Welcome

Scarborough Waterfront Combined Sewer Overflows, Stormwater Outfall Control & Flood Protection Study

Municipal Class Environmental Assessment Study Addendum

Virtual public drop-in event – November 26, 2020

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Stantec

Meeting Rules of Engagement

This meeting will be recorded

Contribute to the meeting goals and agenda.

One voice at a time. Be direct and frame questions to specific speakers.

Stay focused, avoid multi-tasking, and be respectful.

Be a good listener and keep an open mind.

Mute your microphone when not speaking to prevent transmission of background noise. Remember to unmute before speaking.

Turn on your camera, if comfortable, and be camera-ready. Set the camera at eye-level in a well-lighted environment. Be mindful of your surroundings from a security and privacy standpoint.

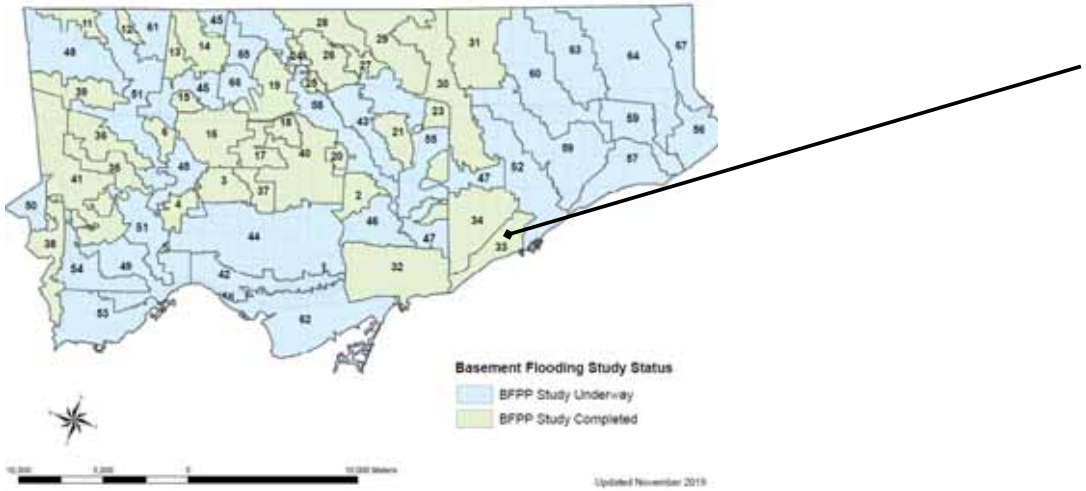
Ask questions by using the chat feature. Or click the hand icon beside your name from the participants list.

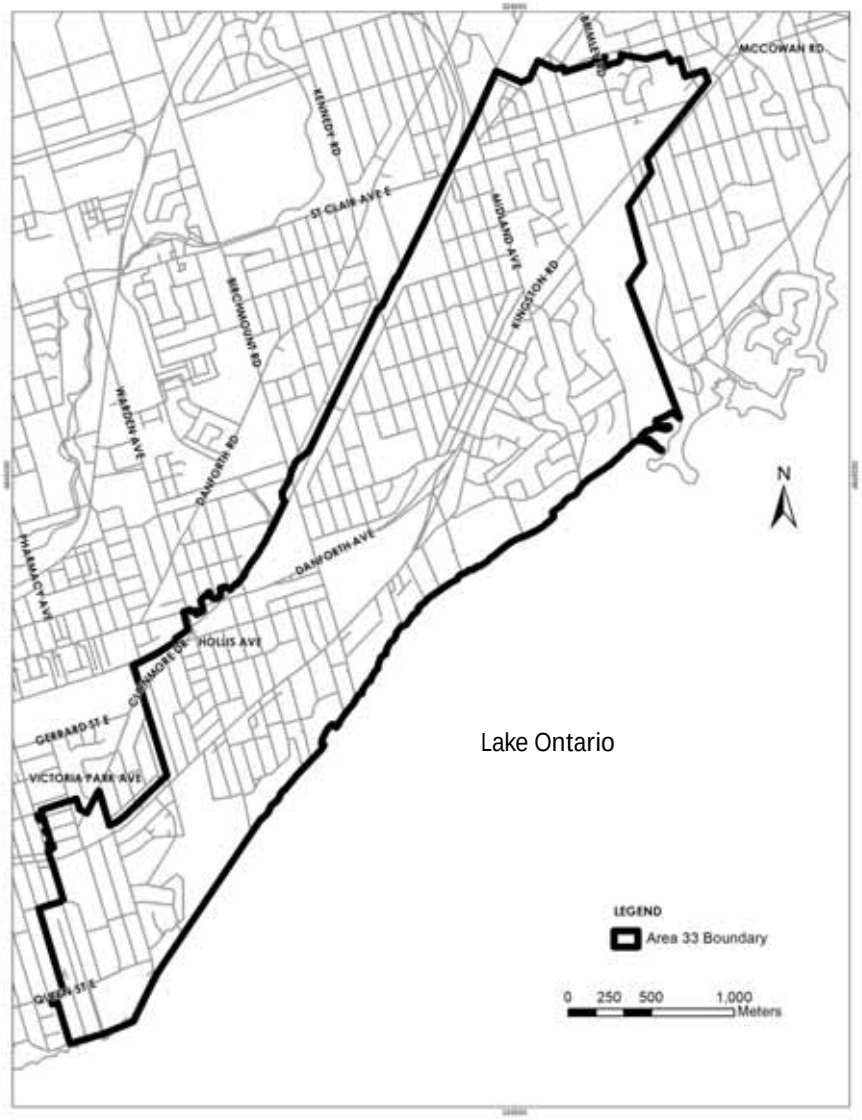
Computer audio issues? Use your cell-phone for audio by clicking Audio Connection, Switch Connection, then Call Me.

