

A photograph of a flooded city street. In the center, three emergency responders in high-visibility yellow gear are in a red inflatable raft, navigating through the murky, fast-moving floodwater. To the left, a dark-colored utility truck is partially submerged. The street is lined with lush green trees and modern multi-story apartment buildings in the background. A street sign with a question mark and an arrow is visible on the right side of the road. The sky is overcast.

# 16 July 2024 Storm Event

Elvis Oliveira – Director Water and Wastewater Infrastructure Planning

October 2024



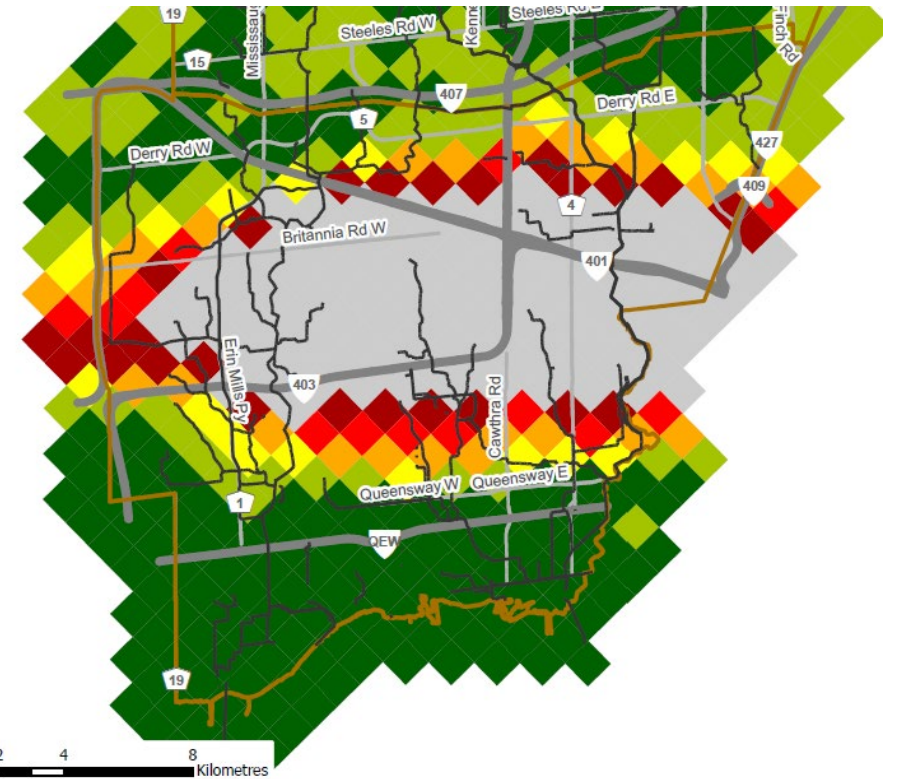
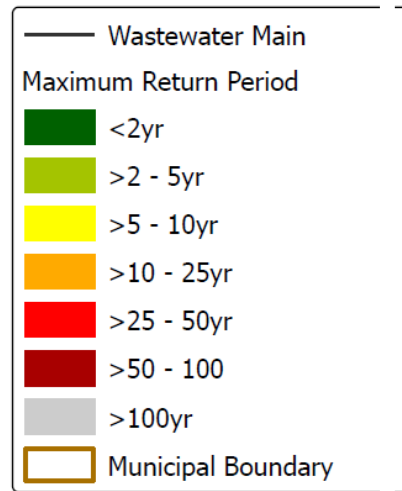
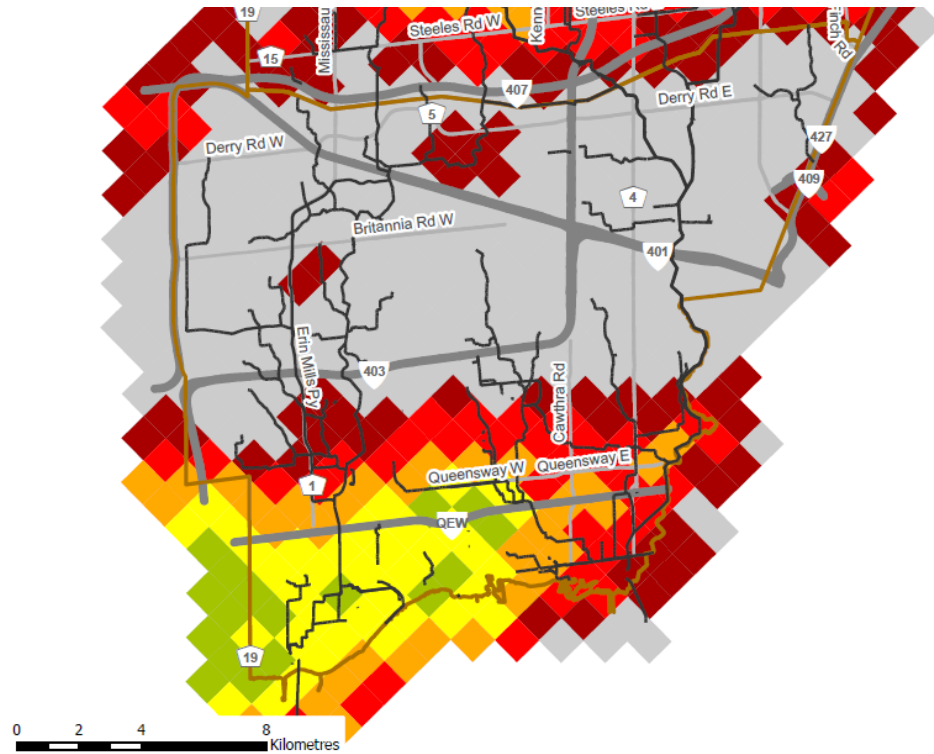
# 100-Year Storms

