the City’s request to schedule an appointment to provide access to the meter or an appurtenance thereof for reading or maintenance, or fails to schedule an appointment within a reasonable amount of time, or fails to provide access on the scheduled date or at the scheduled time, the meter or appurtenance shall be deemed to be “inaccessible”.”;
  - (c) in the paragraph starting with “The Engineer or Collector may order”, strikes out “Any delay in the installation of such register shall be deemed in this section to be an “inaccessible meter”.” and substitutes “If there is a delay in the installation of such register, the meter shall be deemed to be an “inaccessible meter”.”;

- (d) strikes out the paragraph starting with “Where in the opinion of the City Engineer” and substitutes:
- “Where in the opinion of the City Engineer a privately-located meter or an appurtenance is situated in an unsafe area or its location creates a dangerous situation to a reader, the meter or appurtenance shall be deemed to be “inaccessible”.”; and
- (e) in the paragraph starting with “The Collector may order”, strikes out “the meter or accessory thereof” and substitutes “a meter or appurtenance thereof”.
4. In Section 4.11(d), Council strikes out “approved by the Engineer”.
5. Council adds a new Section 4.14 in the correct numerical order as follows:

**“4.14 Backflow Prevention Assembly Test Report Administration Fees**

Every backflow prevention assembly test report that is submitted must be accompanied by an administration fee, as specified in Schedule H.”.

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 Detached House with or without a Laneway House and Duplex</i> |
|--------------------------|---|
| 20 mm (3/4")             | \$ 8,564.00   |
| 25 mm (1")               | 8,867.00  |
| 40 mm (1 1/2")           | 10,662.00   |
| 50 mm (2")               | 11,822.00   |
| <i>Service Pipe Size</i> | <i>Other Connections</i>  |
| 20 mm (3/4")             | \$ 11,927.00  |
| 25 mm (1")               | 12,409.00   |
| 40 mm (1 1/2")           | 14,321.00   |
| 50 mm (2")               | 14,321.00   |
| 100 mm (4")              | 20,703.00   |
| 150 mm (6")              | 25,607.00   |
| 200 mm (8")              | 27,963.00   |
| 300 mm (12")             | 39,354.00   |

**Service Pipe Removal Fees***Service Pipe Size*

|                                     |             |
|-------------------------------------|-------------|
| 20mm (3/4") to 50mm (2") inclusive  | \$ 1,386.00 |
| 100mm (4") to 300mm (12") inclusive | 4,161.00    |

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

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

|  |           |
|--|-----------|
| Single Detached House  | \$ 867.00 |
| Single Detached House with secondary suite or laneway house  | 1,176.00  |
| Single Detached House with secondary suite and laneway house | 1,486.00  |
| For each strata title duplex                                 | 587.00    |
| Parking Lot/Community Garden                                 | \$ 265.00 |
| Water Service - Turned Off                                   | 198.00    |
| Other Property   | 198.00    |

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

|                       |           |
|-----------------------|-----------|
| 50 mm (2") or smaller | \$ 272.00 |
| 75 mm (3")            | 407.00    |
| 100 mm (4")           | 564.00    |
| 150 mm (6")           | 651.00    |
| 200 mm (8")           | 762.00    |
| 250 mm (10")          | 811.00    |
| 300 mm (12")          | 868.00    |

**SCHEDULE D****Charges for Metered Water Service**

|                          |  |
|--------------------------|--|
| <i>Four Month Period</i> | <i>Rate In Dollars per Unit (2,831.6 Litres)</i> |
|--------------------------|--|

Rate for all metered uses

|                       |          |          |
|-----------------------|----------|----------|
| October 16 - April 30 | Per unit | \$ 3.784 |
| May 1 - October 15    | Per unit | 4.743    |

**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") | \$ 39.00 |
| 25 mm (1")                    | 39.00    |
| 40 mm (1 1/2")                | 84.00    |
| 50 mm (2")                    | 114.00   |
| 75 mm (3")                    | 260.00   |
| 100 mm (4")                   | 316.00   |
| 150 mm (6")                   | 409.00   |
| 200 mm (8")                   | 635.00   |
| 250 mm (10")                  | 778.00   |
| 300 mm (12")                  | 923.00   |