Engage with high energy, be personable as you would in person!

Study Area Location Map

- Scarborough Waterfront (Area 33)
- Bounded by Brimley Rd to the east, Victoria Park Ave to the west, CN Rail to the north and Lake Ontario to the south.
- Study Area is based on the tributary drainage area for the combined sewer system





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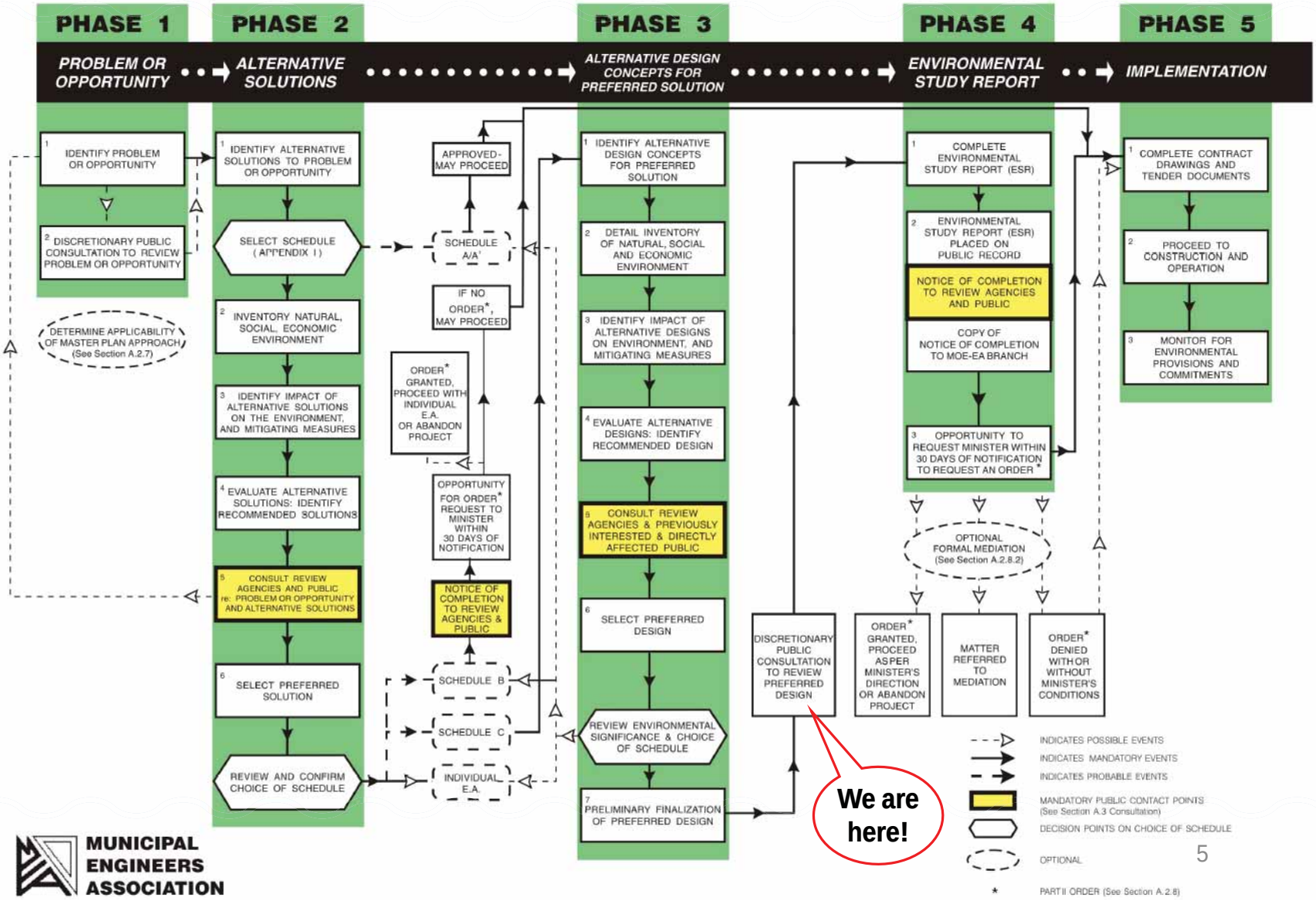
City of Toronto – Land Acknowledgement

