

Foundation Drainage Policy

Presentation to BILD/RESCON

By Water Infrastructure Management – Toronto Water

September 28, 2021



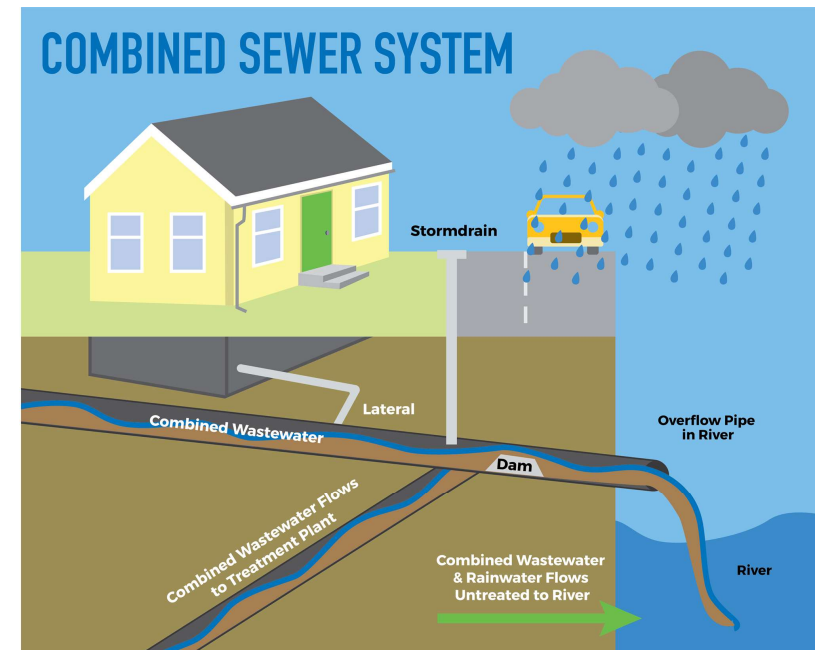
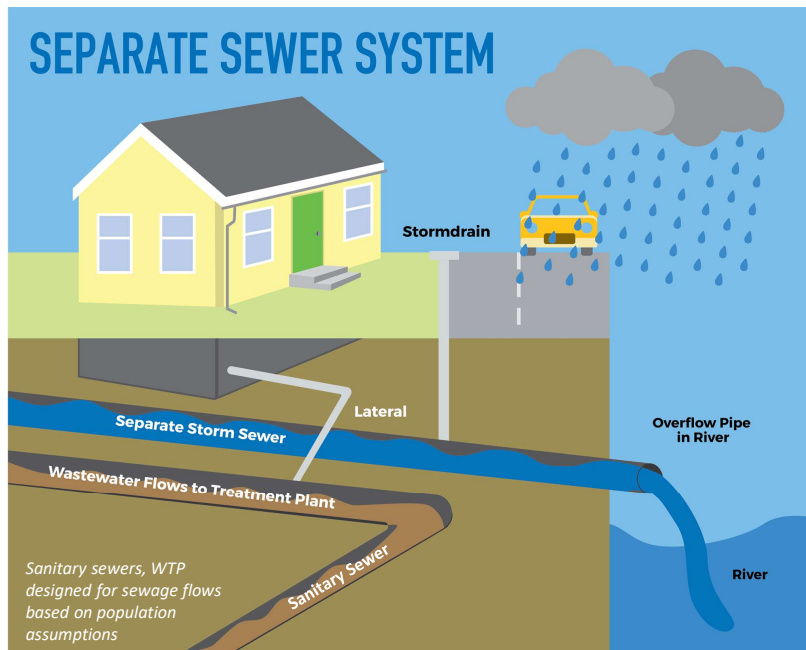
Overview

1. **Objective**
2. **Applicability**
3. **Key Definitions**
4. **4 Key Policy Statements**
5. **Exemption Authority**
6. **Guidelines**
7. **Next Steps**

1. Objective

Preserve sewer capacity in sewers for conveyance of **sanitary sewage** and sustain future development **growth**

Manage foundation drainage on-site rather than discharge to the City's sewers.



