



# New Rainwater Management Requirements for Part 3 Buildings

Phillip White & Andrew Power

December 7, 2023 | CP seminar

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Photo courtesy of Destination Vancouver.

## Summary

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[vancouver.ca/rainwater](https://vancouver.ca/rainwater)

1. No new rainwater management plans or legal agreements after December 31, 2023. Note: groundwater management plan regulations are unchanged.
2. Rainwater management will be a **basic expectation** of new **Part 3** buildings starting January 1, 2024, through the Vancouver Building By-law (Book II, Division B, Article 2.4.2.5.).



**Space must be provided in your building design.**  
*Roughly: 24 m<sup>3</sup> tank for a 1,000 m<sup>2</sup> site (10,760 ft<sup>2</sup>)  
(calculation: 24 mm x site area)*

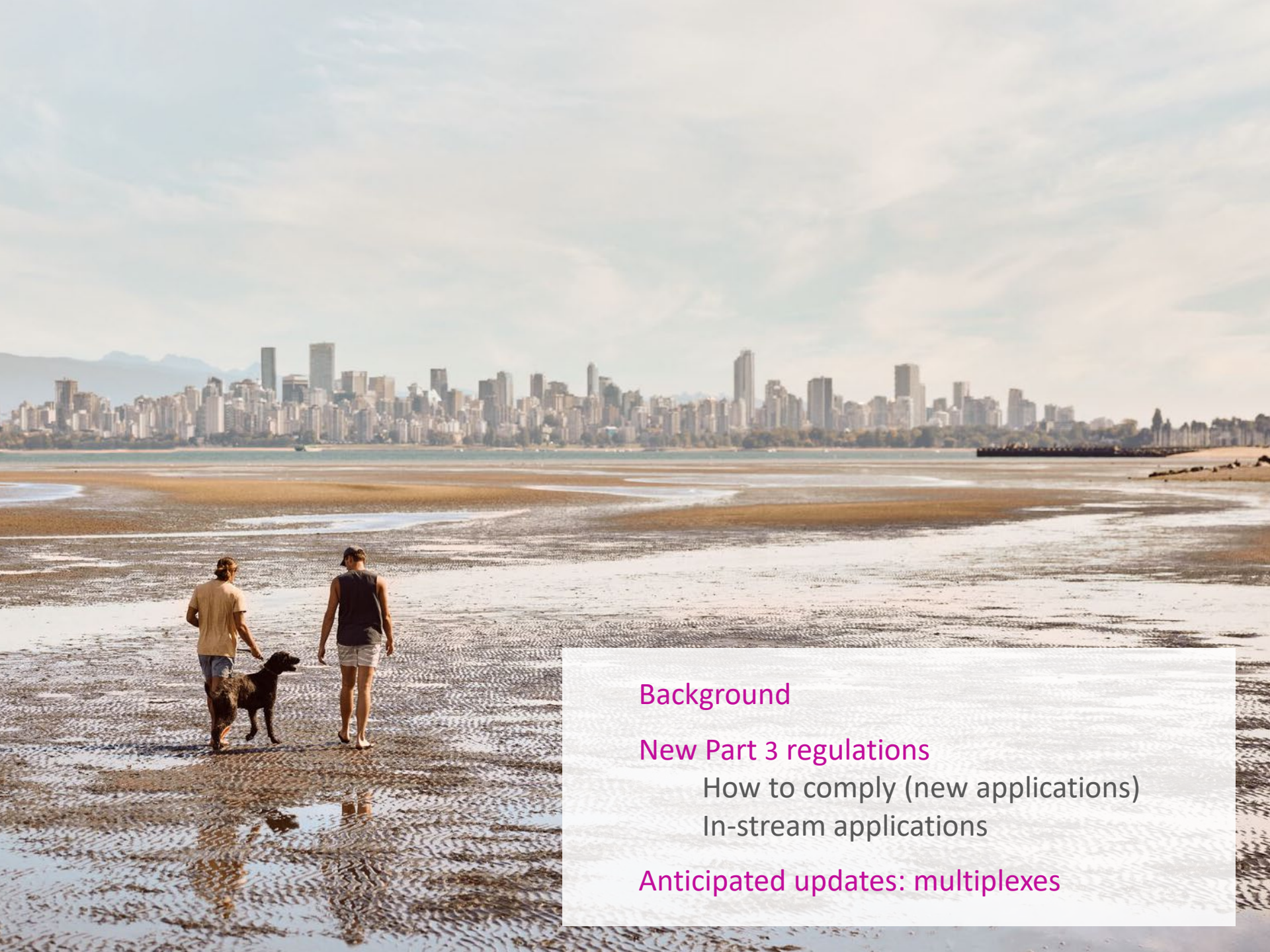
3. Compliance is demonstrated at the **plumbing permit** application stage. No rainwater management documentation is required at the rezoning and development permit stages.

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4. “In-stream” applications not requiring a rainwater management plan will be **sheltered** from the Building By-law requirements. This is assessed at the Plumbing Permit application stage.
5. “In-stream” applications requiring a rainwater management plan may be able to transition to the Building By-law process. Transition may occur up to the end of excavation and shoring.
6. Next virtual “open house” Q&A session: **December 12, 12 noon.** Register at [vancouver.ca/rainwater](https://vancouver.ca/rainwater)