- We acknowledge the land we are meeting on is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples.
- We also acknowledge that Toronto is covered by Treaty 13 with the Mississaugas of the Credit and the Williams Treaty signed with multiple Mississaugas and Chippewa Bands.

Municipal Class Environmental Assessment (EA) Process

- EA was originally completed in 2010
- Current EA update is based on an updated collection system representation
- City is currently completing Phase 3 of the EA Process
- This study is following the Schedule C process since we are proposing a new combined sewage storage facility



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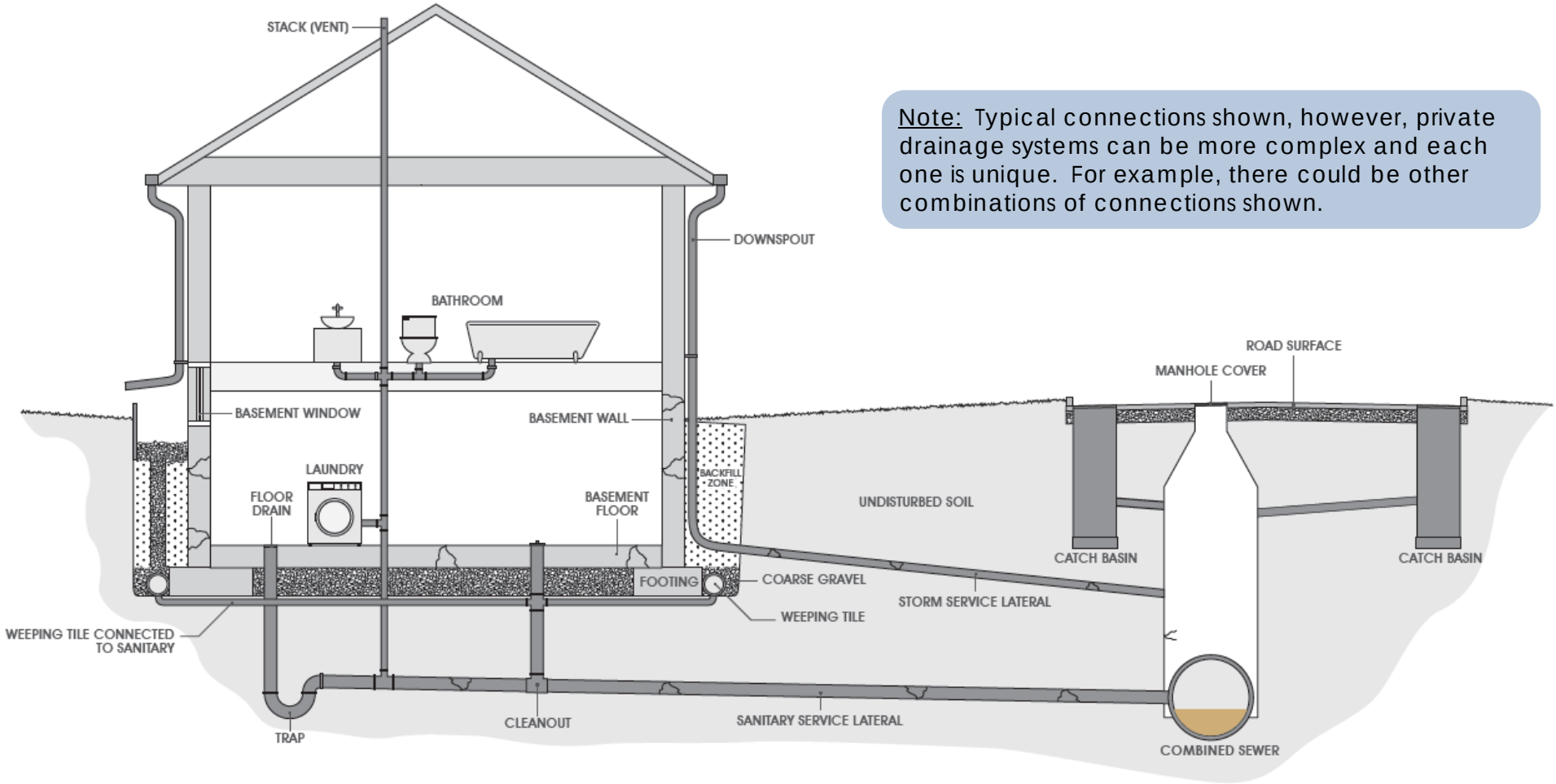
MUNICIPAL ENGINEERS ASSOCIATION