2. Applicability

All **development applications** under the *Planning Act*, except for Committee of Adjustment applications.

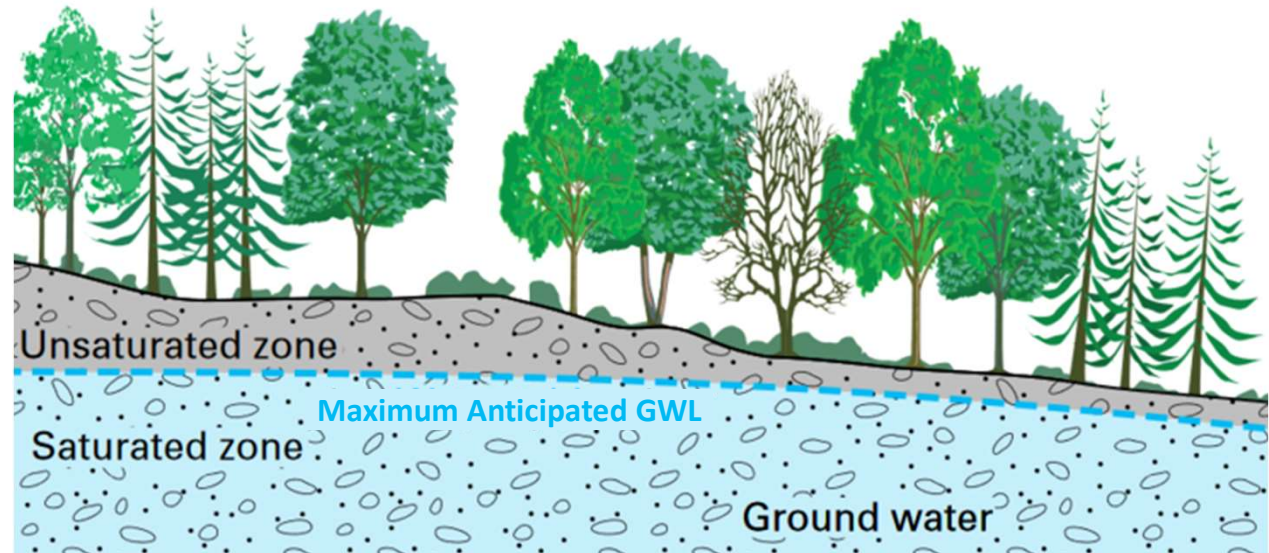
3. Key Definitions

Foundation Drainage - Infiltrated stormwater, or groundwater, or both, that may be collected in a drain installed at the foundation of a structure.

Groundwater - Water that exists in the saturated zone in sub-surface soil.

Infiltrated Stormwater - Stormwater that enters the unsaturated zone in sub-surface soil, located above the *Maximum Anticipated Groundwater Level*, during storm or rainfall events or snow melt.

Maximum Anticipated Groundwater Level - Estimated upper level of the saturated zone in the sub-surface soil, based on site-specific monitoring and an allowance for seasonal and multi-year fluctuations in groundwater. *[Note: This estimated value is not intended for use in structural engineering design]*



4. Policy Statements

4.1

Long-term Discharge of *Foundation Drainage* to the City's **sanitary sewer** system will **not be permitted**.

4.2

Discharge of *Foundation Drainage* from the interception and/or extraction of Groundwater from **confined aquifers** will **not be permitted** to any of the City's sewer systems.