Background

New Part 3 regulations

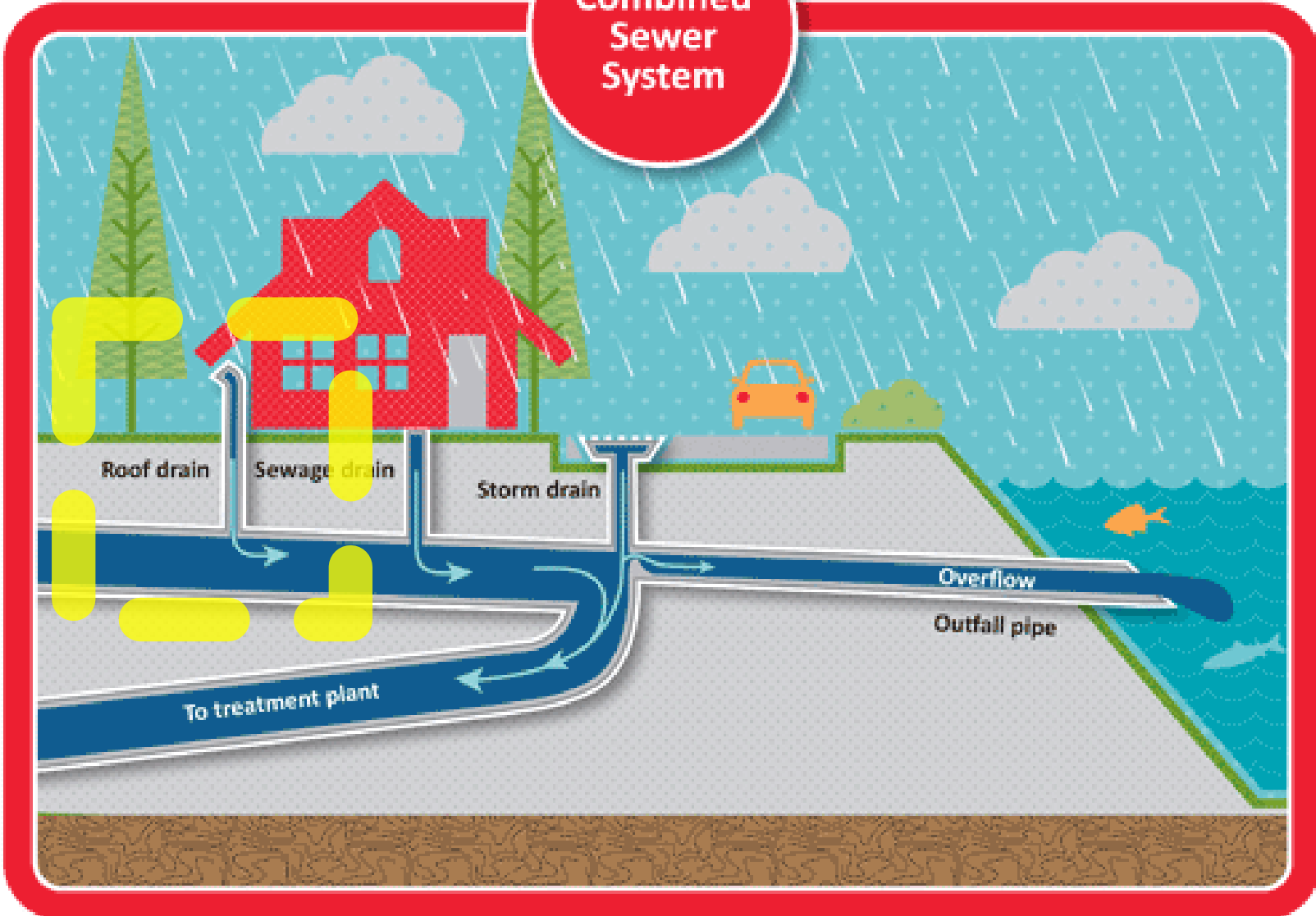
How to comply (new applications)