Average Monthly July Rainfall **75mm to 85mm**

Max 24-hour Rainfall on July 8, 2023 **101mm**

Max 24-hour Rainfall on July 16, 2024 **143mm**

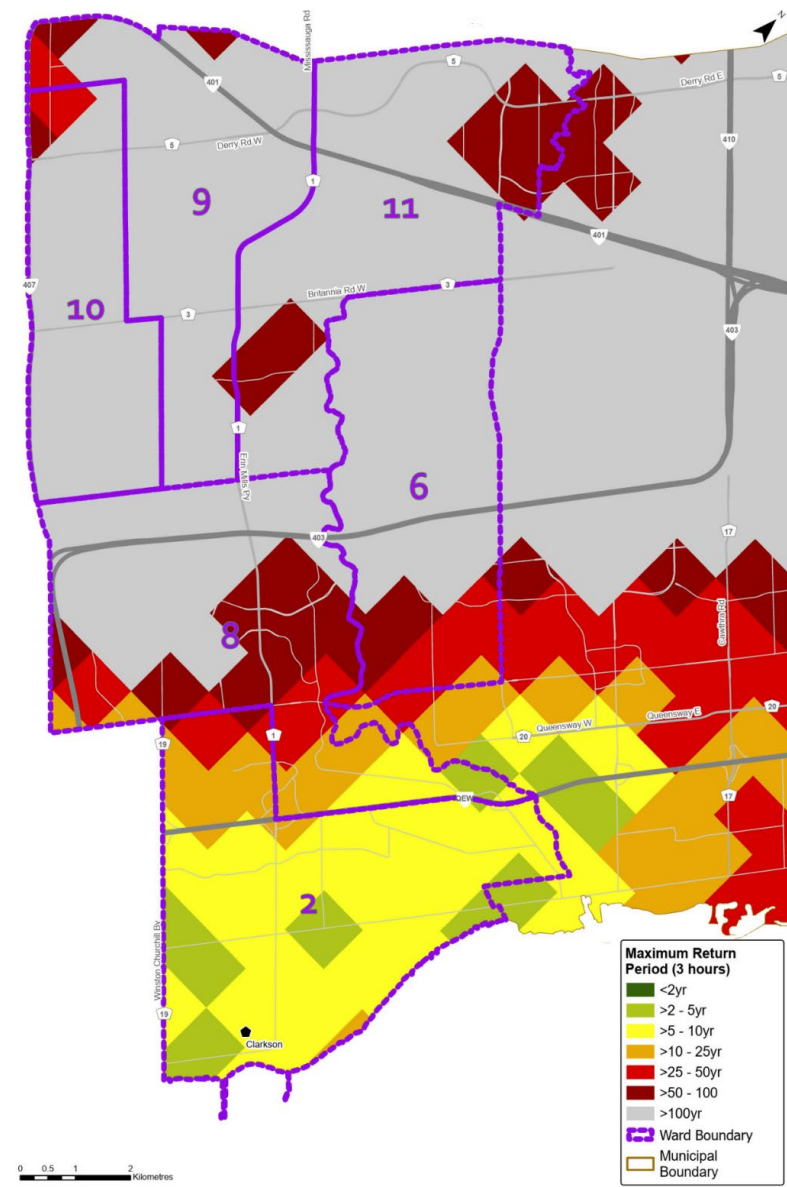
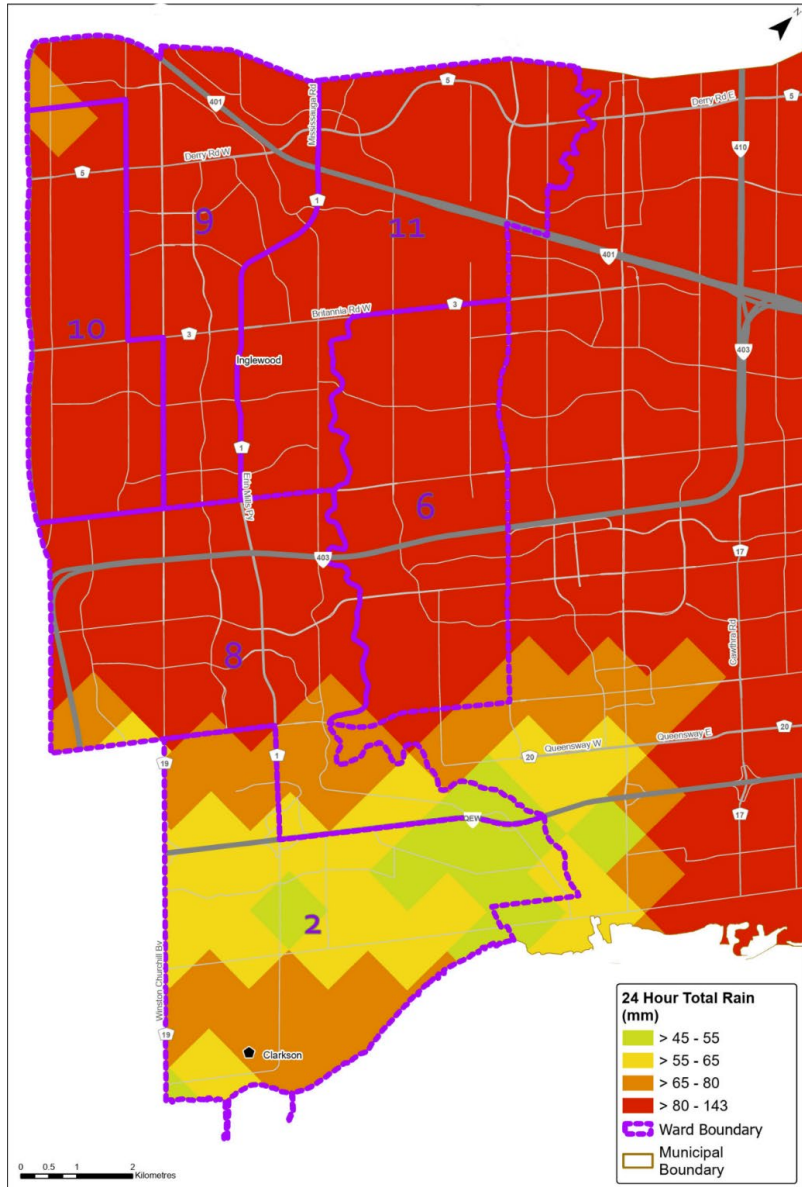
Max 24-hour Rainfall on August 17, 2024 **143mm**



