

An aerial photograph of Vancouver, British Columbia, Canada, taken during the "golden hour" of sunset. The city's dense urban core, characterized by numerous high-rise buildings, is visible on the left and center. The city extends to the waterfront, where the Vancouver Convention Centre with its distinctive white sails is prominent in the lower right. The water of the harbor is calm, reflecting the warm light of the setting sun. In the background, the city gives way to green hills and mountains under a clear, hazy sky. The overall scene is a blend of urban development and natural beauty.

Rainwater Management: Why & What

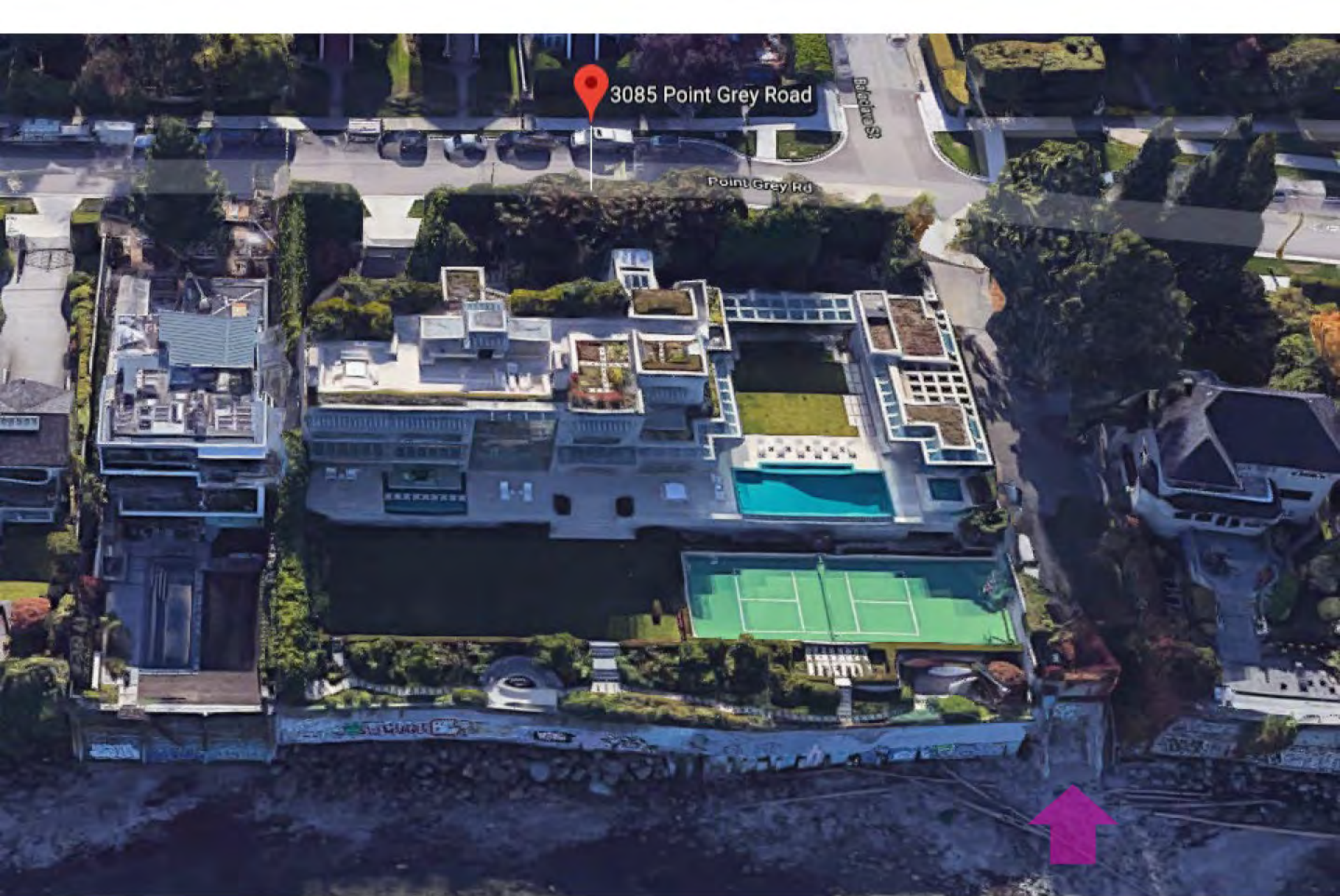
Christopher Radziminski & Phillip White
City of Vancouver
Development, Buildings & Licensing

February 28, 2023 | B.C. Building Envelope Council
Photo courtesy of Destination Vancouver



