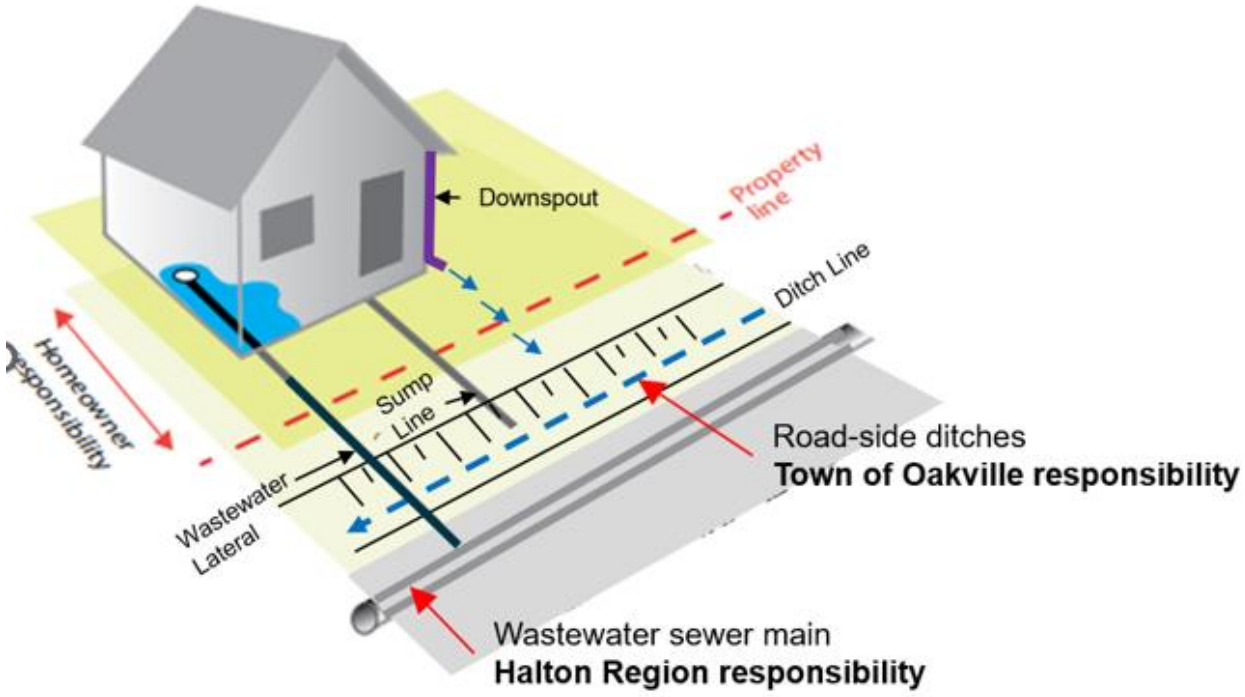
Saville Area Stormwater System Improvement Study

(Urban Drainage Study)