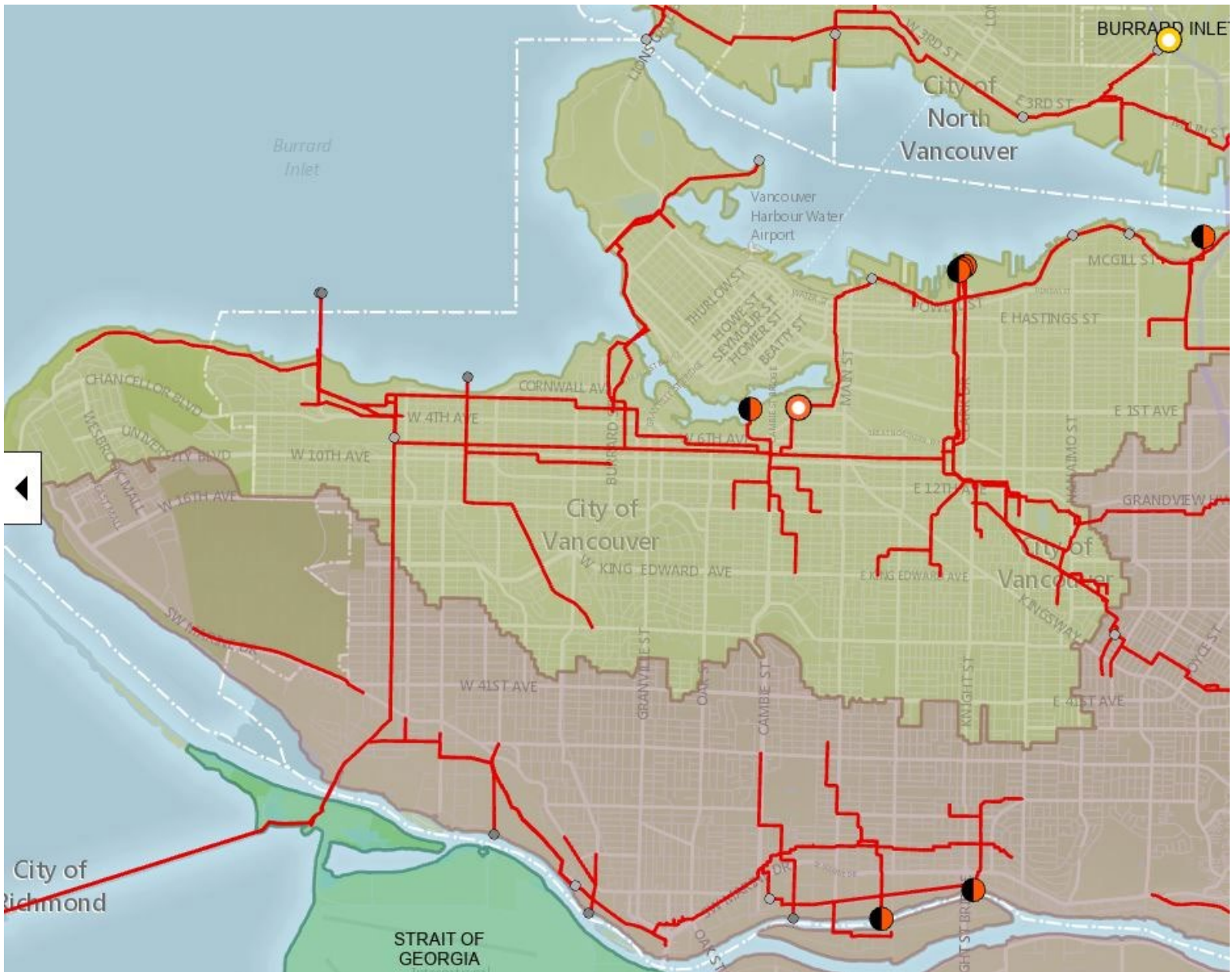
In-stream applications

Anticipated updates: multiplexes



# Combined Sewer System





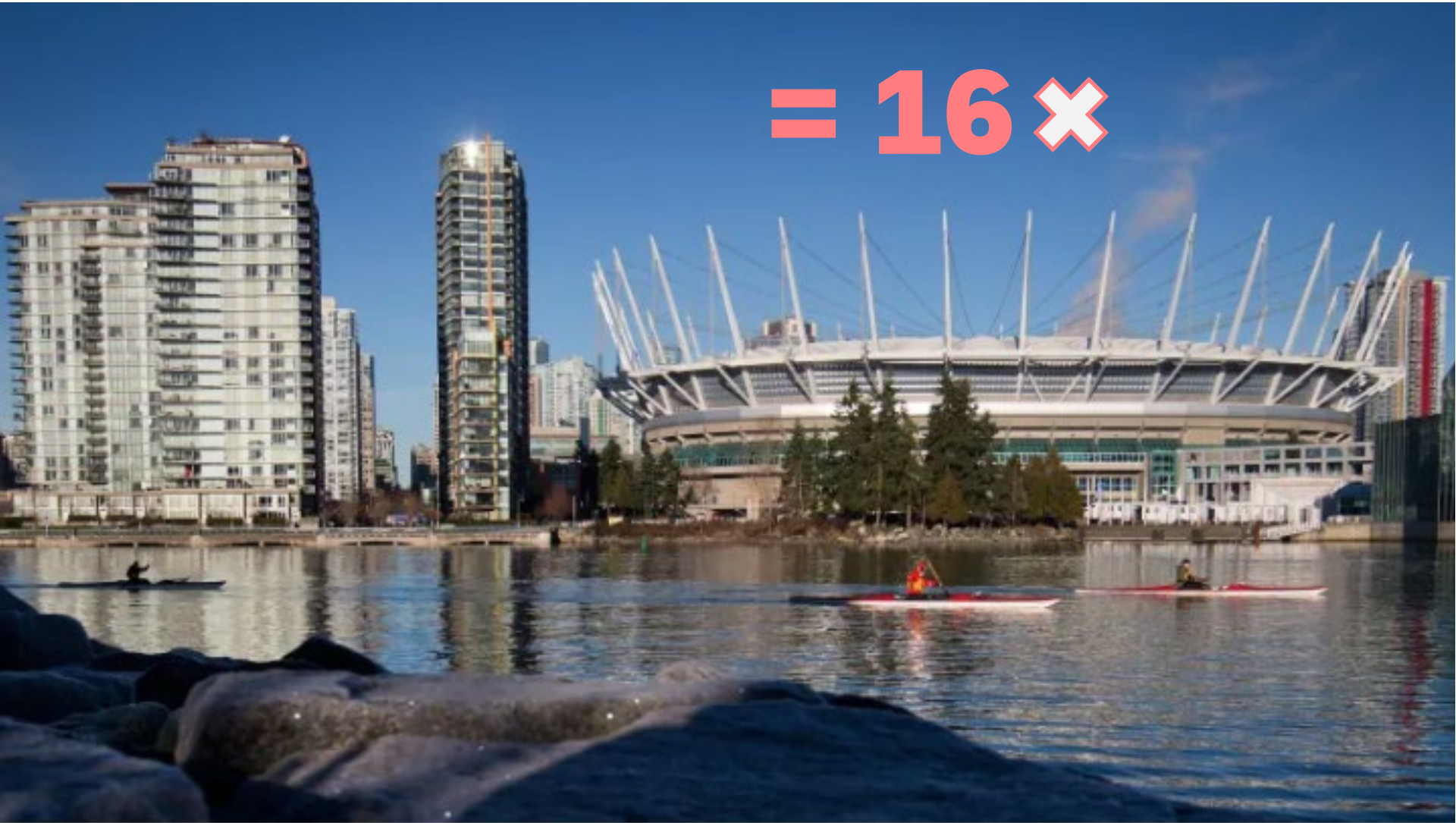
Source: <https://metrovancover.org/services/liquid-waste/real-time-sewer-overflow-map>



Source: Metro Vancouver

**38 billion litres** of sewer overflows (2020)

**= 16x**



Source: <https://council.vancouver.ca/20230613/documents/rr1.pdf>

Photo credit: [cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138](https://www.cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138)