Community input – What we heard at Public Events

- Concerns documented through conversations with the project team during the original EA and subsequent meetings were collected and incorporated as part of the current study addendum

Typical House Connections to the City's Sewer
Case 1 – Combined Sewer



Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be other combinations of connections shown.

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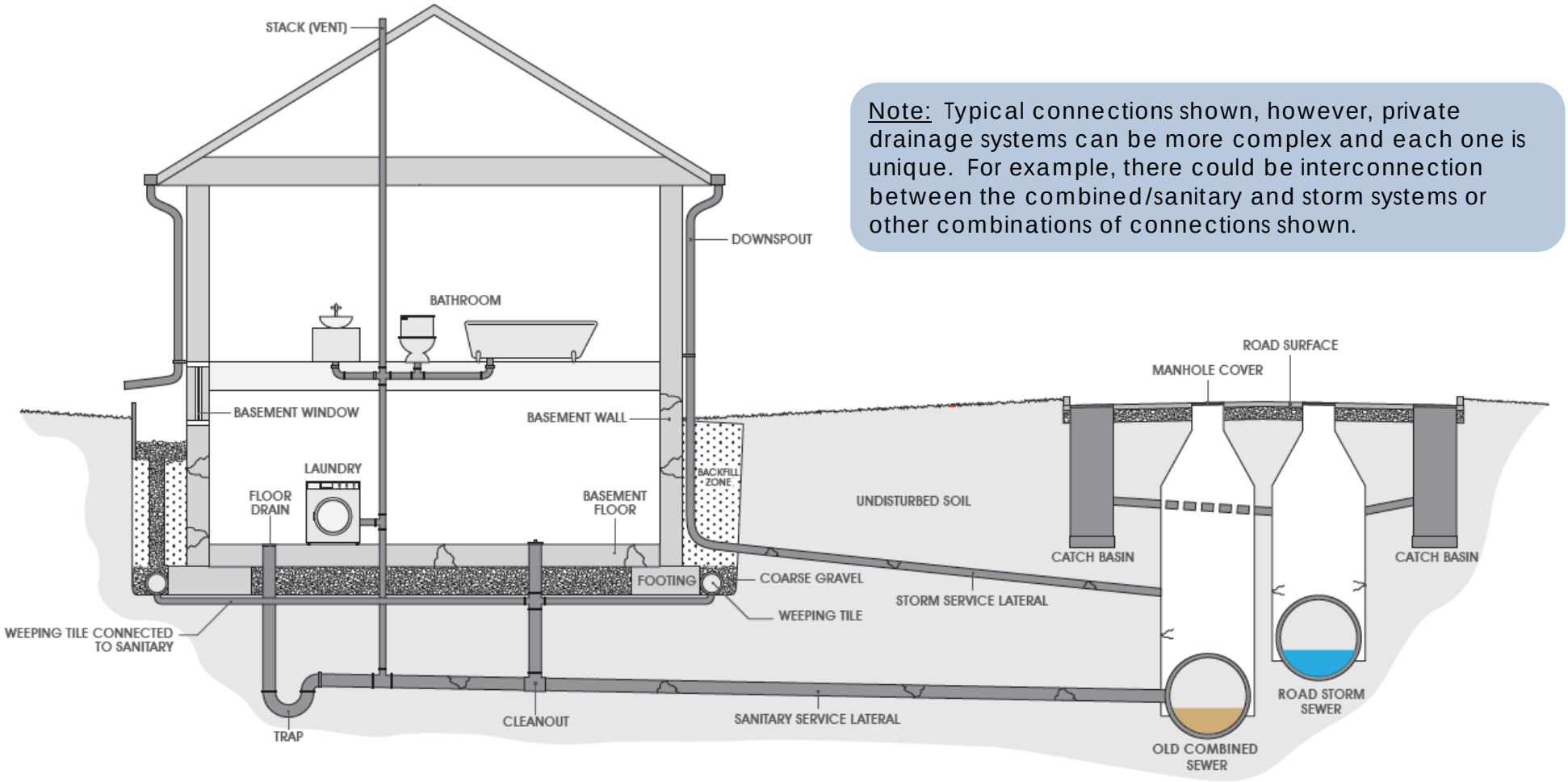
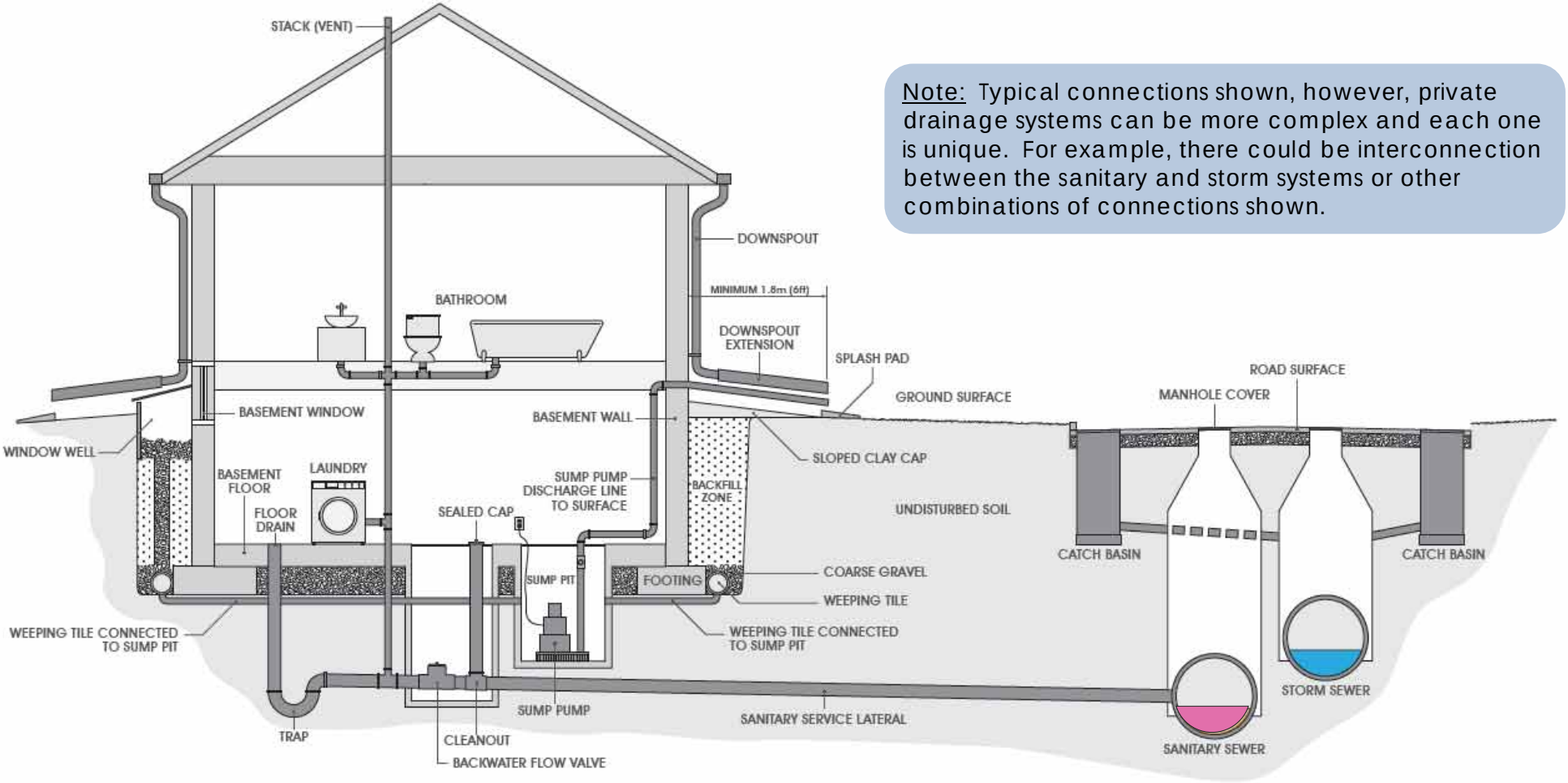
Typical House Connections to the City's Sewer
Case 2 – Partially Separated Sewer



Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be interconnection between the combined/sanitary and storm systems or other combinations of connections shown.