3085 Point Grey Rd. in Kitsilano. PHOTO BY NICK PROCAYLO /PNG

1. 3085 Point Grey Rd. – \$74.09 million

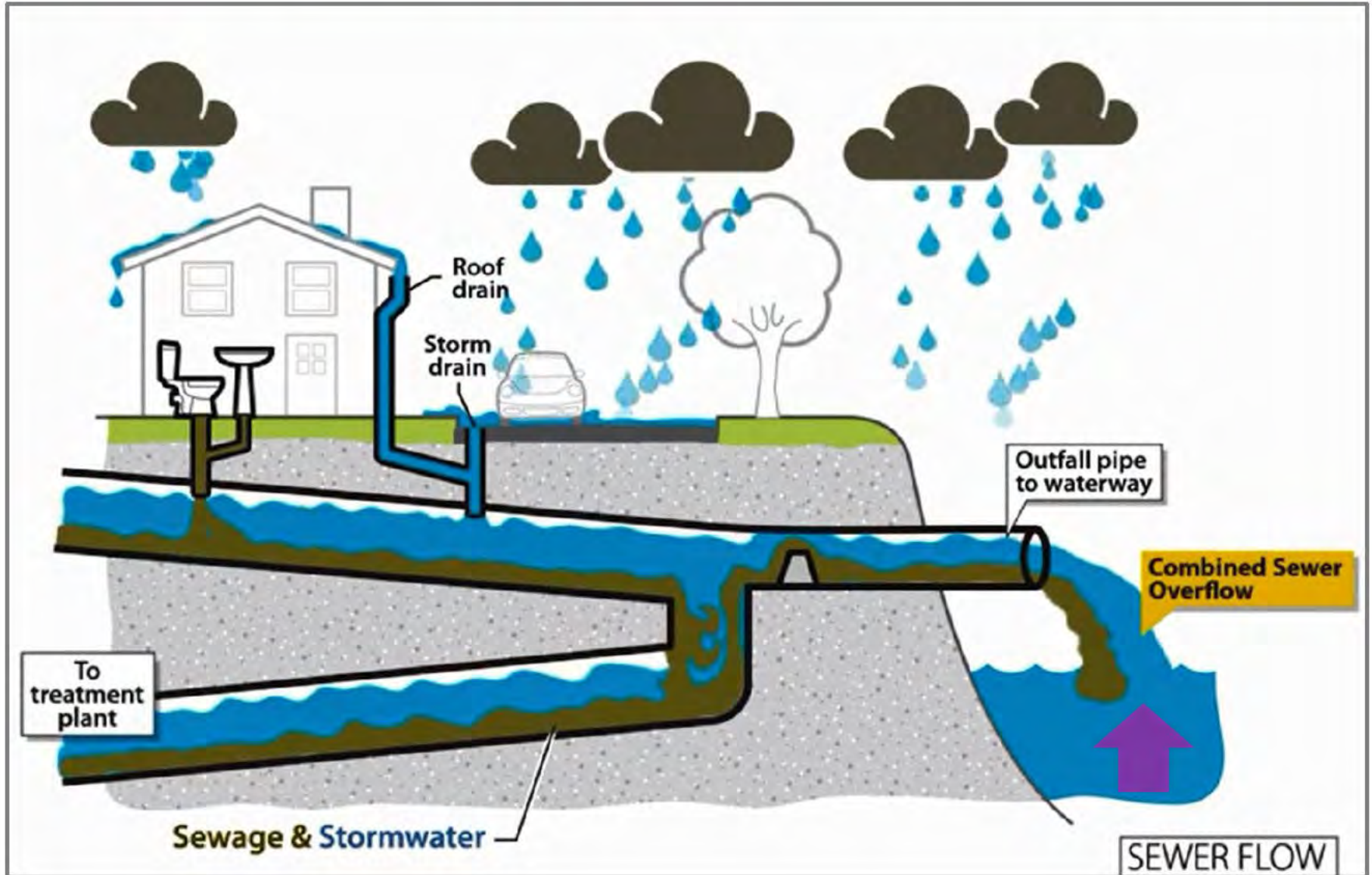


Source: Google Maps



Source: Metro Vancouver

10% of Vancouver's **sanitary sewage** is discharged as CSOs



38,000,000,000 litres in CSOs (2020)