*Services with Low Head Loss Meters/Detector Check Valves*

|              |           |
|--------------|-----------|
| 100 mm (4")  | \$ 365.00 |
| 150 mm (6")  | 533.00    |
| 200 mm (8")  | 716.00    |
| 250 mm (10") | 891.00    |
| 300 mm (12") | 1,063.00  |

**SCHEDULE F**  
**Charges for Temporary Water Service During Construction**

| <i>Building Size in Square<br/>Meters of Gross Floor Area</i> | <i>Rate in Dollars of<br/>Gross Floor Area<br/>Per Building</i> |
|---|---|
| Up to and including 500 sq.m                                  | \$ 391.00   |
| Over 500 but not exceeding 2,000                              | 766.00  |
| Over 2,000 but not exceeding 9,000                            | 1,151.00  |
| Over 9,000 but not exceeding 24,000                           | 1,936.00  |
| Over 24,000 but not exceeding 45,000                          | 2,897.00  |
| Over 45,000   | 3,844.00  |

**SCHEDULE G**  
**Fees for Installation of Water Meters**

***Fees for Installation of Water Meters for Single Detached House with or without a Laneway House and Duplex***

*Size of Standard Meter*

|                                     |             |
|-------------------------------------|-------------|
| 20 mm (3/4") meter assembly and box | \$ 1,276.00 |
| 25 mm (1") meter assembly and box   | 1,392.00    |
| 40 mm meter assembly and box        | 1,895.00    |

***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")                  | \$ 4,002.00                   | \$ 633.00                        |
| 25 mm (1")                    | 4,184.00                      | 1,026.00                         |
| 40 mm (1 1/2")                | 4,559.00                      | 1,685.00                         |
| 50 mm (2")                    | 4,714.00                      | 1,931.00                         |
| 75 mm (3")                    | 16,450.00                     | 5,735.00                         |
| 100 mm (4")                   | 17,987.00                     | 6,086.00                         |
| 150 mm (6")                   | 58,748.00                     | 12,442.00                        |
| 200 mm (8")                   | 60,422.00                     | 15,100.00                        |
| 250 mm (10")                  | 81,633.00                     | 23,041.00                        |
| 300 mm (12")                  | 90,260.00                     | 31,674.00                        |

**SCHEDULE H**  
**Miscellaneous Fees and Charges**

|   |          |
|---|----------|
| Additional charge for inaccessible meter or appurtenance (per incident)     | \$ 91.00 |
| Special meter reading (per occurrence)                                      | 120.00   |
| Customer requested meter test (deposit)                                     | 240.00   |
| Charges for Returned Cheques  | 42.00    |
| Residual Water Pressure Estimate Fee  |          |
| Original calculation  | 43.00    |
| Additional copies for same location   | 11.00    |
| Miscellaneous water information requests (per hour)                         | 54.00    |
| City Crew call out fee (normal working hours) (per hour or portion thereof) | 120.00   |





## APPENDIX C

### 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. 15148 entitled 2024 Annual Review of Water Rates and Waterworks By-Law Amendments 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.

#### 1.1 Interpretation

"BUILDING SITE" means premises containing

- (a) a building under construction and not previously occupied, or
- (b) an existing building being renovated where the estimated value of the construction is more than ~~the greater of \$95,000 or 100% of the building's latest assessed value according to the records of the British Columbia Assessment Authority~~ **\$250,000;**

"CERTIFIED BACKFLOW ASSEMBLY TESTER" means a person who holds current certification ~~by the BC Water and Waste Association (BCWWA)~~ as a Certified Backflow Assembly Tester;

#### 2.14 Location of Meters

The customer may normally choose the location of a meter, provided, however, where in the opinion of the Engineer installation of a meter and the appurtenant chamber is not practicable, the Engineer shall specify the location of the meter, and if the meter is located on private property, the customer shall provide access for installing and maintaining the meter and the appurtenances for meter reading. The pipes, valves and other appurtenances to the meter shall be installed in accordance with standards specified by the Engineer. Any application to install a meter shall be accompanied by a fee as specified in Schedule "G".