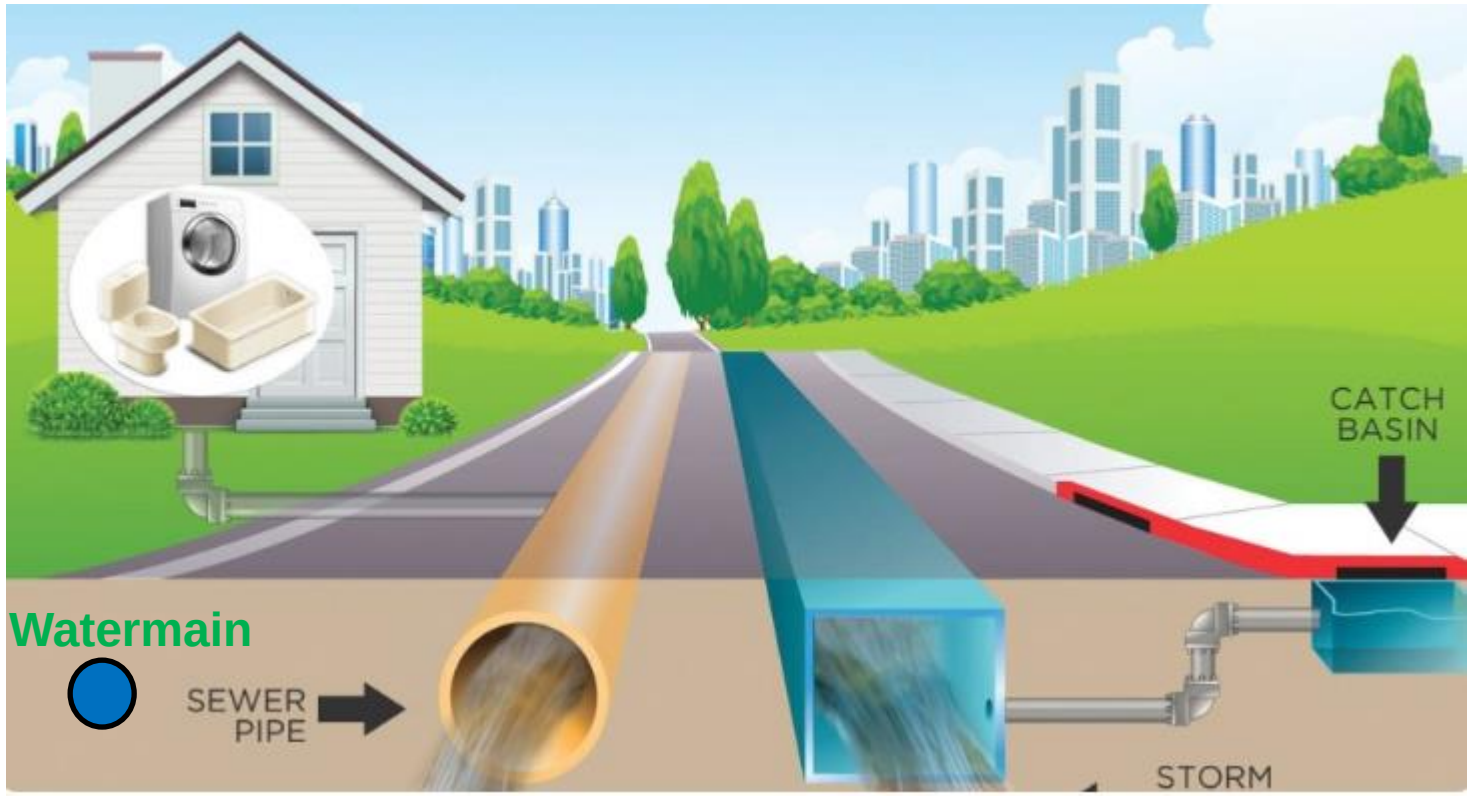
Council Meeting – August 13, 2024

Flood Risk Reduction is a Collective Effort

- **Town of Oakville** is responsible for:
  - the stormwater system on public side.
- **Halton Region** is responsible for:
  - the wastewater system on public side.
  - Watermain system on public side
- **Homeowners** are responsible for:
  - The building, including any subsurface waterproofing systems;
  - The plumbing, sump pumps, backwater valves, etc. located on private property
  - Proper lot drainage away from the home's foundation.
  - Driveway culverts



What's Under a Typical Street?



Region of Halton
(Watermain & Wastewater main)

Town of Oakville
(Stormwater pipe - or ditch)

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Excessive Inflow & Infiltration can lead to Wastewater System Surcharging

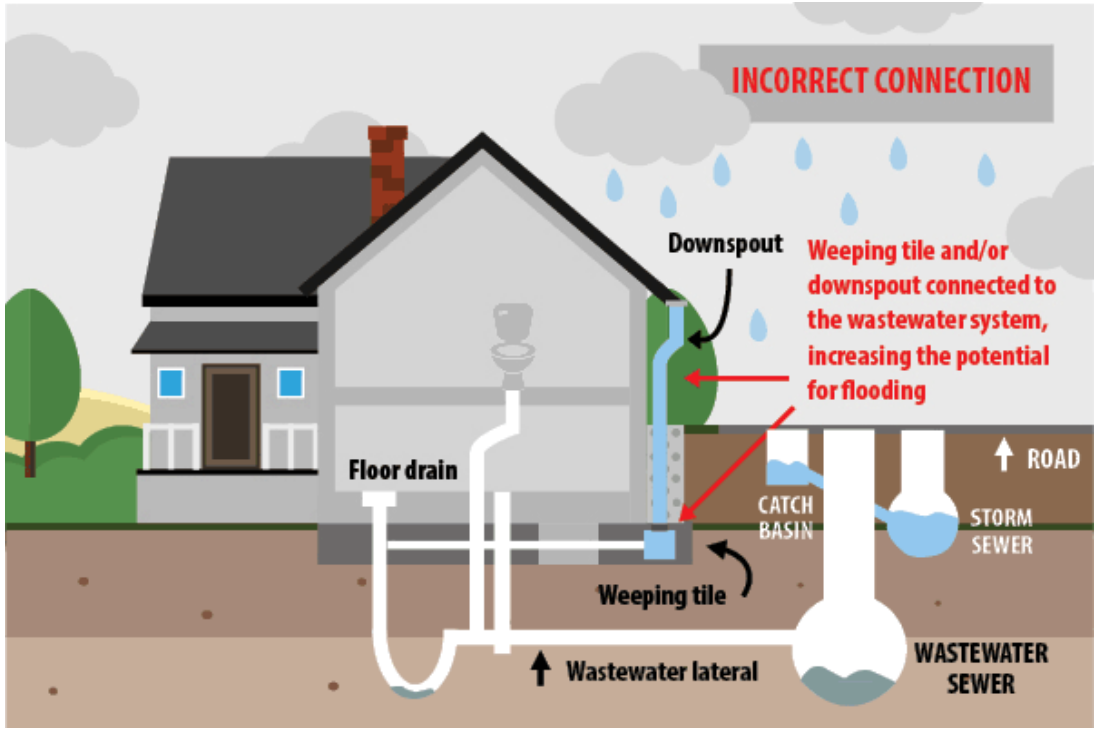
Inflow and Infiltration (I/I) is any stormwater or groundwater that enters the wastewater system.