Vancouver's Sunset Beach closed to swimmers due to E. coli levels

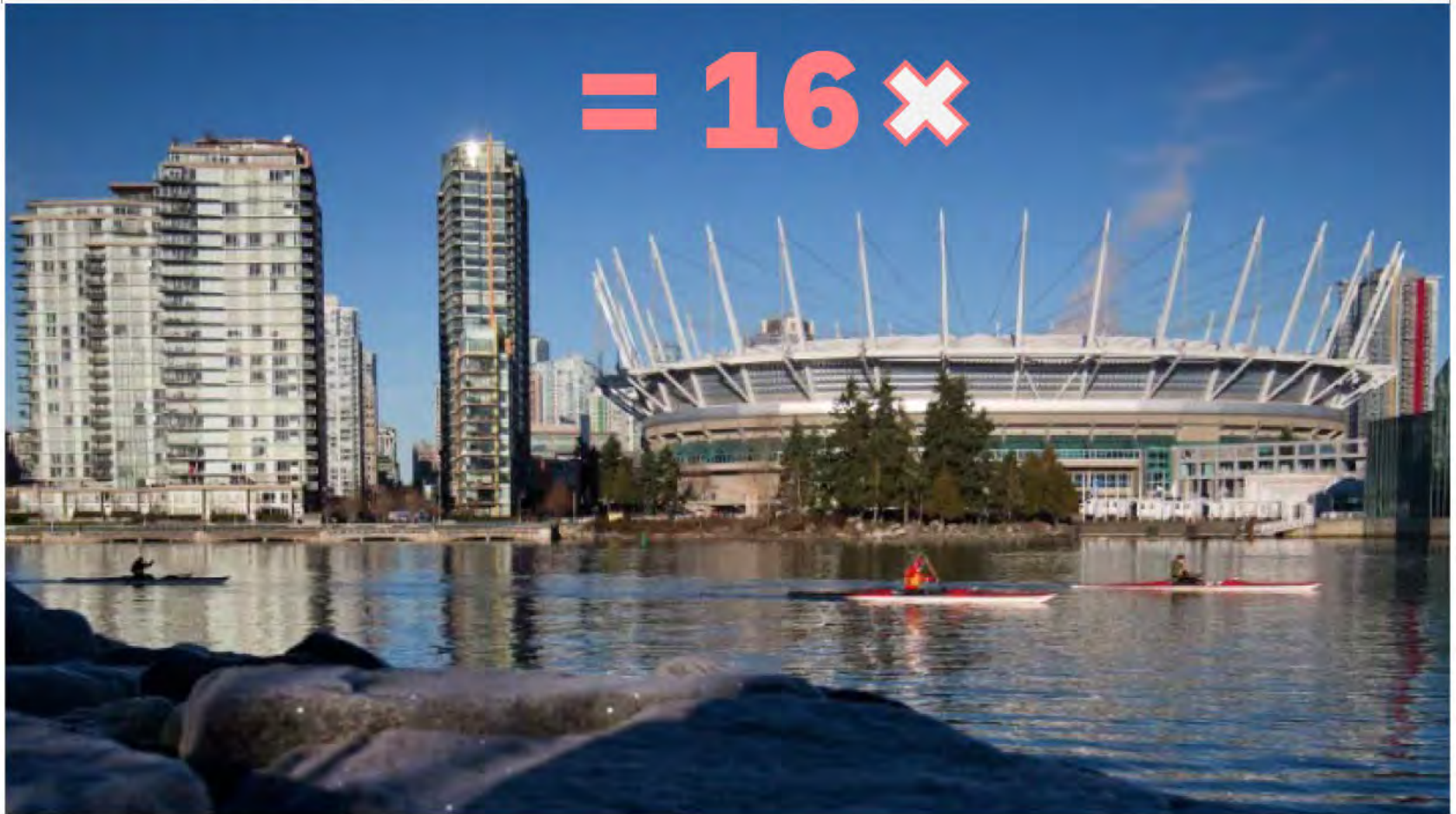
By The Canadian Press

Sun., Aug. 9, 2020 | 1 min. read



38,000,000,000 litres in CSOs (2020)

Vancouver's Sunset Beach closed to swimmers due to E. coli levels



Source: [cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138](https://www.cbc.ca/news/canada/british-columbia/bc-place-rename-1.5006138) (The Canadian Press / Darryl Dyck)



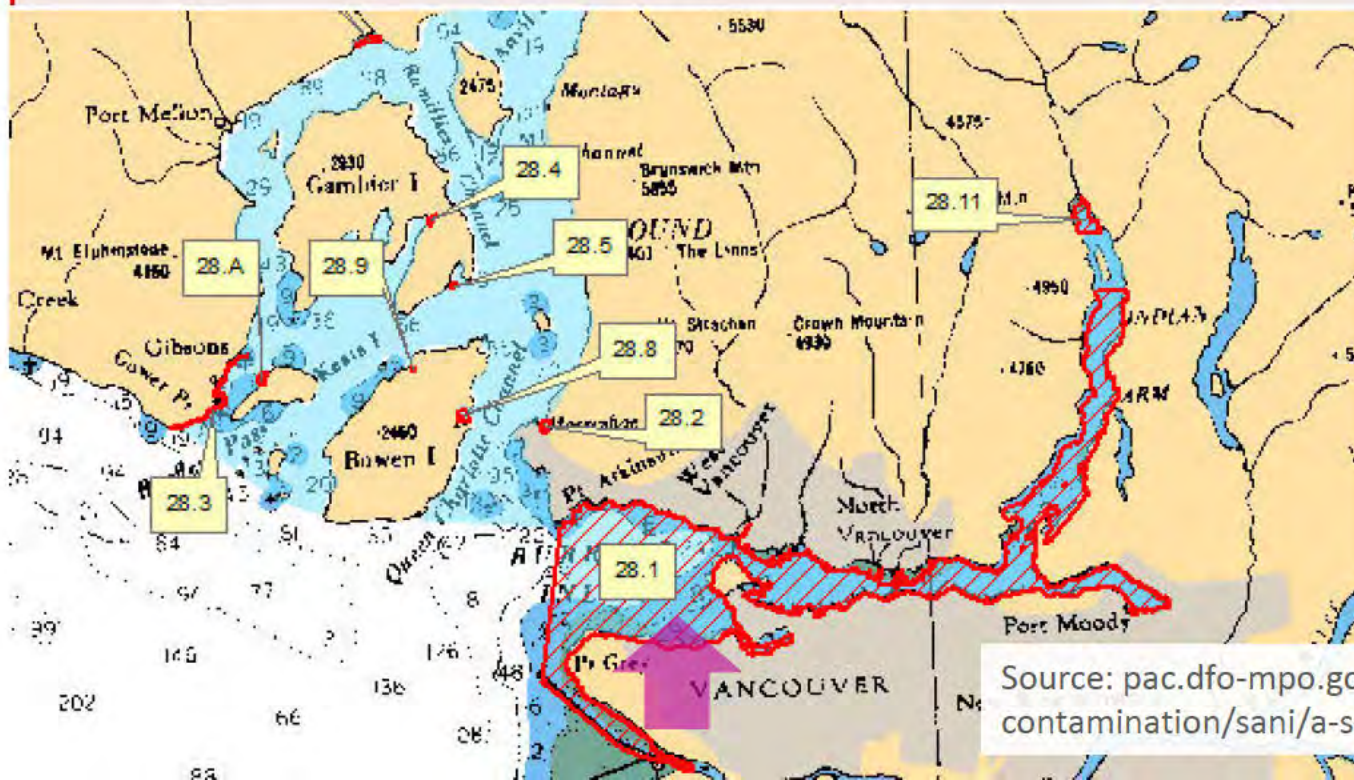
Closed 50+ years
(since 1972)

Area 28 - Sanitary contamination closures

! Important!

Eating contaminated shellfish can make you very sick. It can even be life threatening. Cooking shellfish does not destroy all biotoxins.