Typical House Connections to the City's Sewer
Case 3 – Separated Sewer – Isolated System



Note: Typical connections shown, however, private drainage systems can be more complex and each one is unique. For example, there could be interconnection between the sanitary and storm systems or other combinations of connections shown.

Targeted Level of Protection

- Sanitary system solutions are proposed to improve the level of protection against basement flooding for May 12, 2000 storm
- Storm and combined systems solutions are proposed to improve the level of protection against basement flooding for a 100-year storm
- Where feasible, the solutions are sized to maintain the maximum water level in the sewers or below basement elevations, and keep the surface runoff within the public right-of-way
- The design criteria may not be achieved in cases where sewers are shallow and cannot be deepened, where no house connections / basements exist, or the level of receiving watercourse is close to nearby ground surface. In these instances, solutions improve the existing level of protection to the extent possible
- Capture and treat 90% of wet weather flow in the combined system and reduce combined sewer overflows to Lake Ontario to 2 events or less per season

Alternative Solutions

Alternatives	Control Measures		
	At Source	Conveyance	End-of-Pipe
1. Do Nothing (as reference)	• Maintain current measures such as downspout disconnection, street sweeping and other bylaws	• Maintain current capacity and maintenance frequency	• Maintain Dunkers facility
2. 2010 EA Preferred Alternative	• Maintain current measures (Refer to Alt 1) • Encourage tree planting, rain barrels , rain gardens and bioretention on private property: o short-term uptake of 5 to 10% o long-term uptake of 20 to 50%	• Select sewer upgrades, new sewers and in-line storage pipes to address flooding clusters identified in 2010 • Bioretention within City right-of-way: o 25% application over 10 years o 75% application over 50 years	• Maintain Dunkers facility • One wet pond and 2 infiltration units for runoff water quality improvements • Four CSO storage tanks to reduce CSO volumes/frequency.
3. Aggressive Source Controls	• Maintain current measures (Refer to Alt 1) • Actively promote tree planting, rain barrels, rain gardens and bioretention on private property with a long-term uptake of 30%	• Maintain current capacity and maintenance frequency • Bioretention within City right-of-way with long-term application of 50% of the area	• Maintain Dunkers facility
4. Conveyance Upgrades	• Maintain current measures (Refer to Alt 1) • Encourage tree planting, rain barrels, rain gardens and bioretention on private property with a 5 to 10% uptake	• Some combined sewer separation and sewer upgrades to address areas at risk of flooding • Opportunistic application of bioretention within City right-of-way with 5% application rate	• Maintain Dunkers facility
5. Conveyance Upgrades + CSO Storage Tank	• Maintain current measures (Refer to Alt 1) • Encourage tree planting, rain barrels, rain gardens and bioretention on private property (long-term uptake of 20%)	Same as Alt 4 plus: • Application of bioretention within City right-of-way with long-term application to 40% of the area	• Maintain Dunkers facility • Underground combined sewage storage tank at Warden Ave to eliminate combined sewer overflows in the average year

Evaluation Criteria for Alternatives

Alternatives were evaluated based on their ability to address the Study's purpose, stakeholder input, and their potential impacts. Evaluation criteria considered included:

Natural Environment

Potential impacts on:

- ✓ Terrestrial systems (vegetation, trees, wildlife)
- ✓ Aquatic systems (aquatic life and vegetation)
- ✓ Receiving Water Quality

Socio-Cultural

- ✓ Land use impacts (parks, ravines, open spaces)
- ✓ Disruption to existing community during construction (traffic, noise)
- ✓ Disruption to existing community post construction (visual impact, odour, safety)
- ✓ Potential impacts to archaeological, cultural resources and First Nations

Technical

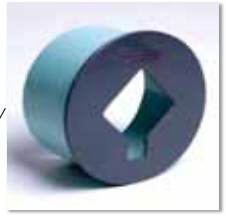
- ✓ Feasibility of implementation (available space, accessibility, constructability, approvals)
- ✓ Effectiveness in reducing surface and basement flooding and improving stormwater runoff quality
- ✓ Potential impacts on upstream, downstream and surrounding area infrastructure
- ✓ Impacts on operating and maintenance requirements