4. Policy Statements

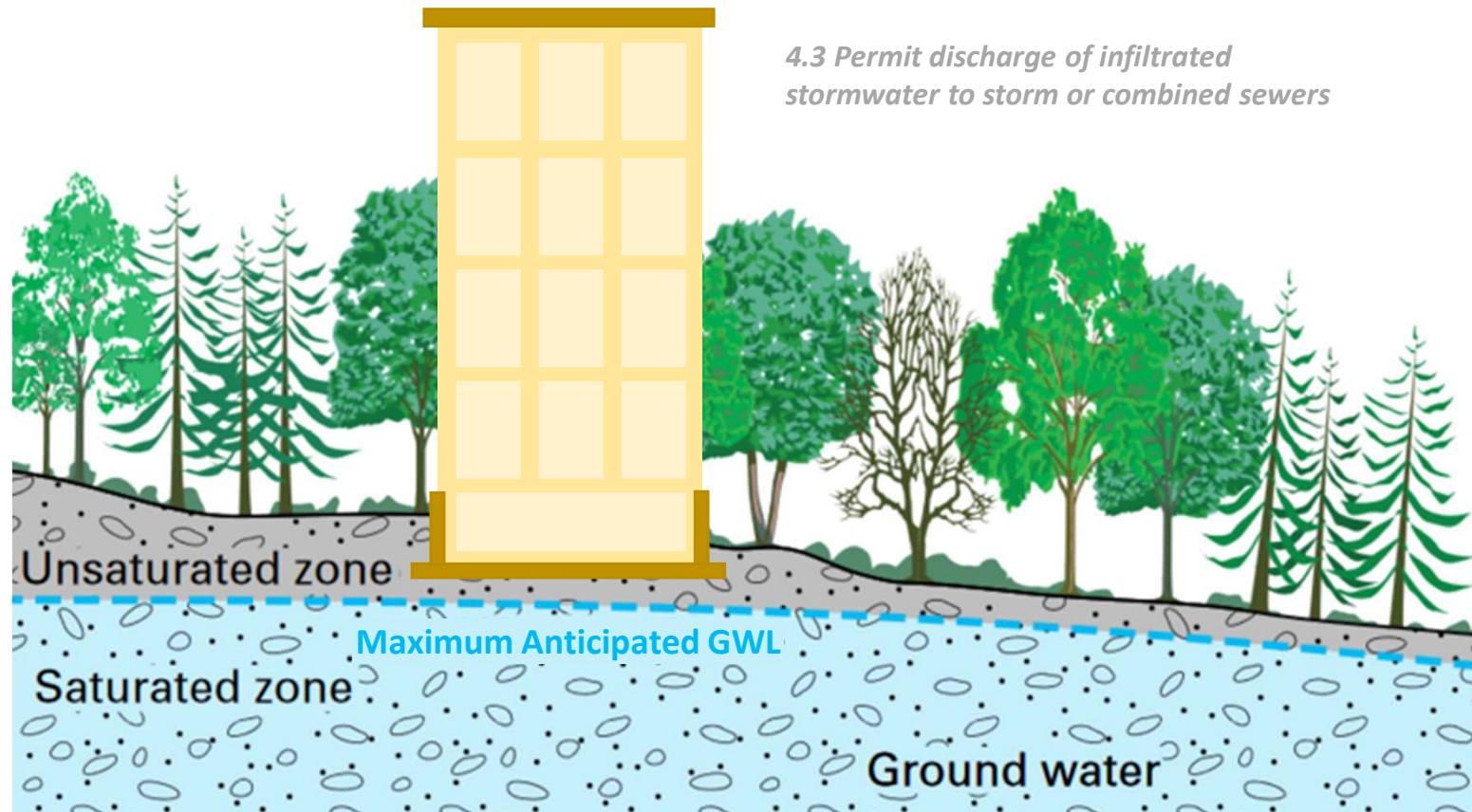
4.3

Long-term Discharge of Foundation Drainage that contains any *Groundwater* will not be permitted to the City's storm or combined* sewer system, unless *Foundation Drainage* is deemed to contain **only Infiltrated Stormwater**, under the following conditions:

- a) A *Qualified Professional* with a P.Eng. or P.Geo. deems *Foundation Drainage* to be **acceptable for surface water discharge**, by confirming that:
 - i. The development site is not considered a *Brownfield Property* for which no Record of Site Condition has been filed, or
 - ii. The development site is a *Brownfield property* where the filing of a Record of Site Condition confirms appropriate risk management measures have been implemented;
- b) A *Qualified Professional* with a P.Eng. or P.Geo. has deemed that the lowest elevation of any proposed structure will be **higher than** the *Maximum Anticipated Groundwater Level*, in accordance Groundwater monitoring requirements in the City's *Foundation Drainage Guidelines*.
- c) All requirements for obtaining a **storm connection** have been satisfied, including:
 - i. Confirmation from a *Qualified Professional* with a P.Eng. Or P.Geo. license that *On-site Management of Foundation Drainage* is not technologically feasible.
 - ii. A **Stormwater Management Report**, prepared by a *Qualified Professional* with a P.Eng. license, demonstrating that water management targets of the City's Wet Weather Flow Management Guidelines will be met.
- d) In addition to the foregoing, where discharges are proposed to combined* sewers, a **Servicing Report**, prepared by a *Qualified Professional* with a P.Eng. license, confirms that applicable sewer capacity criteria will be met in accordance with the Design Criteria for Sewer and Watermains.

* Only when no servicing options to the City's storm sewers exist from the development site

4. Policy Statements



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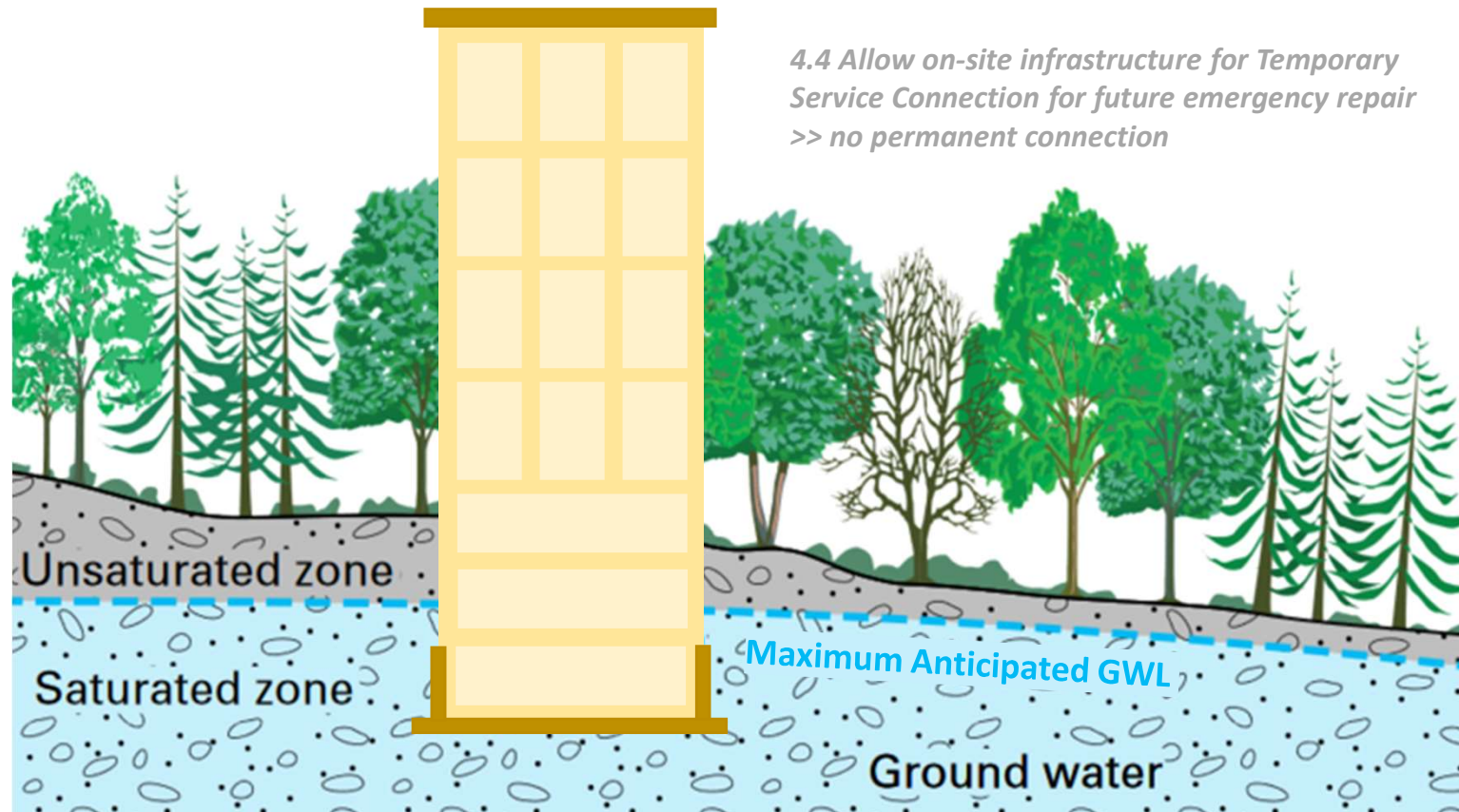
4.4