The shellfish you harvest and eat should always come from an open area. When an area is officially “closed,” it is both **illegal** and **unsafe** to harvest shellfish from that area. It is your responsibility to know where you are planning to harvest and to find out if the species you wish to harvest is open in that area.



Source: pac.dfo-mpo.gc.ca/fm-gp/contamination/sani/a-s-28-eng.html

CLOCK TURNED BACK TO STALINISM


Mayor 'Proves' Beaches Safe With 15-Minute Dip at Kitsilano



“frolic in the fecal surf”

Bob HUNTER

Pollution is too serious, too close to the ecological heart of things, to be treated as a hot-selling gimmick in the bargain basement of politics.



It is never since Mayor Tom Campbell has chosen to go swimming in Vancouver's toilet bowl, English Bay, to "prove" that the sewage be-

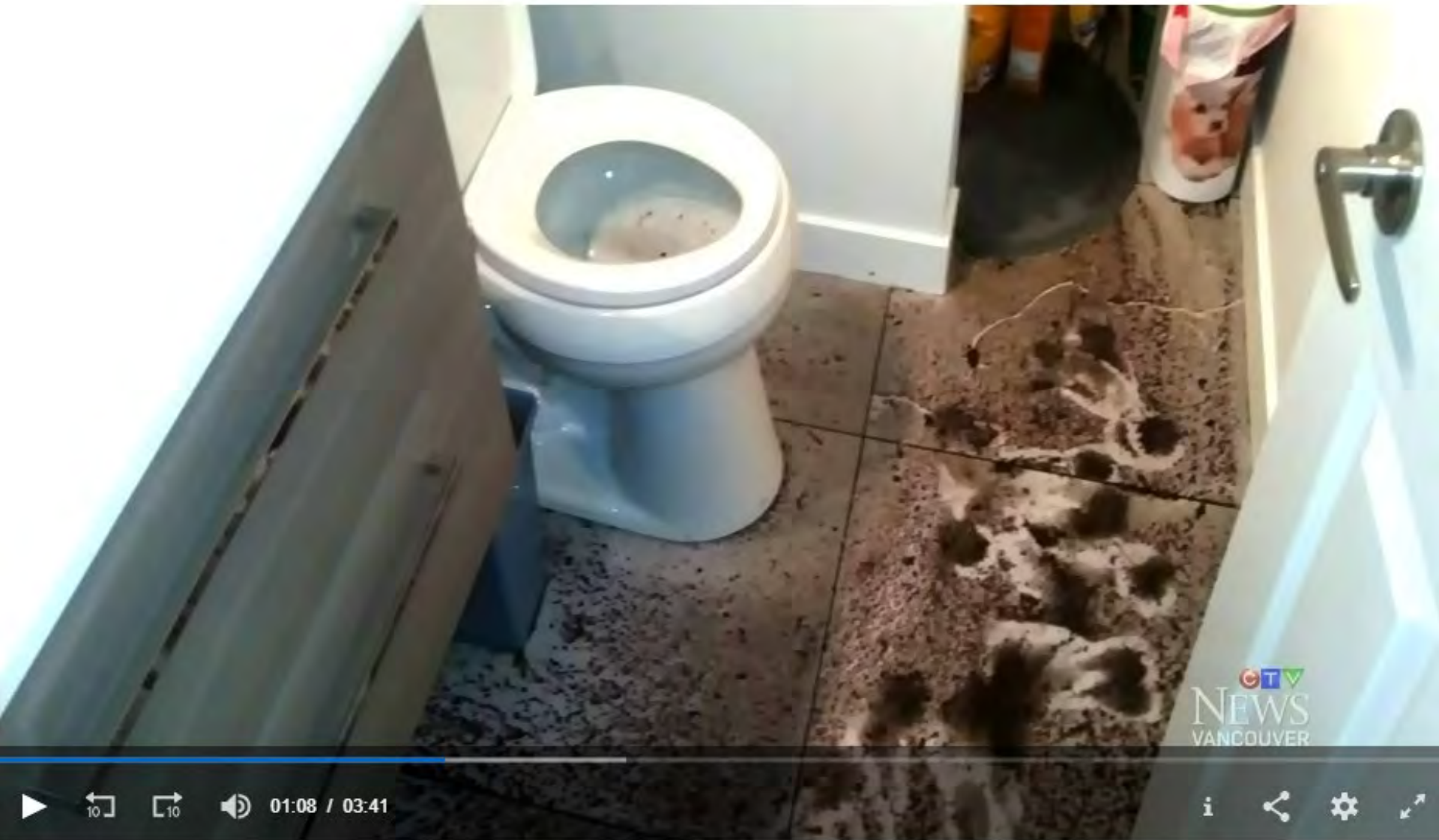


Combined Sewer Overflow (CSO)

Source: City of Hamilton, ON
[youtube.com/watch?v=iewH6iJMtS0](https://www.youtube.com/watch?v=iewH6iJMtS0)



East King Edward Avenue & Glen Drive, Vancouver
Source: [youtube.com/watch?v=5LCloopx6ks](https://www.youtube.com/watch?v=5LCloopx6ks)



CTV
NEWS
VANCOUVER

▶ ◀ 10 10 🔊 01:08 / 03:41

i 📶 ⚙️ ↗️

Cambie Corridor neighbourhood, Vancouver
Source: bc.ctvnews.ca/video?clipId=415780

Without sewer reinvestments, Vancouverites might be unable to flush toilets in 20 years



Kenneth Chan | Feb 23 2023, 4:26 pm



“The City’s sewer infrastructure ... is deteriorating at a more rapid rate than sewer renewal ... **growing inventory** of sewer assets in **poor** and **very poor condition.**” (21% → 29% in the next decade)

Sources: dailyhive.com/vancouver/vancouver-crumbling-infrastructure-cost-pressures, council.vancouver.ca/20221129/documents/spec1c.pdf, and council.vancouver.ca/20211201/documents/1c.pdf

An aerial photograph of Vancouver, British Columbia, Canada, showing the city's dense urban core, the waterfront, and the surrounding mountains. The city is built on a peninsula, with the water of the Burrard Inlet to the east and the Fraser River to the south. The mountains in the background are partially obscured by a light haze. The lighting suggests it is either early morning or late afternoon, with long shadows and a warm glow.