A meter shall not be located in line with a sidewalk vehicular crossing.

Any customer served by a privately located meter which meter or ~~accessory~~ **an appurtenance** thereof has, in the opinion of the Engineer or Collector, become inaccessible **or is deemed inaccessible** for reading or maintenance, may be billed an additional charge ~~added to Schedule "A" as part payment of additional work, such charge to be~~ **added to their utility bill for metered water service charges** at the rate as specified in Schedule H, ~~not prorated,~~ while the said meter or ~~accessory~~ **appurtenance** remains inaccessible.

**If a customer served by a privately located meter fails to respond to the City's request to schedule an appointment to provide access to the meter or an appurtenance thereof for reading or maintenance, or fails to schedule an appointment within a reasonable amount of time, or fails to**

provide access on the scheduled date or at the scheduled time, the meter or appurtenance shall be deemed to be "inaccessible".

The Engineer or Collector may order the installation of a remote meter register. ~~Any~~ **If there is a delay in the installation of such register, the meter shall be deemed in this section to be an "inaccessible meter".**

Where in the opinion of the City Engineer a ~~customer~~ **privately**-located meter or ~~its accessory~~ **an appurtenance** is situated in an unsafe area or ~~where~~ its location creates a dangerous situation to a reader, the meter or ~~accessory~~ **appurtenance** shall be deemed to be an "inaccessible meter".

The Collector may order the service pipe "shut off" if ~~the~~ **a meter or accessory appurtenance** thereof remains inaccessible for reading and maintenance for a period longer than four months.

#### **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:
  - (i) upon installation,
  - (ii) annually,
  - (iii) after any cleaning or repair, and
  - (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 within 15 days of the test;
- (d) a completed 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.

#### **4.14 Backflow Prevention Administration Fees**

**Every backflow prevention assembly test report that is submitted must be accompanied by an administration fee, as specified in Schedule H.**

## APPENDIX D

### City of Vancouver Drinking Water System and Long-Term Strategies

Vancouver purchases bulk, treated drinking water from Metro Vancouver and the City is responsible for distribution and delivery to customers. The Waterworks Utility monitors and protects potable water quality, maintains infrastructure in a good state of repair, ensures efficient use of drinking water, manages water system resiliency for emergencies and plans for the sustainable and equitable supply for future generations.

The City's drinking water distribution network was built over the last 130 years and is valued at \$3.1 billion. The City's system includes 1,488 km of underground pipes, 101,000 service connections, 6,600 fire hydrants, 30,000 valves, and 25,000 water meters. Waterworks also operates a dedicated fire protection system for the Downtown, Kitsilano and Fairview areas, valued at \$70 million, consisting of 12 kilometres of dedicated seismically hardened high pressure pipes and two pumping stations.

#### Key Water Utility Services and Objectives

- **Water distribution** - Deliver clean, safe drinking water to all residents and businesses to meet their daily needs and provide a sufficient water supply for fire suppression. Ensure that water system assets are in good condition and well managed by replacing aging and deteriorating infrastructure. Adapt drinking water system to accommodate increased population, development and densification.
- **Emergency preparedness** – Support emergency preparedness through water for health safety and fire protection, emergency response planning, system resiliency improvements, strategically strengthening infrastructure, and increased access to water points within the public realm.
- **Water conservation and resource management** – Encourage, enable and regulate 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 regional water supplies.
- **Financial Sustainability** – Operate a fully cost-recovered utility, ensuring best value for customers and citizens while managing levels of service

#### Water Purchases and Water Demand Management

Bulk water purchases are the largest cost driver for the Vancouver Water Utility, making up forecasted 61% of annual expenditures for 2024. Not only is consumption the largest driver of costs, it also impacts regional water system performance and resiliency to population growth and climate change.