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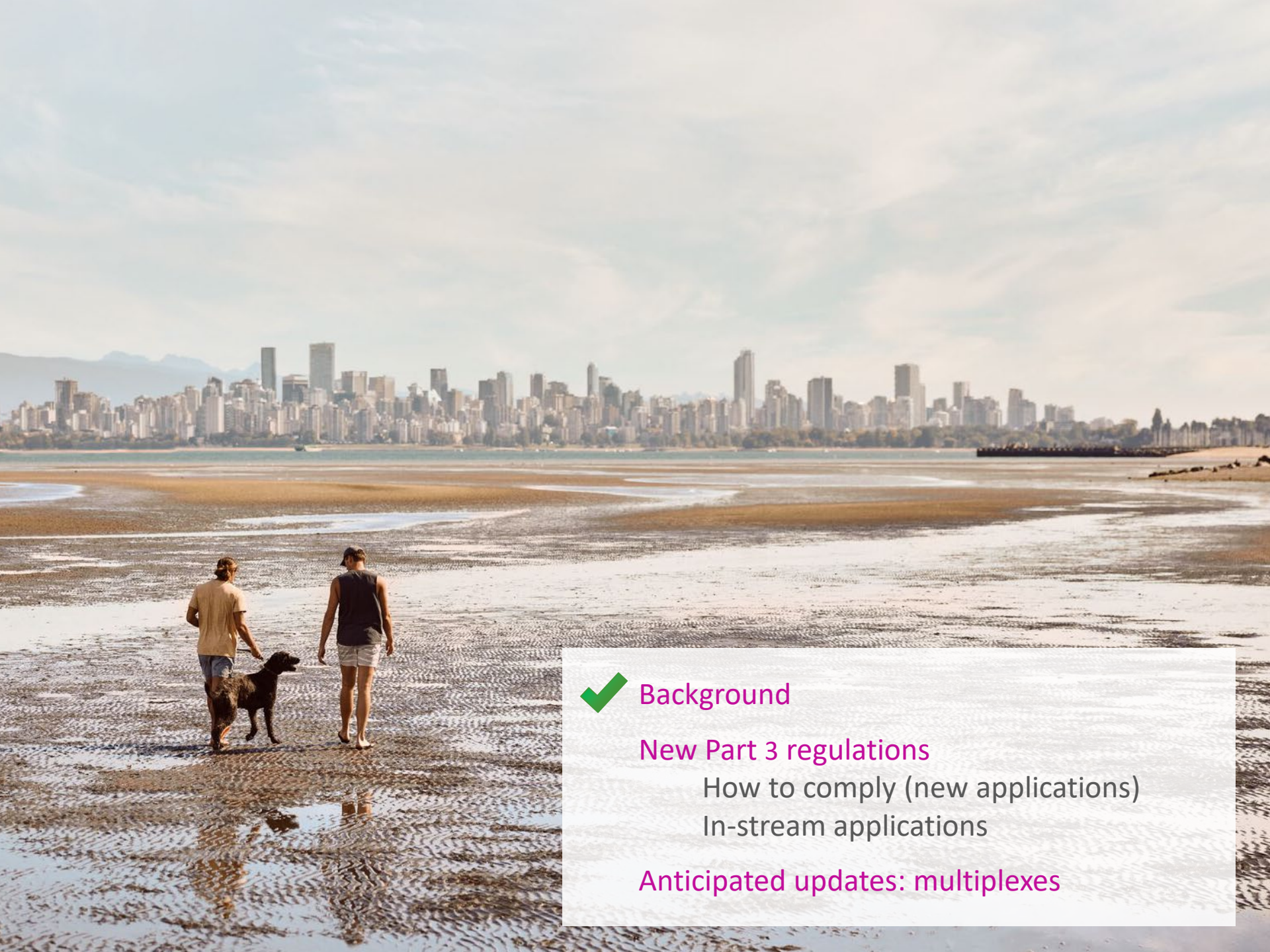
= **16x**

#### Relevant initiatives:

- Metro Vancouver Liquid Waste Management Plan (2024 update)
- Burrard Inlet Water Quality Objectives (Tsleil-Wututh Nation + Province)
- **Rain City Strategy**
- Pathways Study
- Healthy Waters Plan
- Aquatic Environments Action Plan
- Groundwater Management Strategy

Source: <https://council.vancouver.ca/20230613/documents/rr1.pdf>

Photo credit: [cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138](https://www.cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138)



## Background

### New Part 3 regulations

How to comply (new applications)

In-stream applications

Anticipated updates: multiplexes

## New Regulations: How to Comply (new applications)

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### Applicability as of Jan. 2024:

New Part 3 buildings, except those of solely residential occupancy up to 8 units.

Also excluded are alterations to existing buildings (Part 11).

## New Regulations: How to Comply (new applications)



### Requirements:

1. Retain/detain **24 mm** of rainwater in 24 hours.
2. Peak **release rate** control: post-development rate no greater than pre-development rate.
3. Operating manual.

### No longer required:

Water quality treatment for 80% total suspended solids (TSS) removal.

#### **Important note:**

Water quality standards for discharged storm water remain unchanged.  
(Sewer and Watercourse By-law, section 3)

## New Regulations: How to Comply (new applications)



### Plumbing Permit:


1. Project summary form
2. Site schematic
3. Calculations & references
4. Schedule B from the **plumbing** and **civil registered professionals of record**, as applicable

Reference: VBBL Book II, Division B, Article 2.4.2.5. as of January 1, 2024. Unofficial, advanced copy available at [vancouver.ca/rainwater](http://vancouver.ca/rainwater)

# New Regulations: How to Comply (new applications)

**RAINWATER MANAGEMENT PROJECT SUMMARY FORM**

This form summarises conformance to *Vancouver Building By-law Book II, Division B, Article 2.4.2.5*. It is to be submitted at the Plumbing Permit application stage with: a site schematic of rainwater management and drainage components, supporting calculations and references, and Schedule B from the plumbing registered professional of record and the civil registered professional of record, as applicable. Drawings and calculations must be sealed. See [vancouver.ca/rainwater](http://vancouver.ca/rainwater) for more information.