- ***Infiltration*** is groundwater that seeps into cracks, joint failures and holes in aging sewer pipes, maintenance holes and sewer laterals (public and private).
- ***Inflow*** is stormwater (rain/snow melt) that quickly enters the wastewater system via improper direct private storm connections (roof downspouts and weeping tile), stormwater system cross-connections and vent holes in maintenance hole covers.

The Wastewater System is designed to take a small amount of I/I but it was not meant to accept excessive I/I from:

- Improper direct private storm connections (foundation weeping tiles, roof downspouts) or from
- Submerged Maintenance Holes
- Defective Private-Side Sewer laterals (cracks, displaced joints and holes)

This excessive I/I can quickly overwhelm (surcharge) the Wastewater System and cause sewage to backup into basements.

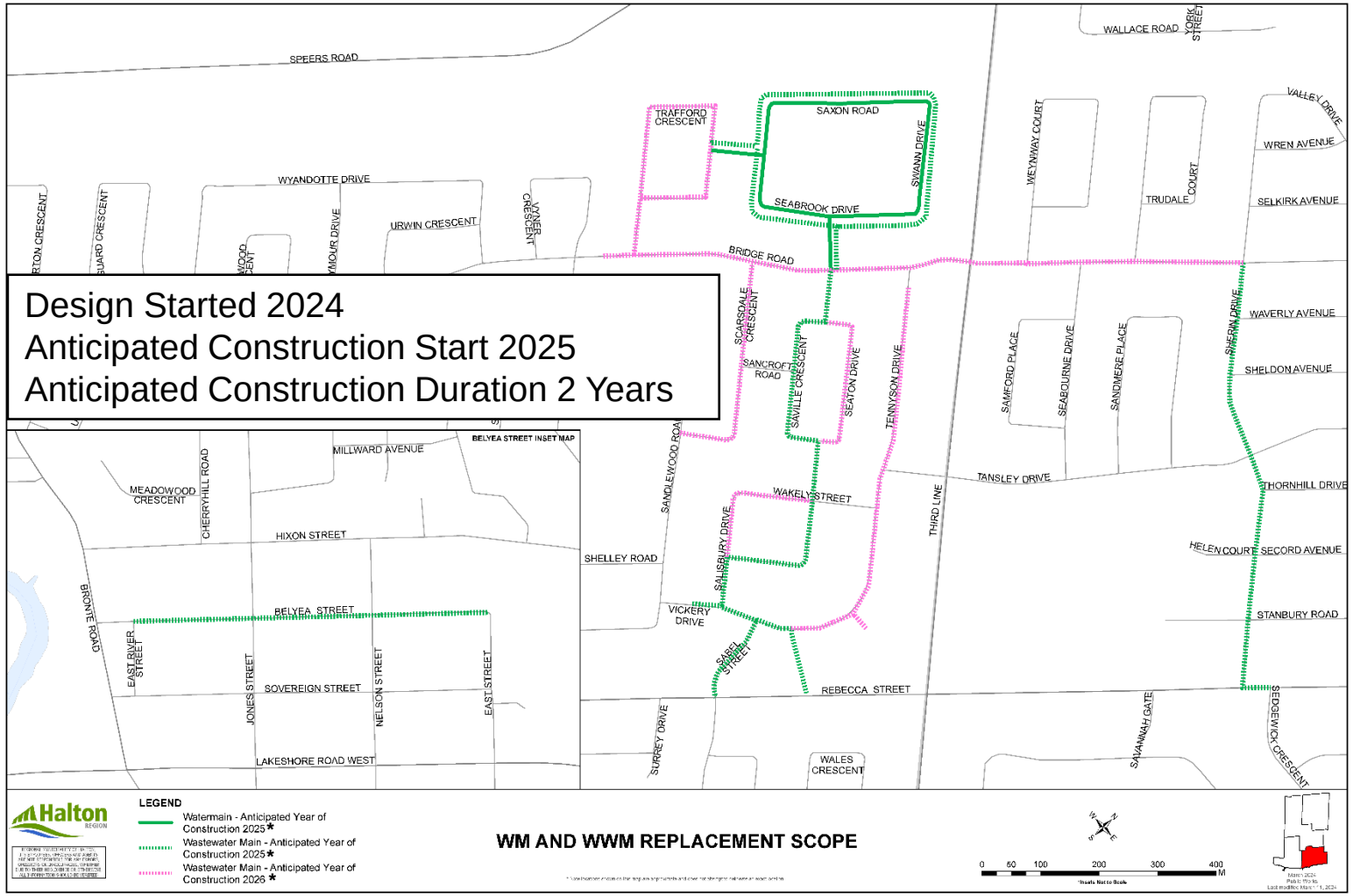


- **Shared Responsibility** to get excessive I/I out of the wastewater system and reduce risk of System Surcharging and Basement Flooding

Saville Area Basement Flooding Causes

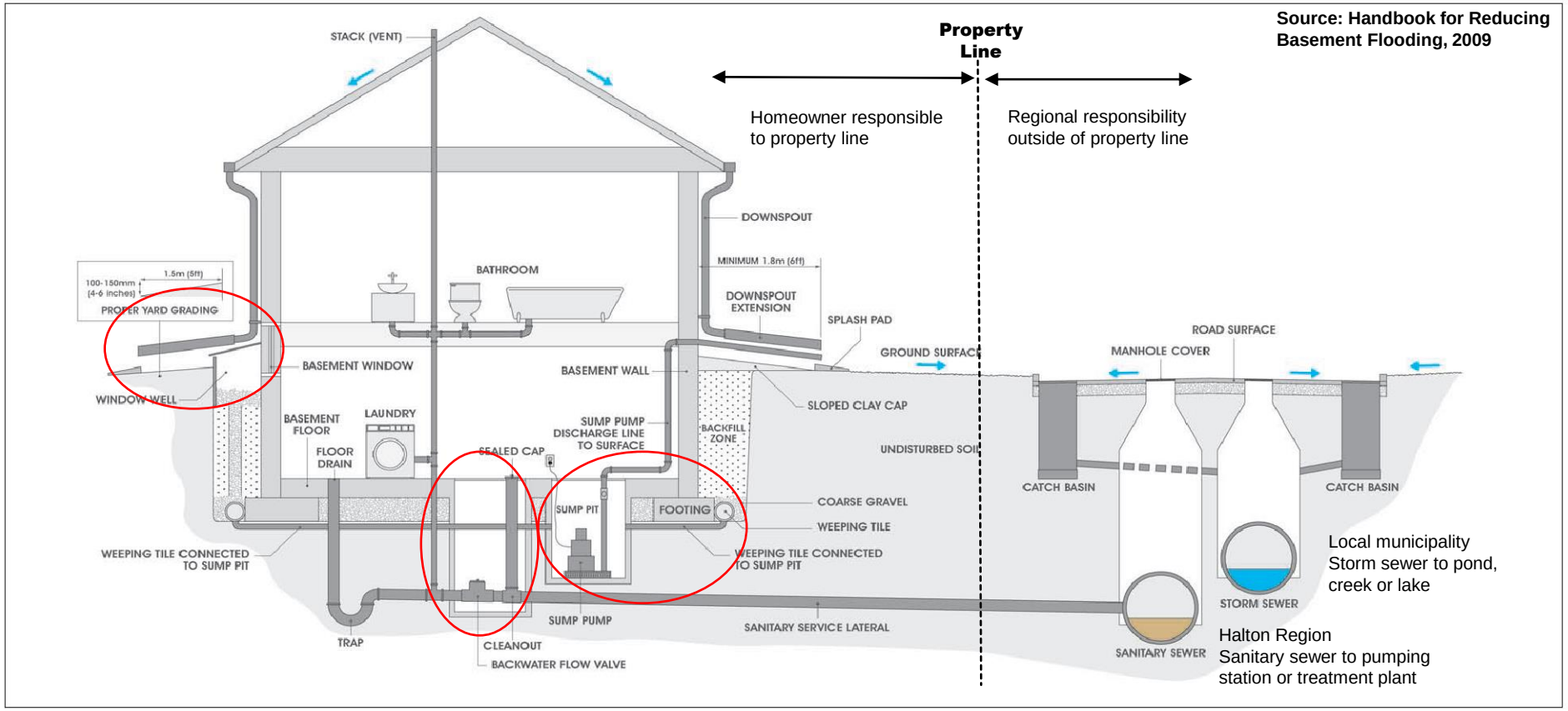
- Wastewater system surcharge - too much stormwater & groundwater enters the wastewater system from:
    - High groundwater levels and surface ponding.
    - Submerged manholes close to/within overtopped ditches/roads
    - Direct private side stormwater connections
        - weeping tile connections, downspouts, basement walkout drains,
    - Poorly maintained private side wastewater laterals
- Private stormwater system failures:
    - Sump pump systems – undersized pumps, frozen outlet pipes
    - Poor lot grading