Rainwater Management: Why & What

1. Groundwater
2. Potable water → sanitary sewage
3. **Rainwater**

New!

As of March 7, 2023:
Option to size pipes
using the IAPMO Water
Demand Calculator

Bulletin

Rainwater Management Bulletin

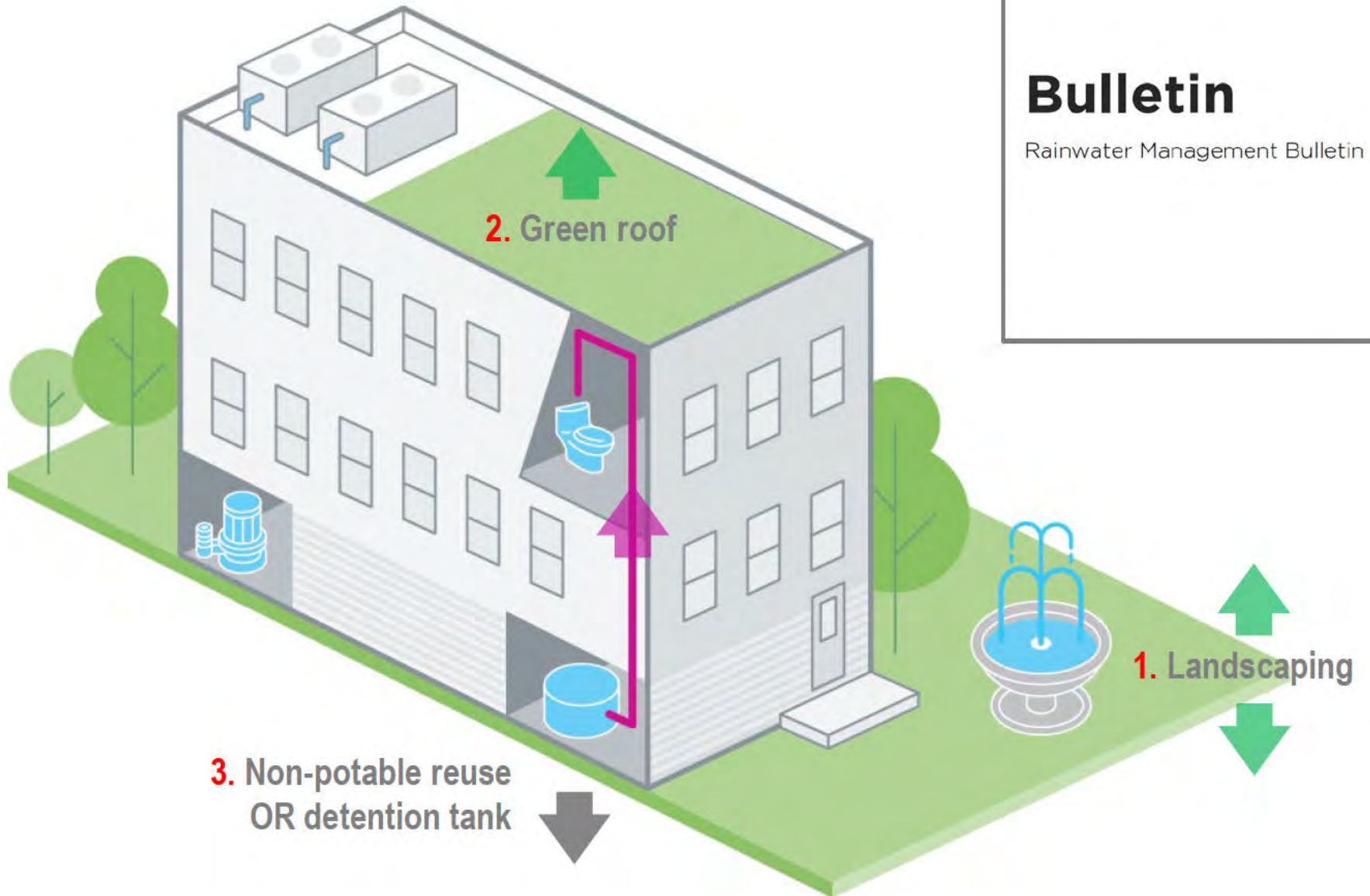


Table 3: Required Documentation at Each Development Stage

	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 ¹	X	X	X	
Sealed Letter				X

Bulletin

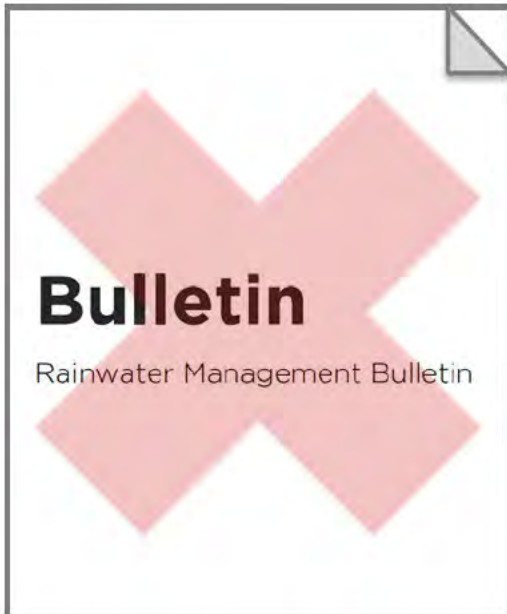
Rainwater Management Bulletin

1. Retain/detain **24 mm** of rainwater in 24 hours.
2. **Peak release rate** no greater post-development than pre-development.
3. Treat 24/48 mm of rainwater (80% total suspended solids removal).