Foundation Drainage infrastructure may be installed on private property that could allow for a **Temporary Service Connection** to facilitate **future emergency repairs** to On-site Management measures.

Short-term Discharge of Foundation Drainage may be permitted to the City's sewer system, under the following conditions:

- a) Short-term Discharge meets the applicable **quality limits** of the Toronto Municipal Code - **Chapter 681, Sewers**.
- b) Short-term Discharge to the City's sewer system will occur only under **Dry Weather Flow** conditions and a Servicing Report, prepared by a Qualified Professional with a P.Eng. license, confirms adequate sewer capacity will be available in the receiving sewer system.
- c) All requirements for obtaining *Private Water Discharge Permit* will be satisfied for Short-term Discharge.

4. Policy Statements



5. Exemption Authority

Where Policy Statements cannot be met, at the written request of the development applicant, TW-GM **may exempt** certain provisions of the Policy to allow Long-term discharge:

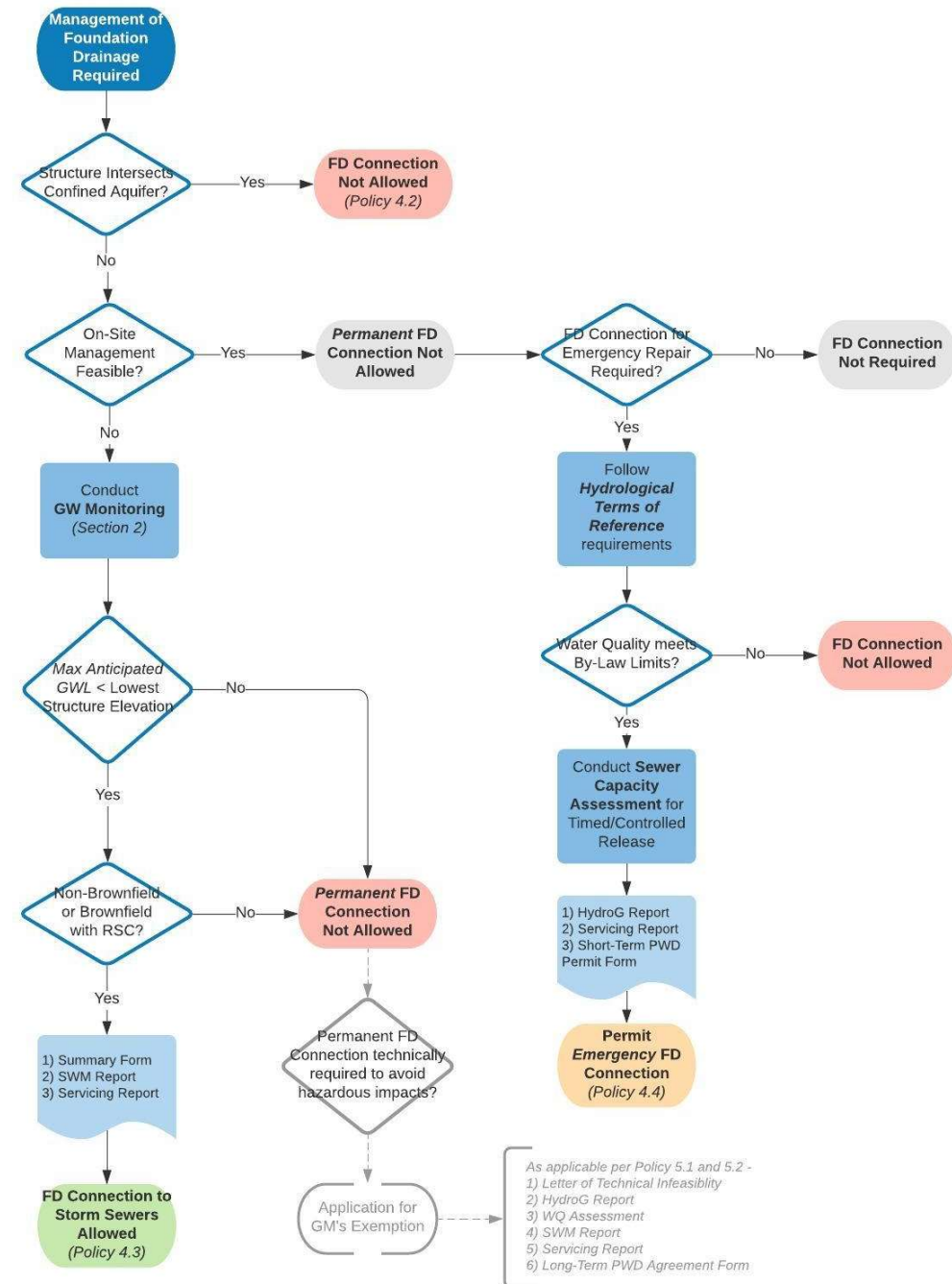
- Demonstrate technical and practical infeasibility
- Existing process for **Private Water Discharge Agreement** following requirements of **Hydrological Terms of Reference** and compliance with **By-Law**.
- Concept of reasonable and practical measures that are operationally and financially sustainable to meet By-Law limits.