**SITE INFORMATION**

Line 1. Project address: \_\_\_\_\_

Line 2. Building permit number: \_\_\_\_\_

Line 3. Design completed by the following registered professionals:

Mechanical: \_\_\_\_\_ Civil: \_\_\_\_\_  
(first and second name and company) (first and second name and company)

Landscape: \_\_\_\_\_ Other (describe): \_\_\_\_\_  
(first and second name and company)

Form completed by: \_\_\_\_\_ Signature: \_\_\_\_\_ Today's Date: \_\_\_\_\_  
(first and second name and company) (DD / MM / YYYY)

**CAPTURE REQUIREMENT**

Line 4. Volume to be detained and/or retained: 24 mm x \_\_\_\_\_ m<sup>2</sup> = \_\_\_\_\_ m<sup>3</sup>  
(Site area)

Line 5. Total permitted reductions to detention volume requirement = \_\_\_\_\_ m<sup>3</sup>  
(Line 5 is the sum of Column C values in the table below)

Table for Line 5: Reductions to detention volume requirement (reference: Article 2.4.2.5.)

Retention or other practice	Maximum permitted reduction (Column A), m <sup>3</sup>	Limit to permitted reduction (Column B), m <sup>3</sup>	Permitted reduction (Column C), m <sup>3</sup>
Landscape features			
Vegetated (green) roof			
Non-potable water system (alternate water source system)			

Notes: \_\_\_\_\_

Line 6. Detention specifications:

a) Working capacity: \_\_\_\_\_ m<sup>3</sup> (Line 6a must be ≥ to Line 4 minus Line 5)

b) Draw-down time when at capacity: \_\_\_\_\_ hours

c) Confirm overflow operates by gravity:  YES  NO

**RELEASE RATE REQUIREMENT**

Line 7. Confirm release rate requirement:

a) Does the development permit "prior-to" letter or rezoning referral report (if applicable) require more stringent release rate control than Article 2.4.2.5?  YES  NO

b) If YES for (a), is the release rate designed to meet the criteria of the development permit "prior-to" letter or rezoning referral report (if applicable)?  YES  NO  Not Applicable

Line 8. Peak flow release rate, pre-development: \_\_\_\_\_ litres per second

Line 9. Maximum allowable peak flow release rate, post-development: \_\_\_\_\_ litres per second (Line 9 must be ≤ Line 8)

Line 10. Design (controlled) release rate, post-development: \_\_\_\_\_ litres per second (Line 10 must be ≤ Line 9)

Line 11. Return period used for:

a) Pre-development calculation: \_\_\_\_\_ years b) Post-development calculation: \_\_\_\_\_ years

## Plumbing Permit:

1. Project summary form
2. Site schematic
3. Calculations & references
4. Schedule B from the plumbing and civil registered professionals of record, as applicable

Available at  
[vancouver.ca/rainwater](http://vancouver.ca/rainwater)

Reference: VBBL Book II, Division B, Article 2.4.2.5. as of January 1, 2024. Unofficial, advanced copy available at [vancouver.ca/rainwater](http://vancouver.ca/rainwater)



## New Regulations: How to Comply (new applications)

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This development will be required to provide on-site rainwater management in accordance with Building By-law requirements (Book II, Division B, Article 2.4.2.5) in effect in January 2024.

Note to Applicant: The development will be required to demonstrate compliance with these requirements at the building permit application stage. See [vancouver.ca/rainwater](https://vancouver.ca/rainwater) for more information.

**SIMPLIFIED CONDITION**

## New Regulations: How to Comply (new applications)

**Table 3: Required Documentation at Each Development Stage**

	CD-1 Rezoning	Development Permit	Building Permit	Occupancy Permit
Preliminary RWMP	X			
Complete RWMP		X		
Final RWMP			X	
Rainwater Management Agreement		X		
O&M Manual			X	
Rainwater Management Project Summary Form <sup>1</sup>	X	X	X	
Sealed Letter				X

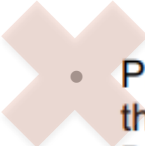
### Stop Action Conditions

⊕ New
📄 Export


Condition	Condition On
<span>📝</span> HOLD BP Stage 2 ("foundation to grade" works) until the final <b>Rainwater Management Plan</b> and Operations & Maintenance Manual has been submitted and accepted	012-357-570    601-113-50-0000 1640 ALBERNI STREET, Vancouver, BC V6G 1A7





**PART 1: CONDITIONS OF APPROVAL OF THE DEVELOPMENT APPLICATION**

- 
- Provision of a Rainwater Management Plan (RWMP) to demonstrate compliance with the relevant prescribed performance requirements as per the Zoning and Development By-law.

Note to Applicant: A RWMP is mandatory for all applications subject to the *Green Building Policy for Rezonings*. For more details on the requirements and what must be submitted at each development application stage, refer to the <https://bylaws.vancouver.ca/bulletin/bulletin-rainwatermanagement.pdf>.

- 
- Provision of a Rainwater Management Agreement to the satisfaction of the General Manager of Engineering Services and the Director of Legal Services registered prior to issuance of a Development Permit.

- 
- Provision of a final signed and sealed RWMP, which includes a written report, supporting calculations, computer models and drawings to the satisfaction of the General Manager of Engineering Services prior to the issuance of any building permit.

- 
- Provision of a final signed and sealed standalone rainwater Operations and Maintenance (O&M) Manual to the satisfaction of the General Manager of Engineering Services prior to the issuance of any building permit.