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 ¹	X	X	X	
Sealed Letter				X

Proposed



1. Retain/detain **24 mm** of rainwater in 24 hours.
2. **Peak release rate** no greater post-development than pre-development.
3. Treat 24/48 mm of rainwater (80% total suspended solids removal).





Proposed

March 23, 2023
**Proposed Plumbing Requirements for New Buildings:
Rainwater Management and Public Health Protection Measures**

Dear stakeholder,

The City of Vancouver is proposing plumbing-related updates for new construction which would affect new developments city-wide. This letter is to invite your feedback. The proposals are expected to help simplify Development Permit issuance, relieve sewer system capacity constraints, and protect public health. This letter is divided into three sections, and you may choose to comment on one or more sections.

SECTION 1 - On-Site Rainwater Management (page 2)

Presently, certain new developments must provide a rainwater management plan. The proposal is to radically simplify the existing process: On January 1, 2024, rainwater requirements would transition out of the Zoning and Development By-law into the Vancouver Building By-law, and would be applied to all new Part 3 (complex) buildings. Existing permit applications would be protected in the transition.

SECTION 2 - Storm Water Use (page 5)

For new developments choosing to install a non-potable water system, the proposal allows for the use of storm water without an Alternative Solution application.

SECTION 3 - Hot Water Temperatures (page 6)

To lower the risk of *Legionella pneumophila* infections, minimum hot water temperatures are proposed, in alignment with best practices.

To provide your feedback, please submit written comments by April 3, 2023 by mail or e-mail to chris.radziminski@vancouver.ca. You are also invited to a free webinar on March 23, 2023 to learn more about the proposals. Register [here](#).

Yours truly,

Christopher Radziminski, P.Eng., R.P.Bio.
Building Policy Engineer
604.873.7453
chris.radziminski@vancouver.ca

Andrew Power
Project Manager
604.871.6125
andrew.power@vancouver.ca

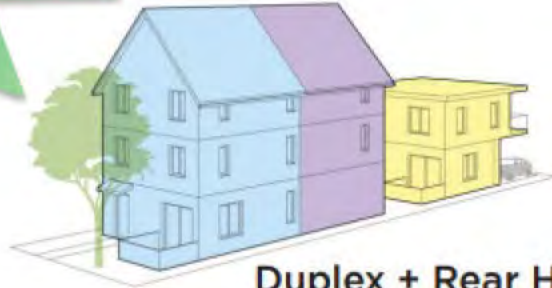
This week:
Stakeholder consultation letter.
One month comment period.
Refinement of proposals.

June & July 2023:
Referral Report to City Council.
Public Hearing.
Enacting By-laws.

January 1, 2024:
New regulations in effect,
with “in-stream” application
protection (similar to
2014→2019 VBBL transition).

New Multiplex Options (Illustrative Examples)