Planned Wastewater Main Replacement



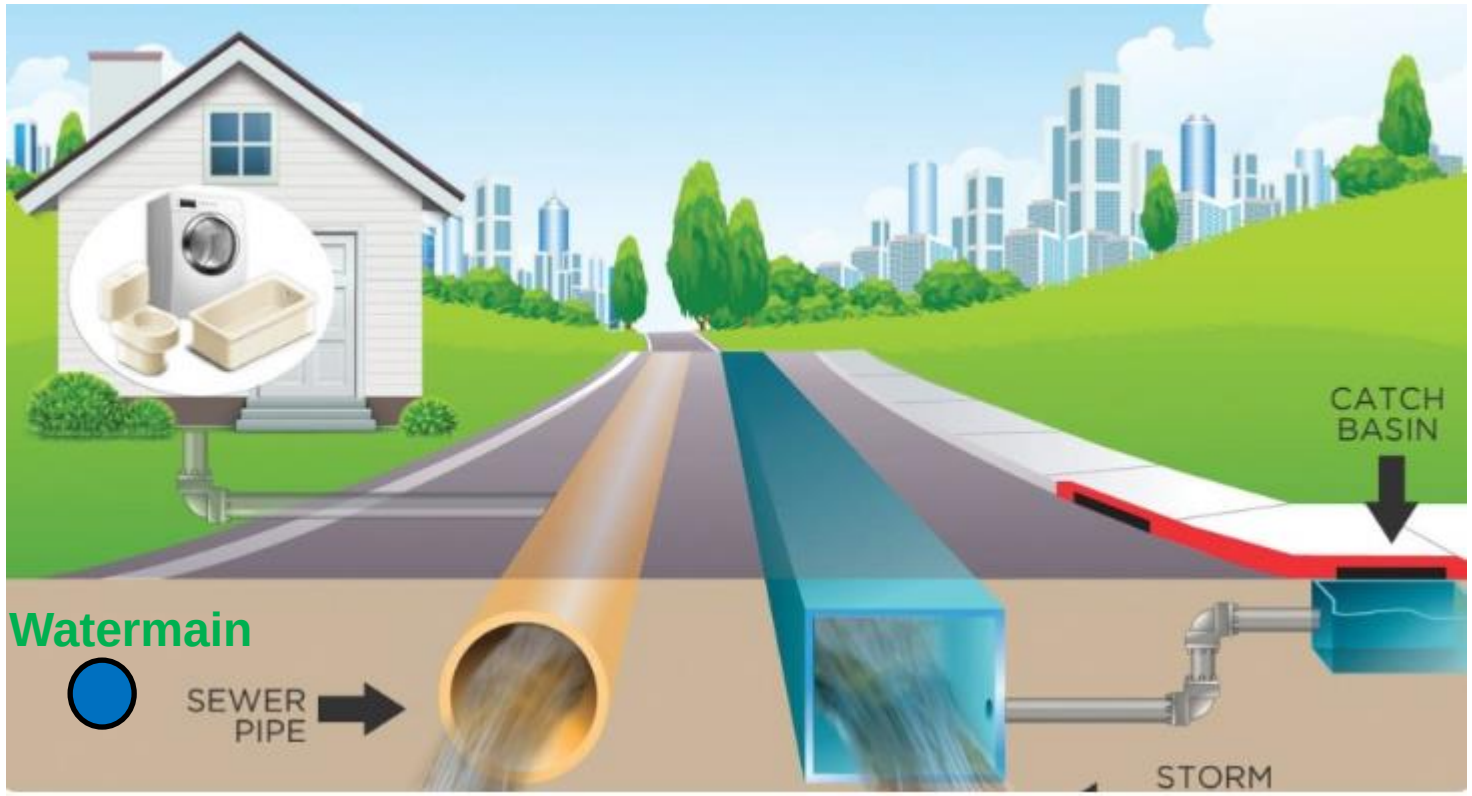
*Construction phasing is subject to change without notice

What Homeowners Can Do to Reduce Basement Flooding Risk



Repair Defective Laterals & Disconnect Private Drain Connections

What's Under a Typical Street?