**OBSOLESCECD CONDITIONS**

## New Regulations: How to Comply (new applications)

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[vancouver.ca/rainwater](http://vancouver.ca/rainwater)

### Requirements

Show all

|

Hide all

-  New rezoning applications
-  New development permit applications
-  In-stream rezoning applications
-  In-stream development permit applications
-  Building permit applications

# Regulatory Reminder (Sewage Drain)

## WATER SAFETY AND EFFICIENCY REQUIREMENTS\*

EFFECTIVE JUNE 27, 2023

Maximum flush cycle, maximum flow rate and other requirements summarized below.



Vancouver's requirements are more strict than the BC Code

**SINGLE-PASS SYSTEMS, INCLUDING ONCE-THROUGH COOLING**  
Prohibited

**TOILETS**  
4.8 L/flush.  
Full flush on a dual-flush toilet shall not exceed 4.8 L

**URINALS**  
1.9 L/flush

**SHOWER HEADS\*\***  
7.6 L/min

**LAVATORY FAUCETS\*\***  
Private use 5.7 L/min + self-closing  
Public use 1.9 L/min

**KITCHEN FAUCETS\*\***  
Residential use 6.8 L/min  
Non-residential use 8.3 L/min

**PRE-RINSE SPRAY VALVES**  
4.8 L/min

**DISHWASHERS**   
REQUIRED

**CLOTHES WASHERS**   
REQUIRED

**ICE MAKERS**   
REQUIRED

**COMMERCIAL STEAM COOKERS**   
REQUIRED

**COMBINATION OVENS**   
REQUIRED

**HOT WATER**  
Domestic hot water to be stored at a minimum of 60°C within a tank. A minimum of 49°C is required within a recirculation loop.

**COOLING TOWERS AND EVAPORATIVE CONDENSERS**  
Operating permit required for new and existing systems. *Legionella pneumophila* reporting required at seasonal start-up and every month of operation.

**DECORATIVE WATER FEATURES†**  
Operating permit required for new and existing systems. *Legionella pneumophila* reporting required every two months of operation.

**BUILDING WATER TREATMENT SYSTEMS††**  
Operating permit required for new and existing systems treating potable water.

**ALTERNATE WATER SYSTEMS, INCLUDING RAINWATER HARVESTING††**  
Operating permit required for new and existing systems. Water quality reporting required every two months.

**PIPE SIZING & MATERIALS**  
IAPMO Water Demand Calculator may be used. New requirements for stainless steel. New, limited applications for cellular core PVC and fibrocement.

**GEOEXCHANGE SYSTEMS**  
Methanol use prohibited. Open-loop systems shall not discharge to sewer.

**VEHICLE WASH FACILITIES**  
**Automatic systems:** recycle at least 60% of water.  
**Self-service:** 11.4 L/min for foam brushes and spray wands.

**RESIDENTIAL LANDSCAPE IRRIGATION SYSTEMS**  
Pressure reducing valve may be required. Fertigation and chemigation prohibited.

For more information visit:  
[vancouver.ca/operating-permit](http://vancouver.ca/operating-permit)  
[vancouver.ca/building-bylaw](http://vancouver.ca/building-bylaw)