- **Servicing Report** requirements to confirm adequate capacity.

6. Guidelines

1. Outlines **Review Process**
2. Supports Implementation of **Policy 4.3** >> Guidance on minimum GWL Monitoring and Analysis
3. Provides **Summary Form**
4. Notes **Peer Review** Process
5. Does not supercede *Hydrological Review Terms of Reference, Private Water Discharge Approval Application or By-Law* requirements

6. Guidelines

Review Process Flow Chart



6. Guidelines

Groundwater Monitoring for Policy 4.3

1. # Monitoring Wells

2. Monitoring Period

- a) Flexible Year-Round - 3 bi-weekly measurements
- b) Peak Season (April, May, June) - 6 bi-weekly measurements

3. Max Anticipated GWL

- a) *Peak Static GWL Observed + Fluctuation Allowance*
- a) *Peak Static GWL Observed + 0.8 m*

Table 1: Fluctuation Allowance for determining Maximum Anticipated GWL

Month of Observed Peak Static GWL	Fluctuation Allowance [m]
January	1.9 m
February	2.1 m
March	1.9 m
April	1.6 m
May	1.3 m
June	1.9 m
July	3.1 m
August	2.4 m
September	2.6 m
October	2.8 m
November	2.3 m
December	2.4 m

Source: Terrapex Study for TW

7. Implementation Timeline

- Target November 1, 2021 – Policy Release on City Website (existing review and permitting applicable)
- Target January 1, 2022 – Effective Date for *New Applications*
- Jan 1 – Dec 30, 2022 – To consider case-specific exemptions subject to conditions, peer review.
- Where exemptions are sought, external peer review may apply