July 2024 Storm

August 2024 Storm

# July 15, 2024 Storm





# Managing stormwater is a shared responsibility

Your home



City of Mississauga



Conservation Authorities



Wastewater system is distinct

Wastewater from your home/business



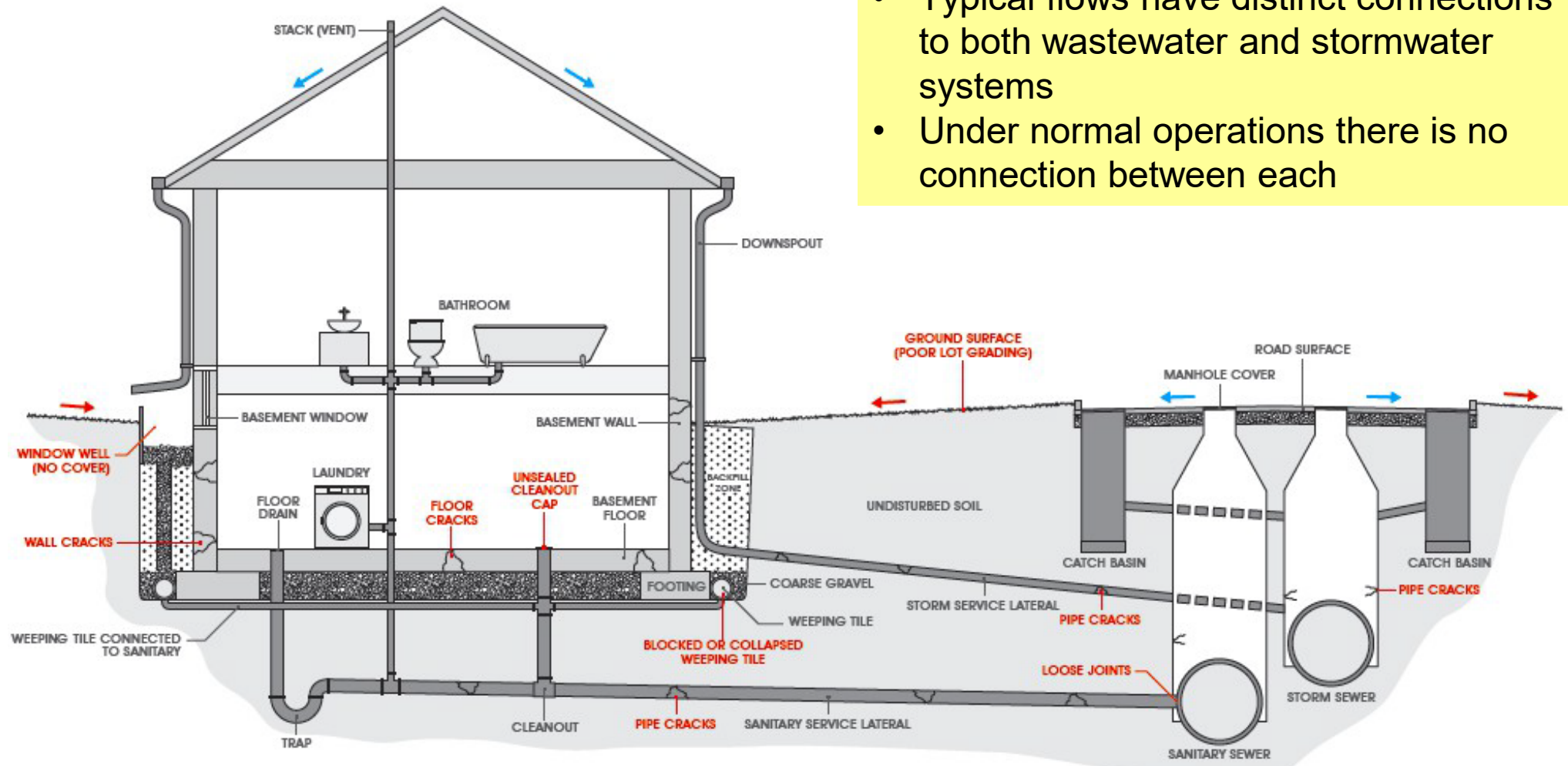
Region of Peel Sewage System

Water Resource Recovery Facility (for treatment)