Economics

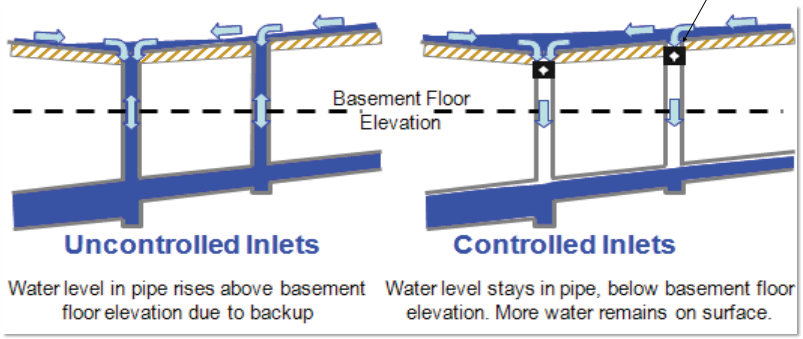
- ✓ Capital cost
- ✓ Life-cycle operating and maintenance costs
- ✓ Asset Renewal Integration Opportunities

Preferred Solution – Alternative 5

- Surface flow management
  - The diversion of surface drainage away from low lying areas to reduce surface ponding depths on public property
    - Installation of High Capacity Inlets (HCI) at select locations
    - Installation of new catchbasins at select locations
    - Installation of Inlet Control Devices (ICD) at select locations



Inlet Control Device



Catchbasin modifications:

- **add catchbasins**
- **change catchbasin type**
- **use inlet control devices**

Preferred Solution – Alternative 5

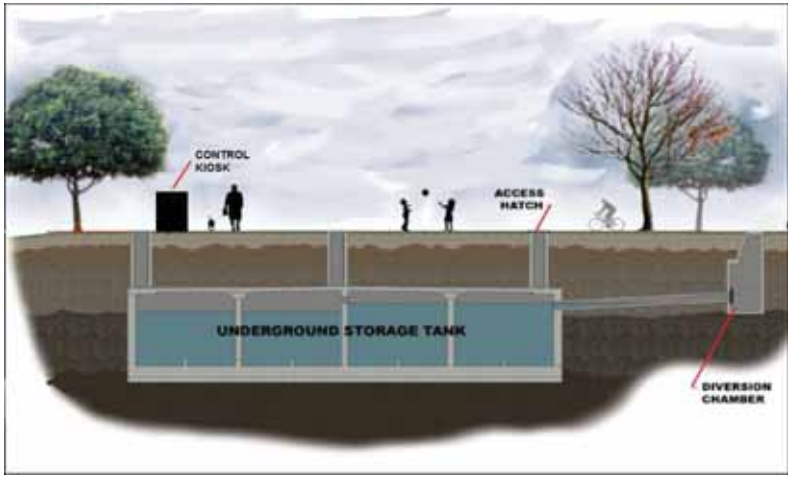
- Upgrade of Existing Combined, Storm and/or Sanitary Sewers
  - Increase the size of sewer pipe by replacing the existing sewer with a larger one
  - Optimize existing sewer capacity by redirecting sewer flow to new sewers

- Combined Sewer Separation by adding New Storm Sewers
  - "Separate" existing combined sewers by adding new storm sewers
  - Redirect road drainage (catchbasins) away from the combined sewers toward new storm sewers

Storm Sewer Replacement in Road – During Construction

Preferred Solution – Alternative 5

- Underground Storage
  - Chine Dr “In-line” Storage: Oversized sanitary sewer installed in-line with existing sewers temporarily stores water and helps relieve overloading during rainstorms.
  - Warden Ave “Off-line” Storage: Tank located adjacent to the existing sewers and is used only during larger storm events to temporarily store runoff and sewage to prevent sewer overflows to the lake. After the storm has passed, a pump dewaters the tank back to the combined sewer system.