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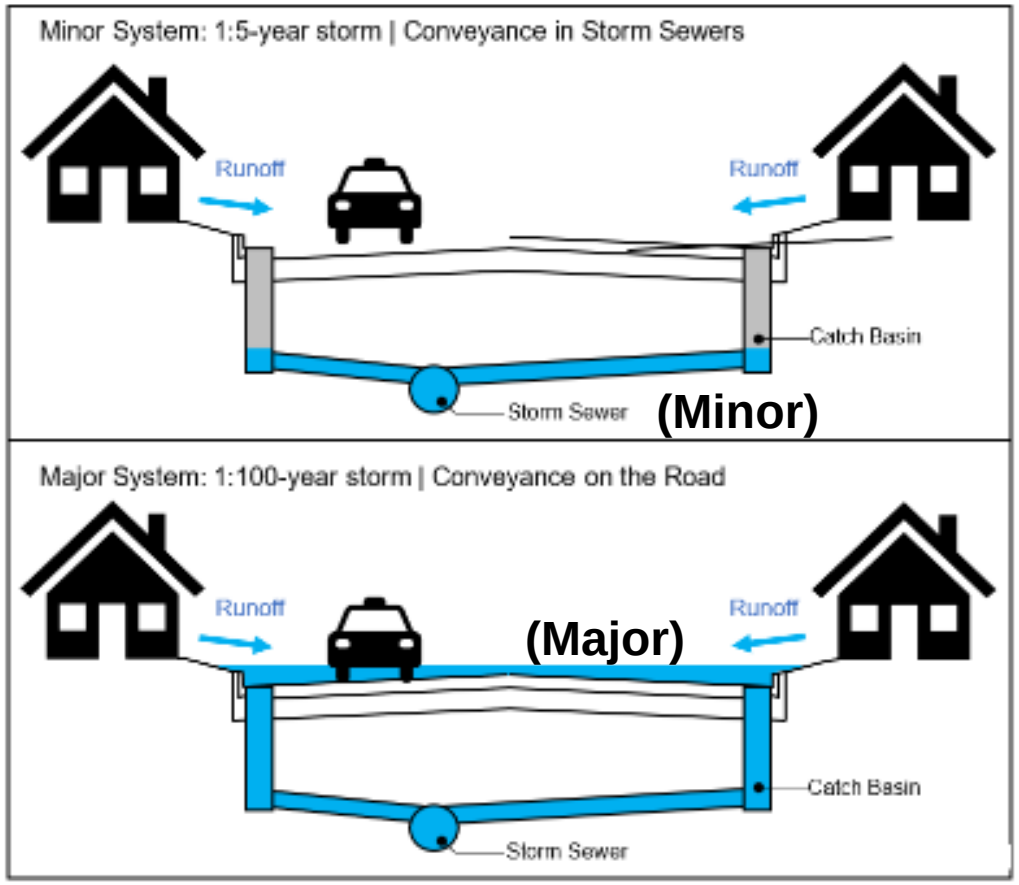
Minor & Major Storm Drainage Systems



The study area (designed in late 1950's / early 1960's) includes a minor drainage system and a major drainage system

Flows beyond the capacity of the minor system will flow on the major system (i.e. the roads), but the roads are not formally designed to convey flows.

Around 1980+- and onwards the minor & major drainage systems were designed to work together.