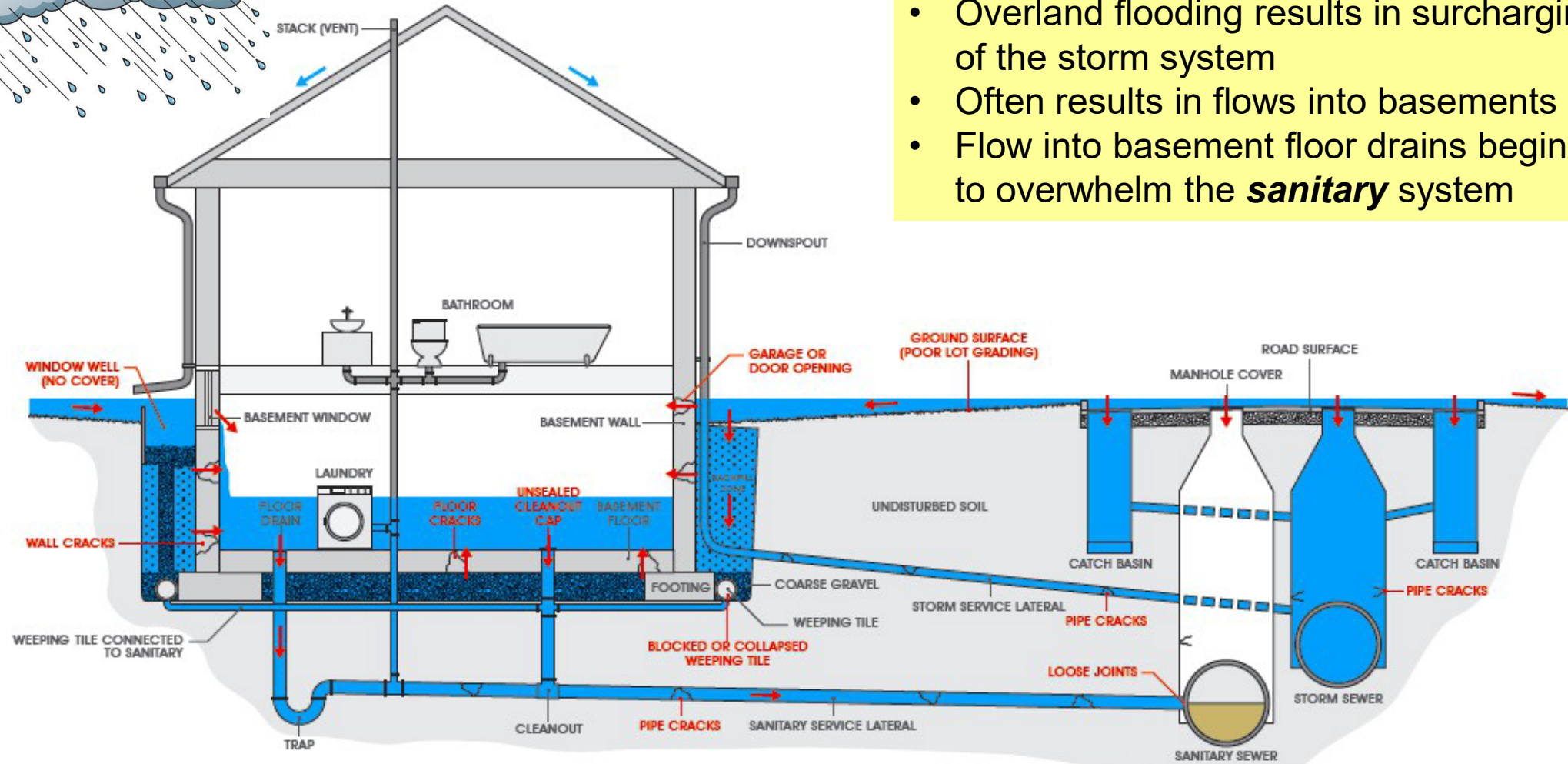
# Sanitary vs. Storm Infrastructure – Normal State

- Typical flows have distinct connections to both wastewater and stormwater systems
- Under normal operations there is no connection between each





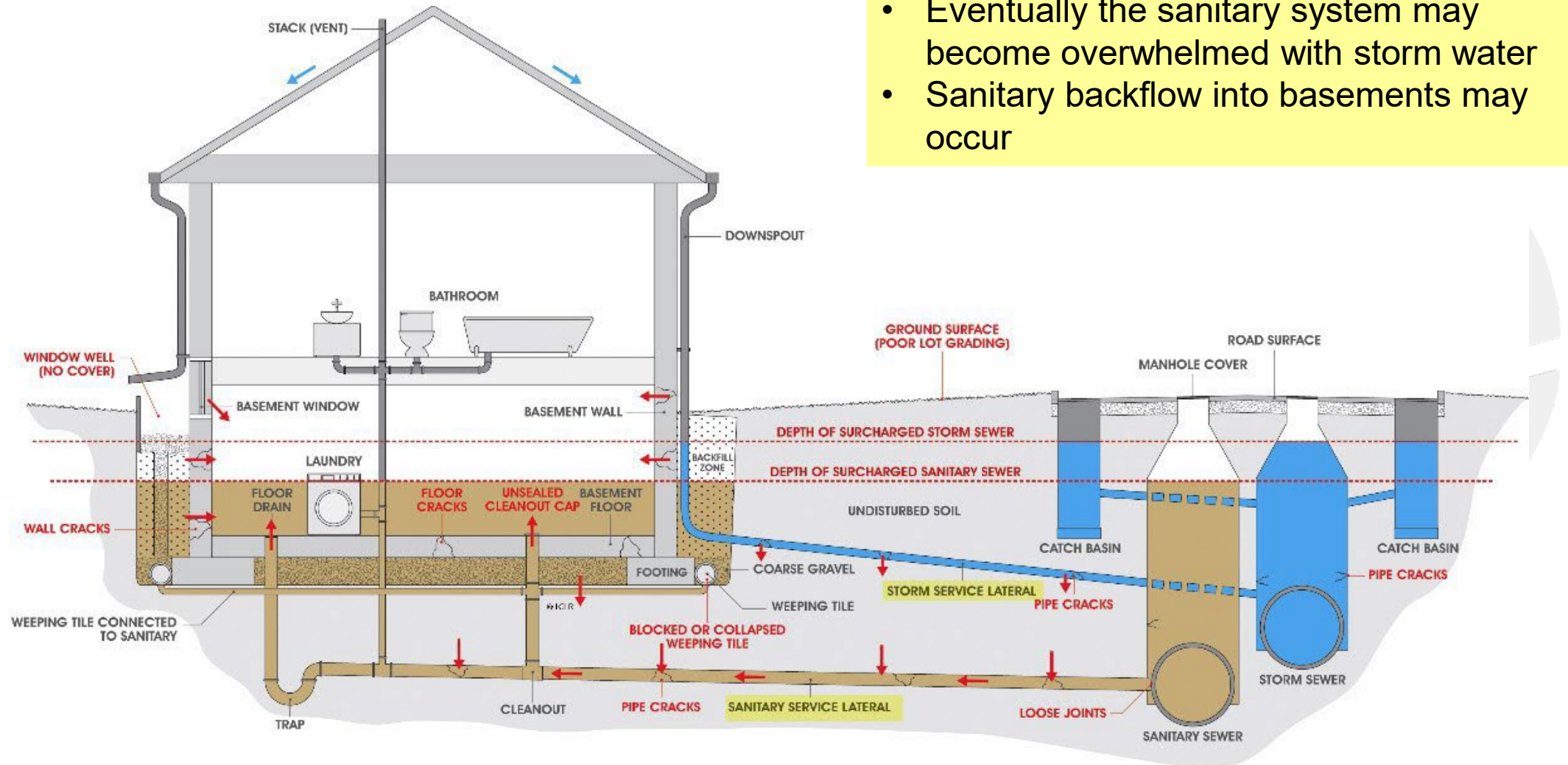
# During Major Storms (*Flooding*)