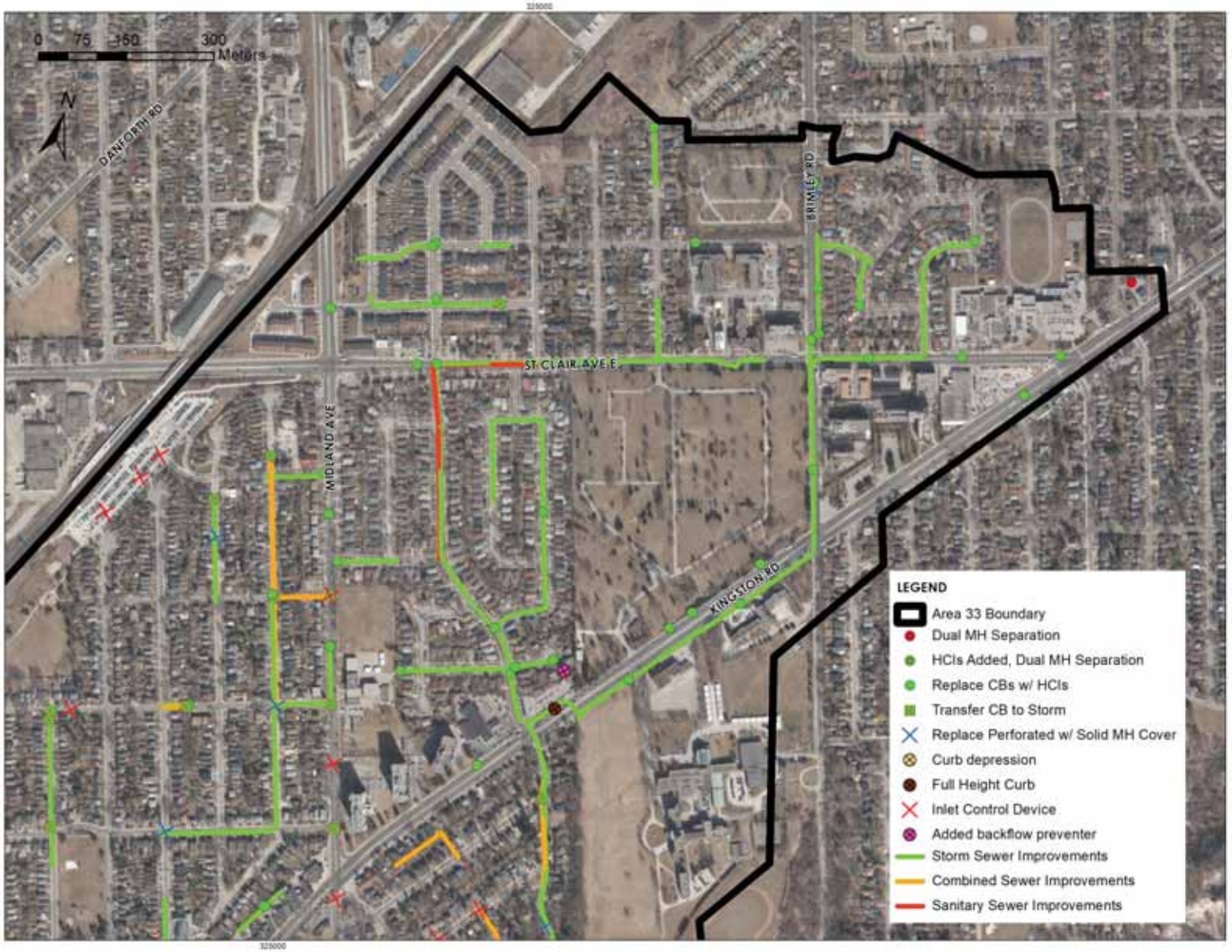
Warden Ave Combined Sewage Storage Tank

The required storage volume for the proposed underground storage facility is 1,600m^3.

Primary reasons for selecting this location:

- the proposed facility is located within municipal lands
- the impact on existing vegetation will be limited
- traffic disruption during construction will be minimized
- the impact on adjacent residents with respect to service disruption and access/egress will be minimized
- the selected site is cost effective and meets the technical considerations
- odour and noise control issues will be minimized
- temporary access to and from the waterfront may be maintained during construction
- good access for operation and maintenance

Preferred Solution – Map 1



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Preferred Solution – Map 2

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Preferred Solution – Map 3

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Preferred Solution – Map 4

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Preferred Solution – Alternative 5

Water Quality Improvements

- Combined Sewer Overflows (CSO)
  - Four (4) outfalls currently experience overflows.
  - The proposed solutions eliminate all overflows in the average year, exceeding Ministry of Environment & Climate Change guidelines.

- Stormwater quality improvement measures that can be implemented with the preferred solution:
  - Local Bioretention Filters – vegetated depression with underground trench designed to filter stormwater runoff to remove pollutants and promote infiltration, evapotranspiration and treatment (various configurations possible).

Bioretention Area Treating Impervious Area Runoff (Source: Green Streets Technical Guidelines, 2017)

Next Steps

- Gather and review public input
  - Please send comments by **December 10, 2020**
- Finalize recommended solution
- Prepare Environmental Assessment Addendum
- Post Environmental Assessment Addendum for 30-day review (spring 2021)
- Implementation of recommended projects has four key steps after completion of this EA Study:
  - Capital Planning
  - Preliminary Design
  - Detailed Design
  - Construction

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