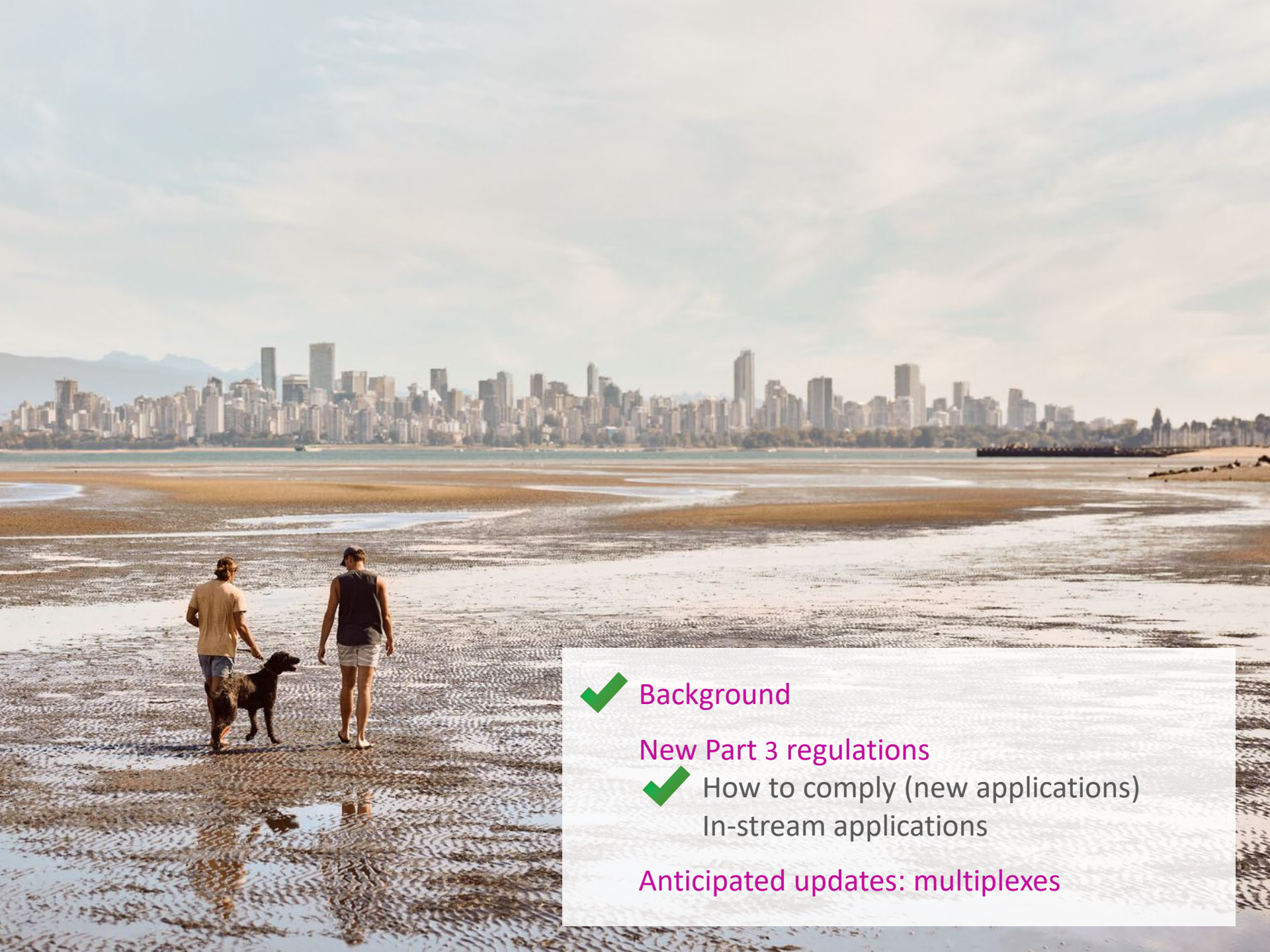


\* Summary does not include all applicable Vancouver Building By-law and Water Works By-law plumbing requirements.

\*\* Exempt are fixtures within treatment and care (Group B) occupancies and those listed in a professional water management plan.

† Exempt are systems for single-family homes and duplexes. Green walls, fish ponds, and natural bodies of water are also exempt.

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New Part 3 regulations



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## In-Stream Applications

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In-Stream* Development Application Type	Transition in January 2024
Did not require a rainwater management plan	<b>No change.</b> Sheltered from the Building By-law requirements.
Required a rainwater management plan	<b>Accelerated review.</b> If no DP issued by January 1, 2024, generally the application is eligible to transition to the Building By-law requirements, <u>upon request</u> .  The “water quality treatment requirement” would not generally need to be carried forward into construction for projects that transition to the simplified process.

\* Applications submitted before January 1, 2024.

# In-Stream Applications

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[vancouver.ca/rainwater](http://vancouver.ca/rainwater)

## How to comply

Show all

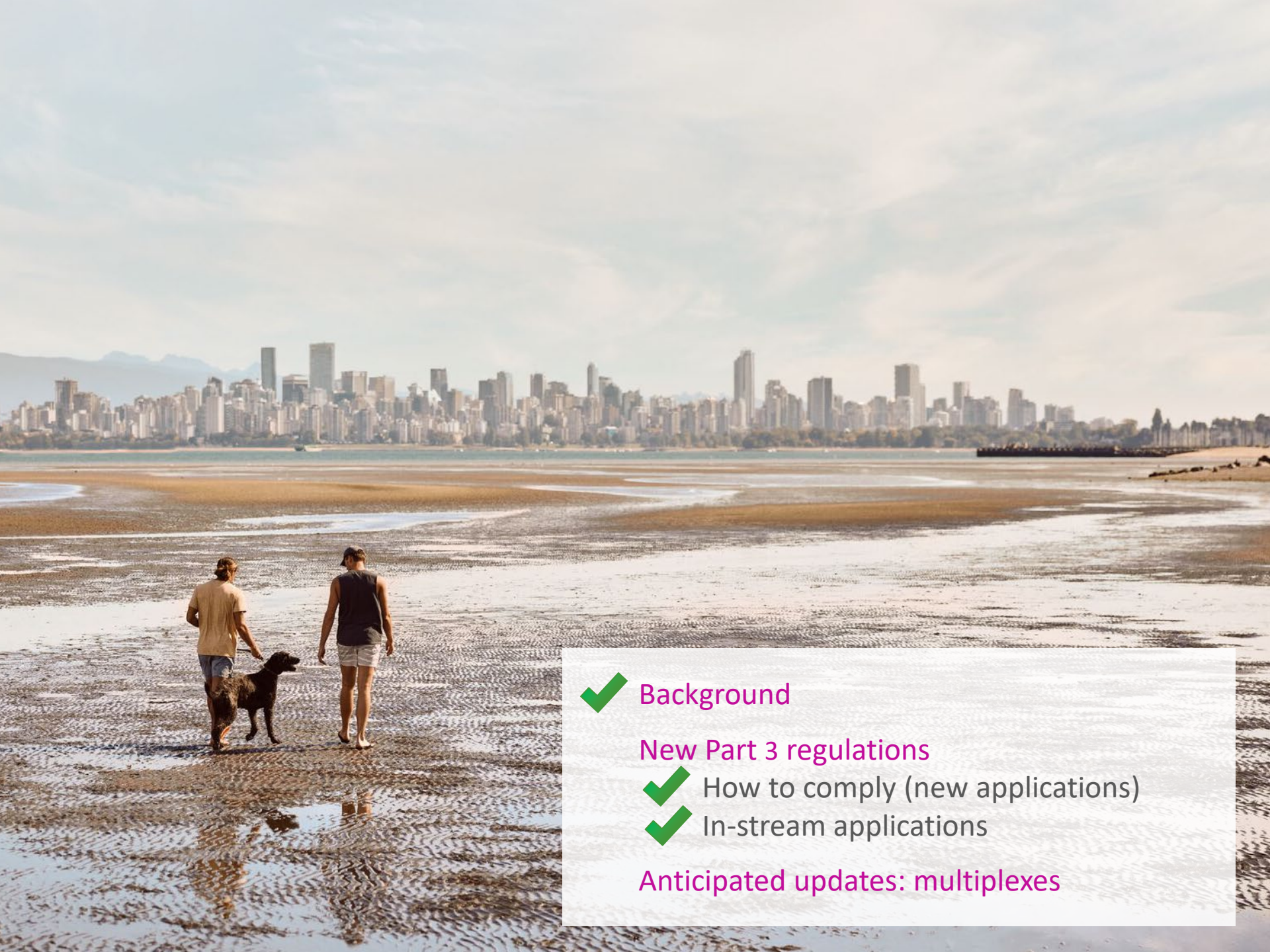
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 Plumbing permit