- Overland flooding results in surcharging of the storm system
- Often results in flows into basements
- Flow into basement floor drains begins to overwhelm the *sanitary* system

# Surcharged Condition (Sanitary)

- Eventually the sanitary system may become overwhelmed with storm water
- Sanitary backflow into basements may occur



# What is the Region doing for homeowners?



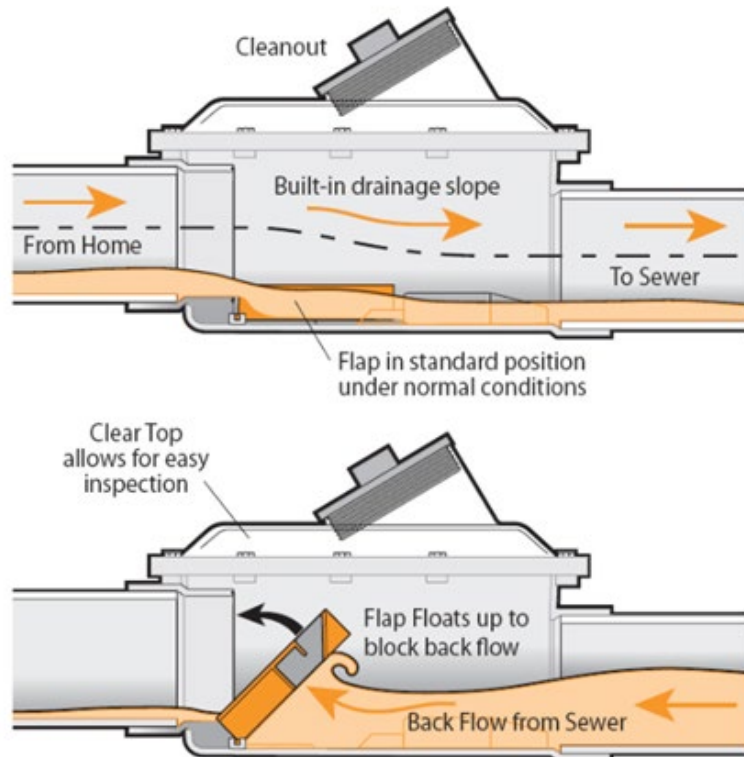


# Peel Region Sanitary Backwater Valve Rebate

[www.peelregion.ca/wastewater/backwater-valve-rebate](http://www.peelregion.ca/wastewater/backwater-valve-rebate)

Contact the Region 905-791-7800 #4409

How does a backwater valve work?



1. Check with Peel for eligibility: Flood insurance claim or property is in a Region of Peel priority flood vulnerable area.
  2. Obtain a building permit from the City.
  3. Installation inspection by the City.
  4. Submit a rebate application to the Region of Peel.
- The rebate recently increased by Regional Council to 60% of the invoiced cost up to a maximum of **\$1500**
  - Homeowners who have previously received a rebate from Peel Region program eligible for a further rebate after 10 years.
  - Recent program changes are in effect retroactively to July 16, 2024.

# Sanitary Backwater Valve Considerations

## Prevent Sewer Mainline Back-ups

Avoid flushing disposable wipes, diapers, paper towel, fats, oil, and grease.

## Get Professional Advice

Retain a certified plumber to ensure you employ appropriate flood prevention methods for your home.



## Challenges

Valves are mechanical devices and need **regular** maintenance (checked and cleaned)

If the backwater valve is **closed** during a storm, **DO NOT** use water (shower, washing, flushing) because this will result in flooding your own basement.