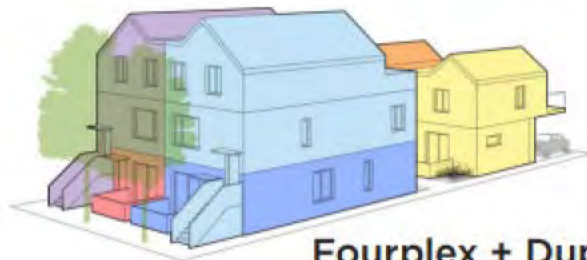
In
development



Duplex + Rear House
3 Units



Triplex
3 Units



Fourplex + Duplex
6 Units

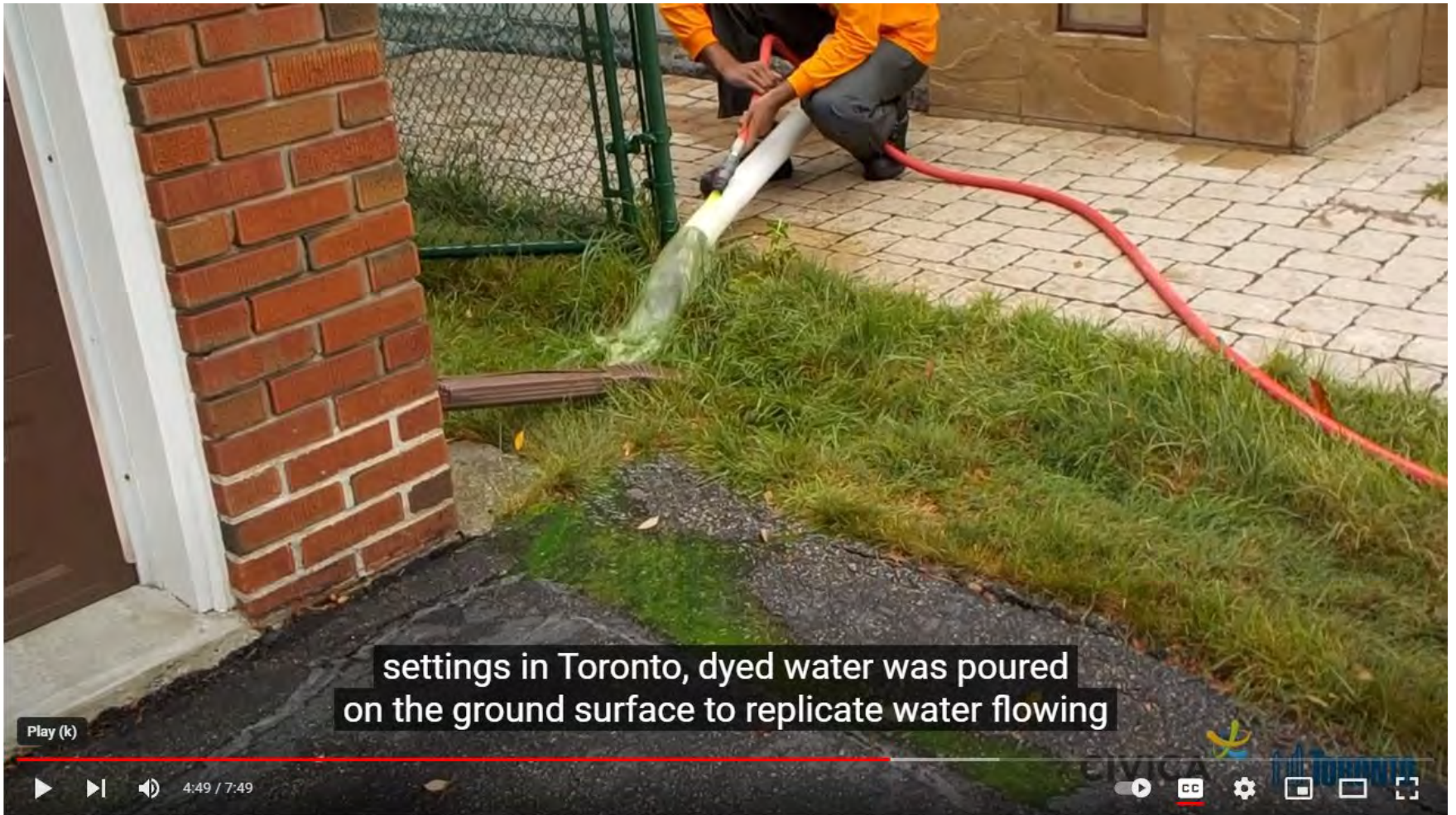
Congee Noodle House ordered to close after construction cave-in (PHOTOS)



Kenneth Chan | Feb 1 2020, 11:40 pm



Site of the construction pit collapse at 138 East 8th Avenue, Vancouver. (Kenneth Chan / Daily Hive)



settings in Toronto, dyed water was poured on the ground surface to replicate water flowing