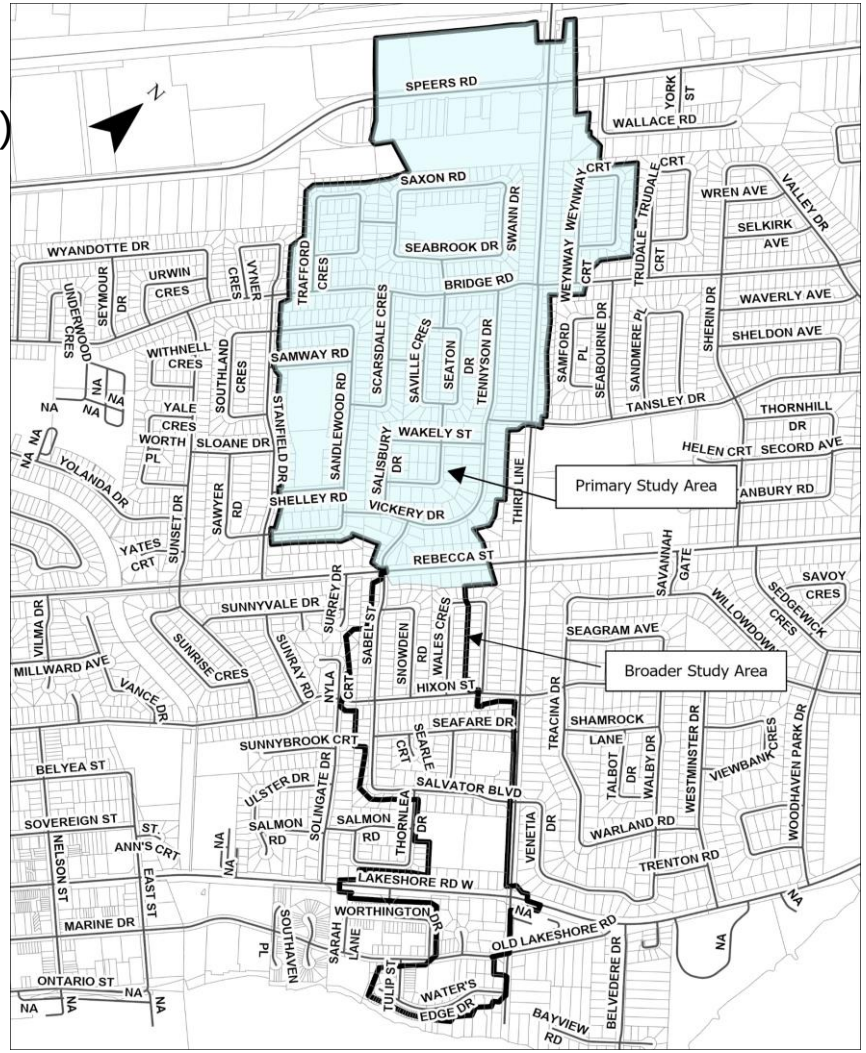
Study Area & Purpose

- The Saville Area Stormwater System Improvement Study (the Study) builds upon the 2019 Stormwater Master Plan, in which most of the Saville Study area was identified as one of the twelve areas to have higher risk exposure to stormwater drainage issues

- The purpose of the Study is to identify drainage deficiencies, evaluate and recommend alternative solutions to improve drainage and reduce flooding risks in the study area.

- Recommendations from the Study will align with the Region of Halton's planned water and wastewater system improvements in the upcoming years

- The study was carried out as a Schedule B Municipal Class Environmental Assessment.



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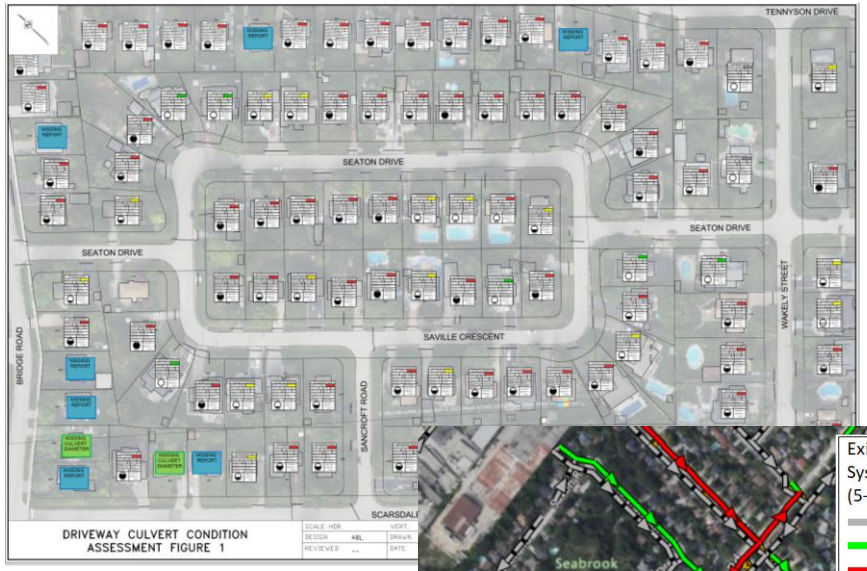
Storm Study Results

- 70% of culverts in the Saville Crescent and Seaton Drive loop are in poor drainage condition due to structural deficiencies and sedimentation

- Roughly half of the storm sewers are surcharged in the broader study area during a 5-year storm event

- Overland drainage system is challenged



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Study Results

The preferred alternative to improve storm drainage system in the study area is a combination of ditch and sewer system improvements, and subsurface stormwater tanks with LID and green infrastructure features at Seabrook Park and Rebecca Gardens Park in the amount of approximately $15 million.

- Re-ditching of the existing local ditch network and driveway culvert works to improve system conveyance within the Saville Crescent and Seaton Drive loop.
- Upgrading or replacing deficient storm sewer to improve system conveyance north of Rebecca Street.