# Homeowner Resources

## **A Residential Guide to Flood Prevention and Recovery**

[www.peelregion.ca/water/-media/basement-flood-prevention-guide](http://www.peelregion.ca/water/-media/basement-flood-prevention-guide)

## **Region of Peel Sanitary Backwater Valve Rebate Program**

[www.peelregion.ca/wastewater/backwater-valve-rebate.asp](http://www.peelregion.ca/wastewater/backwater-valve-rebate.asp)

**Region of Peel Guidance**  
[www.peelregion.ca/water/flooding-leaks/](http://www.peelregion.ca/water/flooding-leaks/)



## **A Residential Guide to Flood Prevention and Recovery**

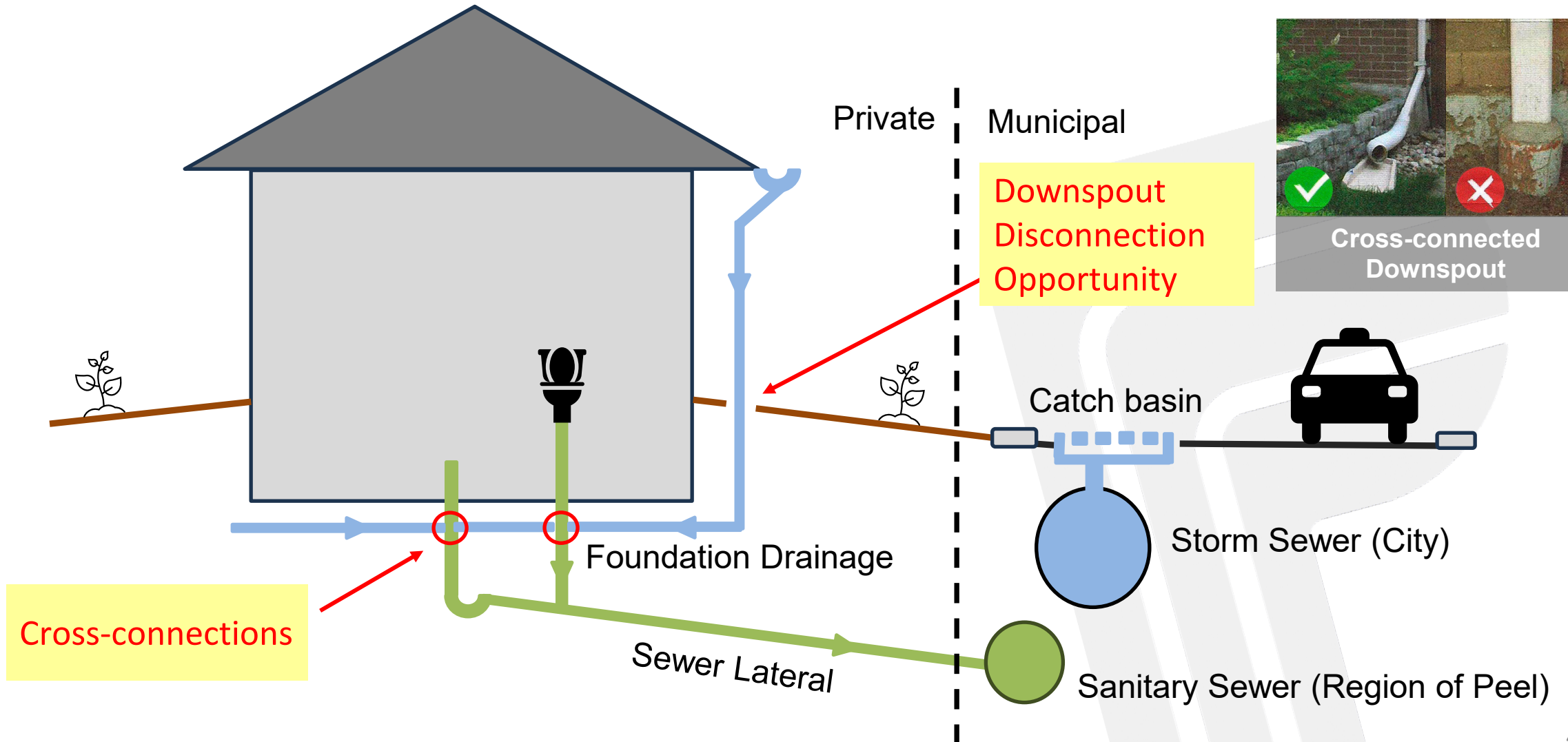
# How are we improving Peel's Wastewater System?