 Transitioning in-stream applications

 Sewer discharge

 Reference documents



Background

New Part 3 regulations



How to comply (new applications)



In-stream applications

Anticipated updates: multiplexes



# Anticipated Updates: Multiplex Rainwater Requirements

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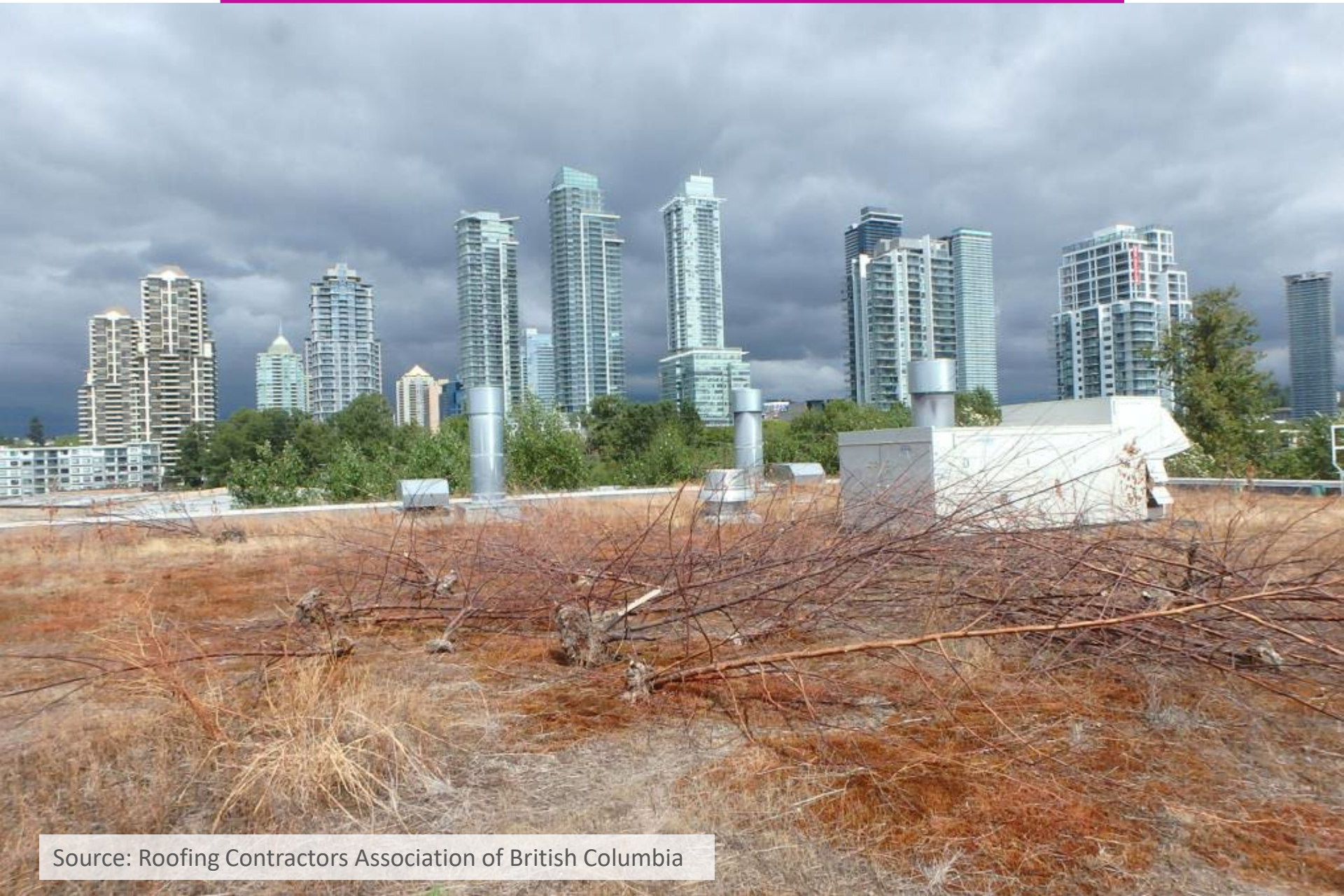
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[vancouver.ca/rainwater](https://vancouver.ca/rainwater)

1. Regulation will likely be a table of detention tank specifications based on lot size.
2. Proposals will be posted by January for public consultation at [vancouver.ca/rainwater](https://vancouver.ca/rainwater)
3. Seminar on proposals: **February 1, 2024**, 12 noon.  
Register at [vancouver.ca/rainwater](https://vancouver.ca/rainwater)

## Anticipated Updates: Improvements to Roofing

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Source: Roofing Contractors Association of British Columbia



2011



Source: [hydrotechmembrane.ca/resources/project\\_details.php?lang=en&id=236](http://hydrotechmembrane.ca/resources/project_details.php?lang=en&id=236)



2023



Source: City of Vancouver

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### In-stream application questions

[rainwater@vancouver.ca](mailto:rainwater@vancouver.ca)

#### **Andrew Power**

Project Manager

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#### **Phillip White**

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#### **Christopher Radziminski**

Building Policy Engineer

[chris.radziminski@vancouver.ca](mailto:chris.radziminski@vancouver.ca)

With thanks to **Peter Alm**

Senior Rainwater Management Engineer

who joins us for the Q&A