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-to late 2030s to avoid seasonal supply shortages. Metro Vancouver is currently in the planning phase of the Coquitlam Lake Water Supply Project, valued at approximately \$4B, which will double the capacity to withdraw water from Coquitlam Lake. Reducing consumption through water conservation efforts can help defer investments needed for capacity expansion in the regional system.

The City of Vancouver's per capita water consumption has been steadily decreasing, with a 27% reduction realized since 2006. This has allowed the total water purchases to decline over the last 20 years, even with population growth of almost 20% and more extreme weather impacts. The water consumption volume budget for 2024 has been set at 110,000,000 m<sup>3</sup> and actual usage will be influenced by many factors including weather, population growth and the economy. Enhanced strategic drinking water conservation and efficiency programs and additional investment in water demand management (increased residential water meter coverage, smart meter reading system (AMI) and rate structure revision) planned over the next decade are expected to further contribute to the downward per capita consumption trend and continue to lower Vancouver's draw on regional drinking water resources.

### **Water Utility Drivers and Pressures**

Pressures facing the drinking water utility include aging infrastructure, population growth, climate change, hazard vulnerabilities and evolving regulatory frameworks.

- **Aging Infrastructure:** Currently 22% of the \$3.1B City water system assets are in poor condition and deteriorating more rapidly than past renewal rates. A large portion of the City's water system will reach end of life over the next 30 years and will require renewal and upgrades to continue to meet demands and improve system resiliency. Increased investment is required to maintain current service performance and limit the number of assets in very poor condition.
- **Climate Change:** A changing climate impacts source water supply and potable water demand within the City, and these stresses are further compounded by population growth. Climate change is predicted to decrease winter snow and rainfall (water supply) and increase demand during hotter, drier summers. Policies and investments supporting water demand management to reduce per capita consumption will support the sustainable and efficient use of water drinking water resources allow the water system to be more resilient to acute climate events.
- **Hazard Vulnerabilities:** Seismic resiliency of the drinking water system continues to be a key area of improvement and investment. Events of the last several years have also emphasized the need for vulnerability assessments and emergency preparedness to also include health crisis events, such as a pandemic, and climate based events like "heat domes," and the impacts they have on demand for water services as well as the risks they can pose to system operation. It is a regional priority to build collaborative and cooperative strategies and guidelines for post-disaster response and provision of water. Investments in continuous improvement of emergency preparedness and response planning will ensure Vancouver is resilient to emergencies and ready to be a partner in regional water system response.
- **Regional Needs and Population Growth:** As the regional supplier of potable water, Metro Vancouver must also renew aging assets and is projected to require major system capacity upgrades to meet regional demand in the next 10 to 20 years. Vancouver's investments in reducing per capita consumption through water demand management in the next 10 years can influence medium and long-term strains on regional supply. This will also reduce Vancouver's portion of regional consumption and associated regional upgrade costs, such as the projected Coquitlam Lake Upgrades valued at \$4B. The region is collectively attempting to defer the need for this major supply upgrade by actively managing and reducing water demands. Metro Vancouver's Regional Guide on Residential Water Metering indicates that universal metering across the region in the next 10 years can have a significant impact on deferral of major water supply upgrades.

**Long-term Investment and Policy Directions**

- Implement a One Water approach to water resources management (potable, groundwater, rainwater, sewage, flood protection)
- Reduce potable water consumption and improve equity through universal water metering, advanced, smart metering technology, a more equitable rate structure to encourage conservation, and improved leak detection and management
- Increase rate of asset renewal to address an aging/deteriorating system, and maintain a reliable supply of potable water
- Support population growth and densification through upgrades to local and regional water systems and through innovative water conservation, efficiency and resource management approaches
- Expand the grid of seismically resilient water mains and improve emergency preparedness
- Increase citywide network of water fountains and other public access points for potable water, in recognition of access to water as a human right