# Downspout Disconnection

Eliminating direct connections to the sanitary system – where they exist



# Rehabilitating our system



**BEFORE**

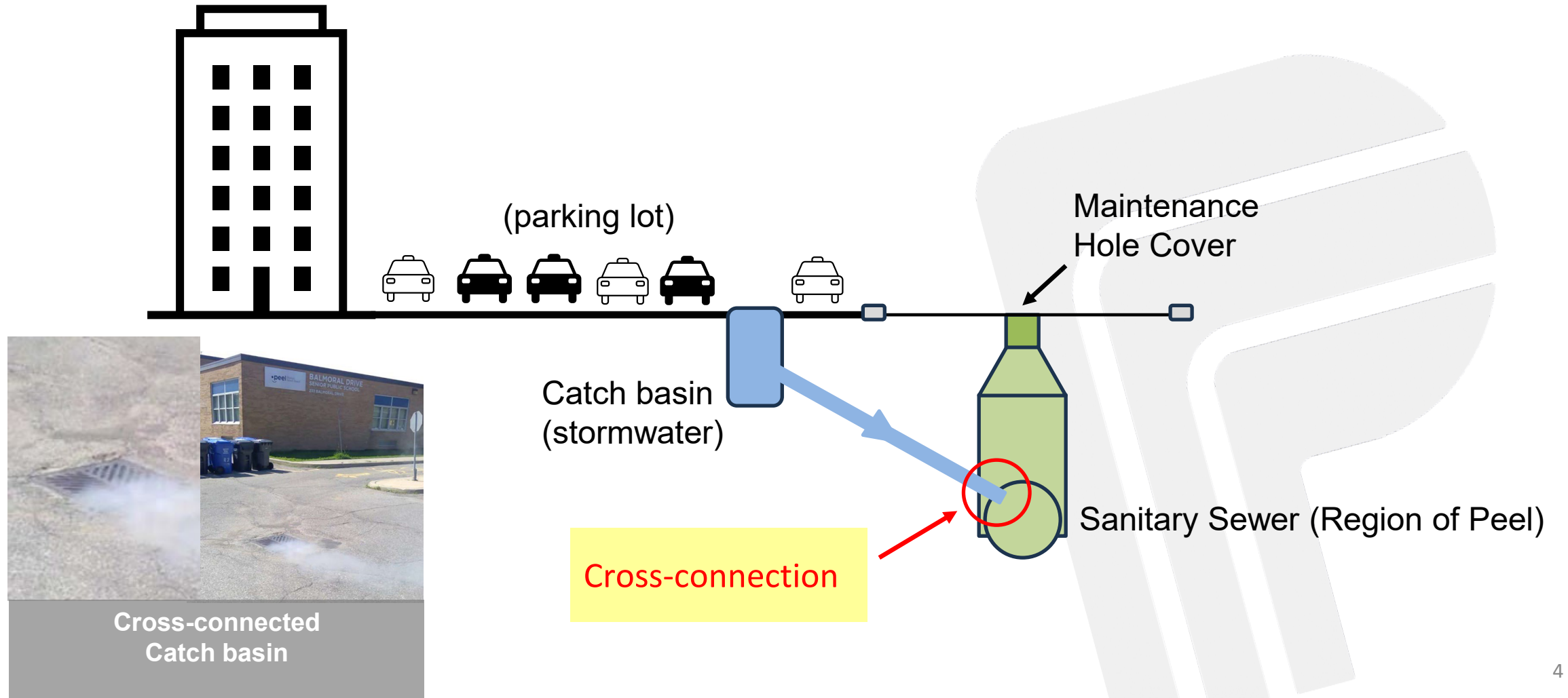


**AFTER**





# Eliminating Storm/ Sanitary Cross Connections



# Adaptation Projects

Project	Location	Status
<b>Etobicoke Creek Storage Facility</b>	Mississauga	Under construction, in service 2025
<b>Lakeshore Relief Sewer (Phase 1 – Elmwood to Jack Darling Park)</b>	Mississauga/ Port Credit	Construction commencing 2024
<b>GE Booth Water Resource Recovery Facility</b>	Mississauga/ Lakeview	Under construction.
<b>Queensway Relief Sewer</b>	Mississauga	2026-2030
<b>Cawthra Road Relief Sewer Phase 2</b>	Mississauga	2026-2028
<b>Lakeshore Relief Sewer (Future Phases – Elmwood to G.E. Booth and Jack Darling Park to Southdown)</b>	Mississauga - Lakeview/ Port Credit/ Clarkson	TBD



# Work Completed to reduce basement flooding Since 2013

## Ward 10

- Multiple sanitary flow meters were installed to better understand and monitor the performance of the sanitary sewers during wet weather events
- Region shared the sanitary flow meter information with City of Mississauga staff to support storm water drainage studies
- Continuing monitoring to ensure system capacity isn't impacted by storms

## Entire System

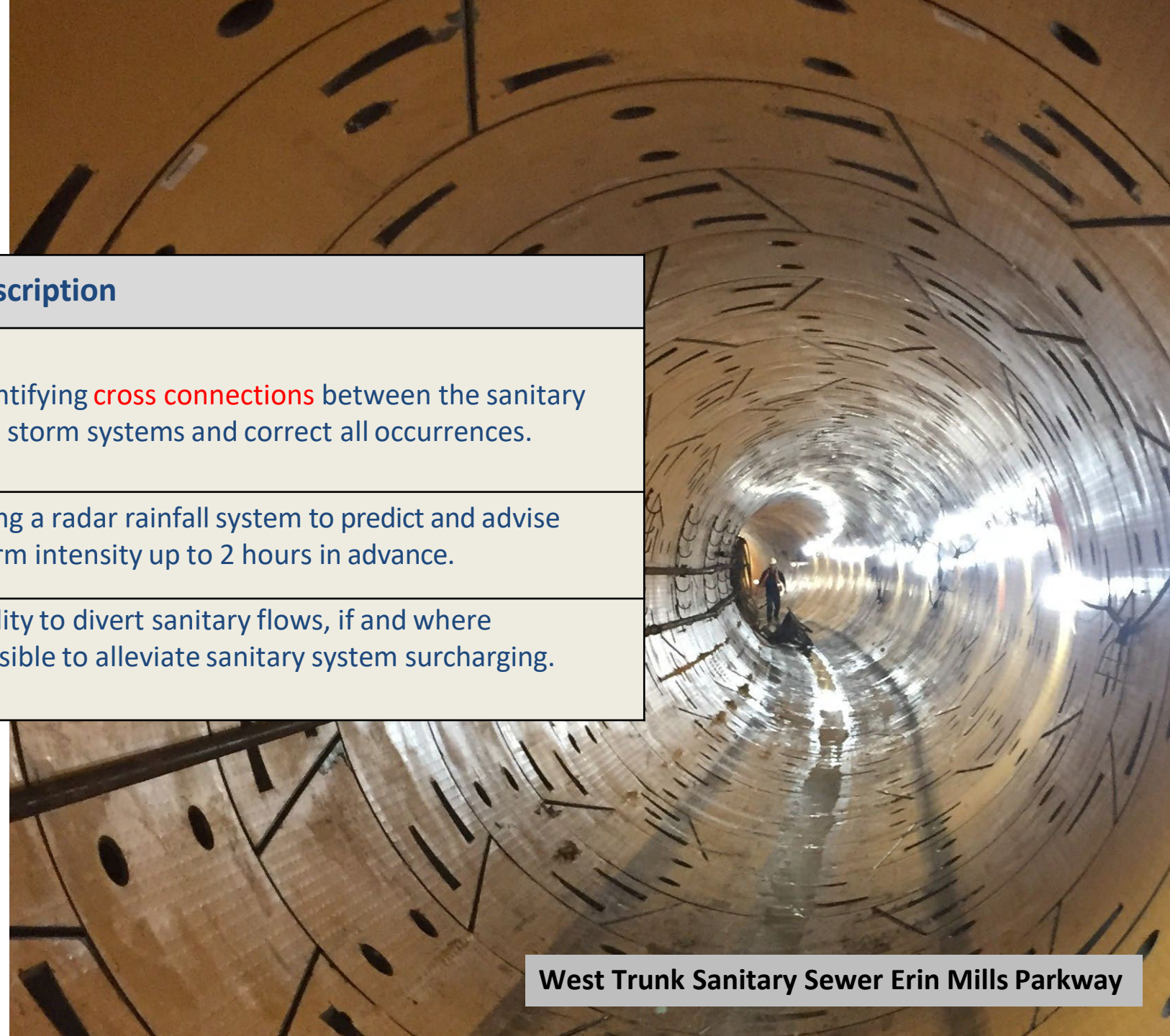
- 2600 km of CCTV Inspection
- 350 km of testing to find and remove cross connections
- 400+ flow meters to measure true problem areas
- 87,000 downspout surveyed
- Developed radar system to determine true rainfall that occurs in each area
- Developed new standards to reduce inflow and infiltration