Basement flooding investigation study: Inflow and infiltration


 thecityoftoronto
18.4K subscribers

Subscribe


 Like



 Share

 Download

 Clip

 Save



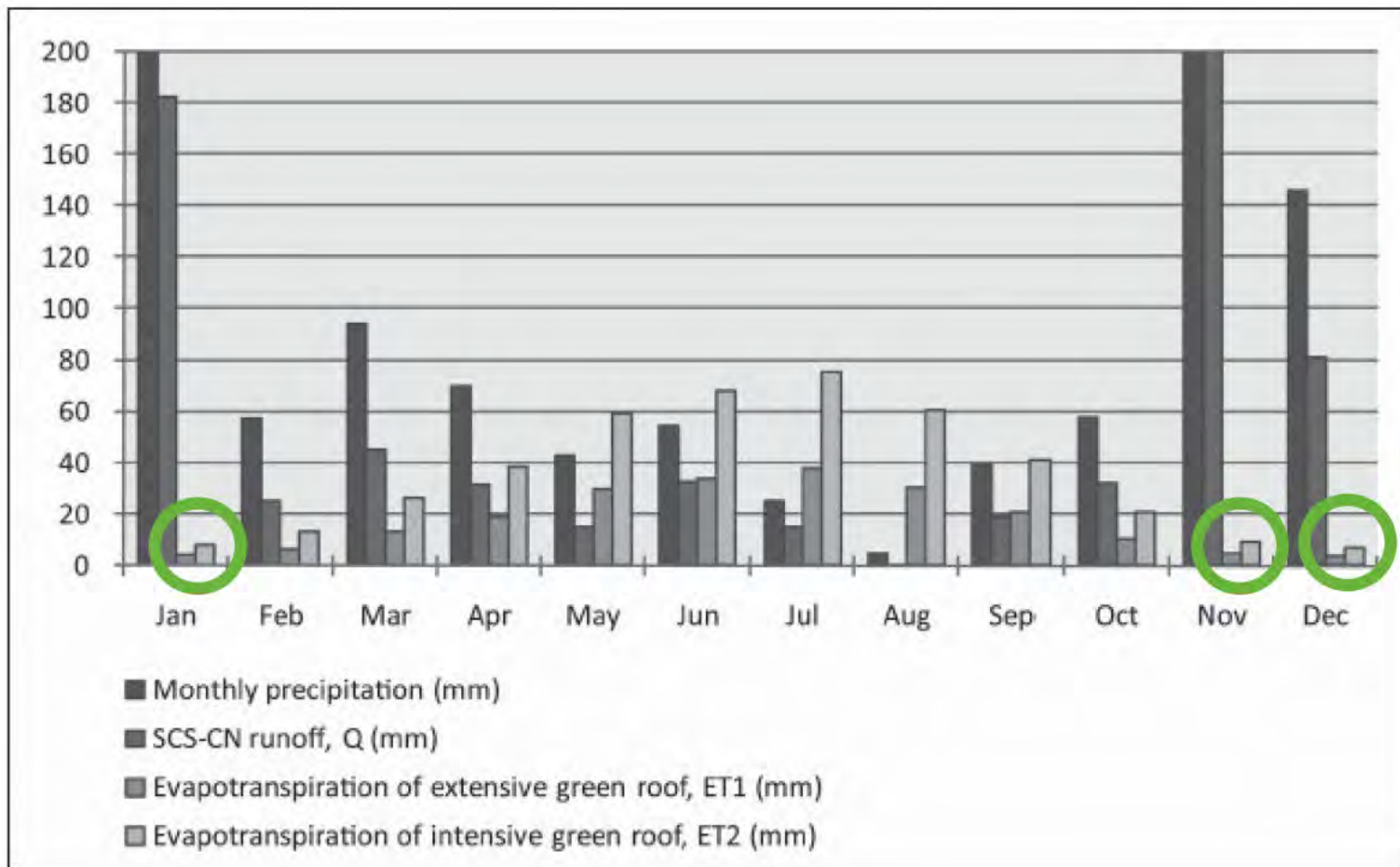
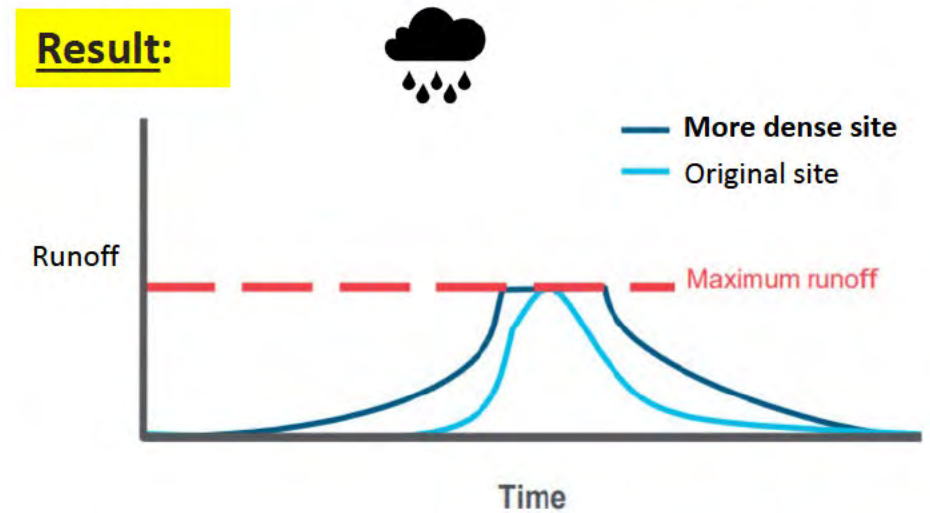
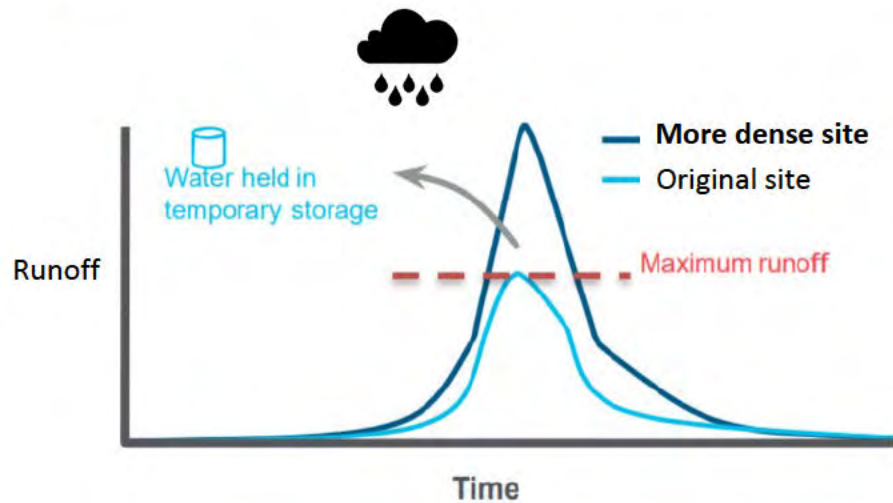


Figure 2. Precipitation, runoff, and evapotranspiration – Vancouver, BC.

“... results calculated for Vancouver, the proposed green roofs ... can reduce summer runoff by 95%, **winter runoff by 8%**, and annual runoff by 29%.”

Source: Roehr & Kong (2010) Runoff Reduction Effects of Green Roofs in Vancouver, BC, Kelowna, BC, and Shanghai, P.R. China, *Canadian Water Resources Journal* 35:1, doi.org/10.4296/cwrj3501053



Sources: BARR Plastics, graphs adapted from Wellington Water (NZ)



Table 2 – Sewer Utility Rate Outlook 2023-2027

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

By 2027:

↑ 101%

Table 2 – Water Utility Rate Outlook 2023-2027

Water Utility Rate Forecasts	2023	2024	2025	2026	2027
Metro Rate Increase	2.8%	9.0%	13.8%	12.8%	13.8%
Proposed City Rate Increase	3.0%	8.0%	8.0%	9.0%	10.0%

↑ 44%

Sources: BARR Plastics, council.vancouver.ca/20221129/documents/spec1c.pdf, and council.vancouver.ca/20221129/documents/spec1b.pdf

Contact & Questions

Christopher Radziminski

City of Vancouver

Building Policy Engineer

604 873 7453, chris.radziminski@vancouver.ca

Phillip White

City of Vancouver, Manager,

Plumbing & Mechanical Inspections

604 873 7609, phillip.white@vancouver.ca