Ditch and Storm Sewer System Improvement

- Subsurface stormwater tank in the Seabrook Park with open bottom and LID features
- The park area would be restored to its original condition after construction
- Additional public engagement opportunities will be available at detailed design stage

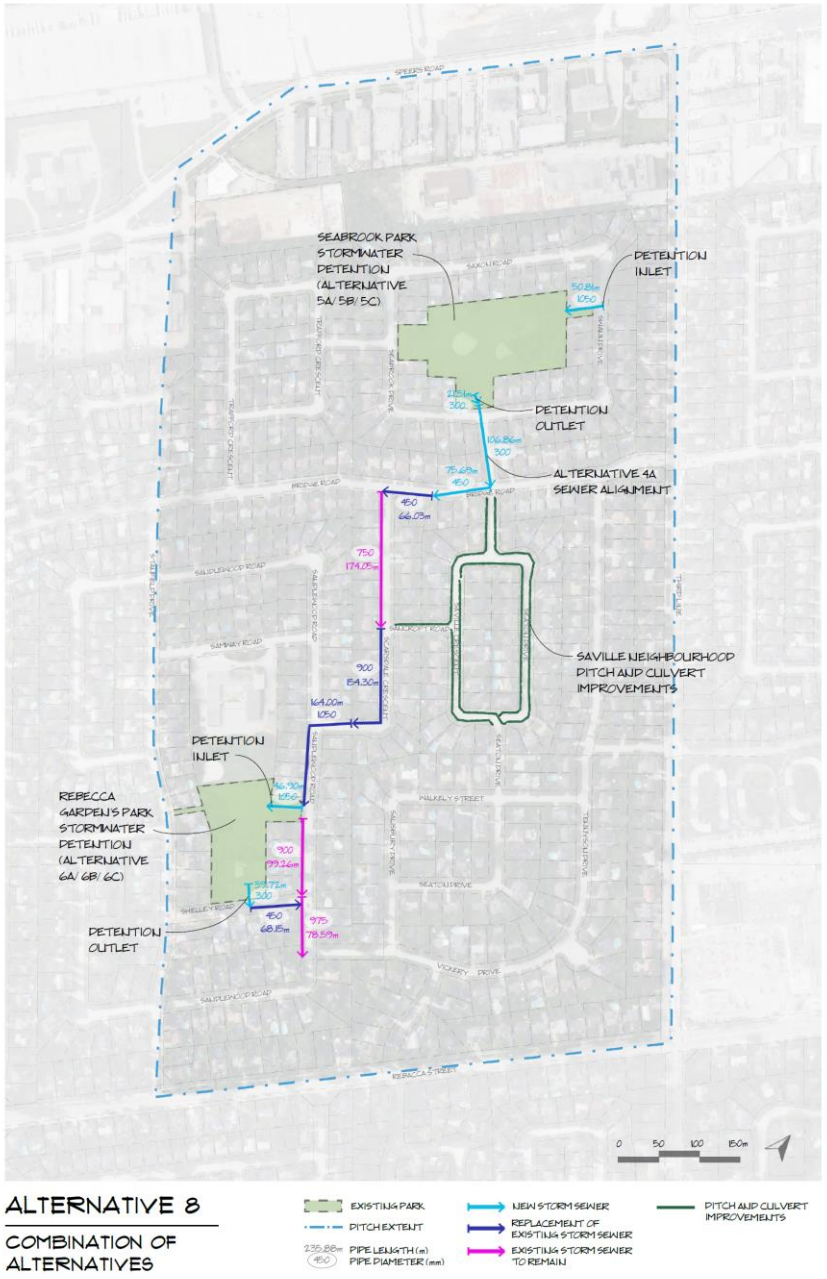
Stormwater Tank at Seabrook Park

- Subsurface stormwater tank in the Rebecca Gardens Park with open bottom and LID features
- The park area would be restored to its original condition after construction
- Additional public engagement opportunities will be available at detailed design stage

Stormwater Tank at Rebecca Gardens Park

Preferred Alternative

- Overall drainage improvements and peak flow reduction in the storm sewer system north of Rebecca
- Reduction in the length of surcharged storm sewers
- Reduces peak flows discharged to areas south of Rebecca Street



Next Steps

- The design of works will commence in 2024
- The construction of works will commence in 2025
- Works to align with Halton Region's Water and Wastewater Improvement Program
- The proposed phased implementation of the remaining works will be outlined in the upcoming Capital Budget and Forecast
- Opportunities for public engagement (Seabrook Park & Rebecca Gardens Park)

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Conclusion

- The Saville Area Stormwater System Improvement Study has been compiled documenting the selection of recommended preferred alternative.

STAFF RECOMMENDATION

- That the Notice of Completion for the Saville Area Stormwater System Improvement Study, Municipal Class Environmental Assessment Study be published, commencing a 45-day public review period from September 16, 2024, to October 31, 2024.

Thank you – Questions?

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