# Continuous Improvement

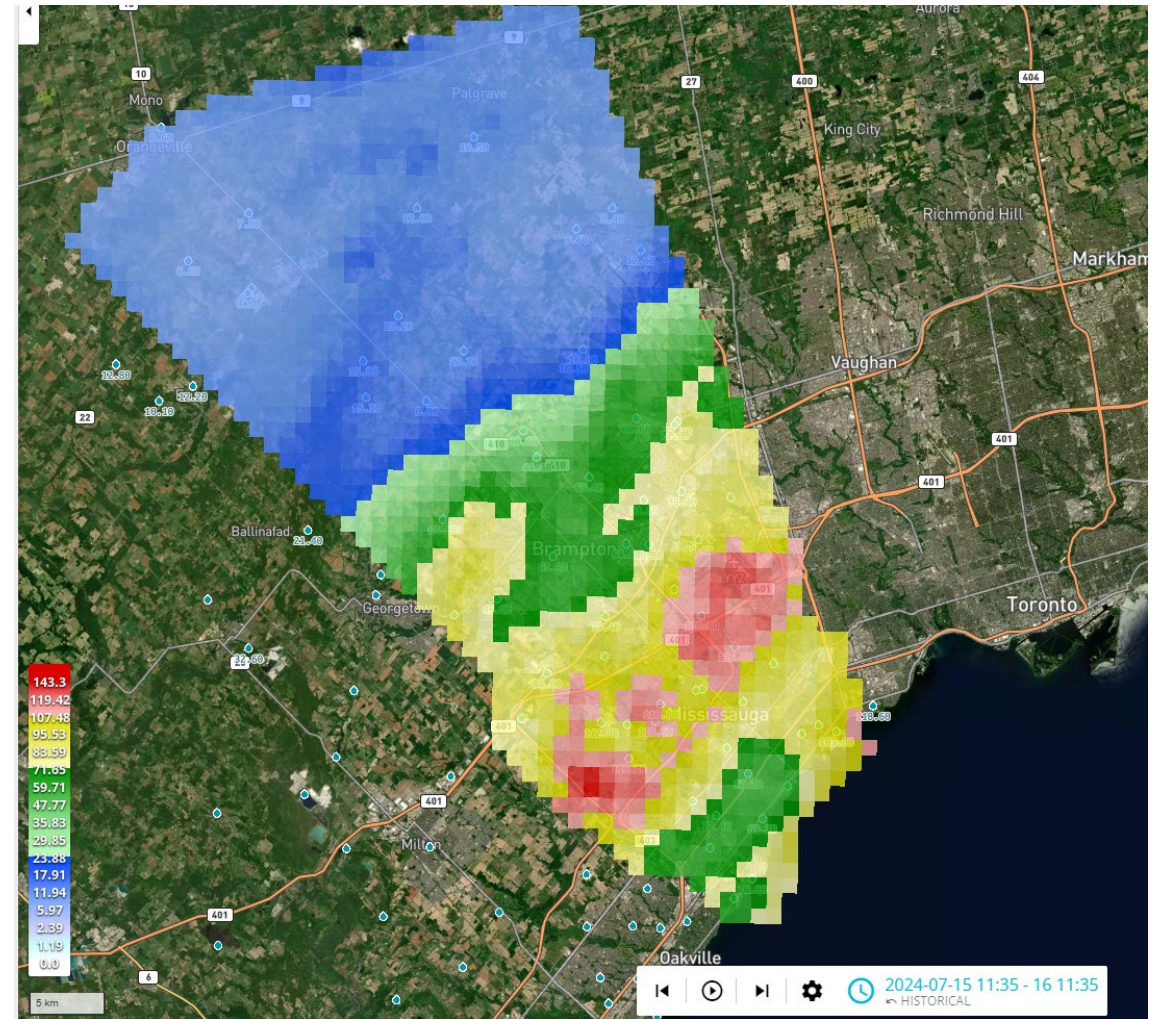
Activity	Description
<b>Region of Peel and City of Mississauga - Cross connection committee</b>	Identifying <b>cross connections</b> between the sanitary and storm systems and correct all occurrences.
<b>Rainfall Monitoring and advance warning system</b>	Using a radar rainfall system to predict and advise storm intensity up to 2 hours in advance.
<b>Sanitary system Real Time Control</b>	Ability to divert sanitary flows, if and where possible to alleviate sanitary system surcharging.



West Trunk Sanitary Sewer Erin Mills Parkway



# Thank You!



July 16, 2024 GARR Data