

January 14, 2026

TD Consulting INC.
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RE: EP25005 – Proposed Self Storage Development

Stormwater Management Brief

Introduction:

This Stormwater Management (SWM) Brief has been prepared in support of the application for Zoning Bylaw Amendment to allow the construction of a proposed self storage development located in the township of Trent Lakes near the town of Bobcaygeon, Ontario. The purpose of this brief is to describe the proposed stormwater management strategy and demonstrate that post development runoff will be safely managed on site without impact to adjacent or downstream properties. Stormwater management for the proposed development will be achieved through site grading and a perimeter stormwater storage ditch system designed to provide conveyance and storage for runoff generated by a 24hr 1:100-year storm event.

Proposed Site Description

The site has a total area of approximately 25,559.2 m² (2.56 ha). The proposed development consists of low-profile self storage buildings and associated drive aisles/ parking areas. The surrounding lands are generally commercial / rural residential. Drainage from the site is ultimately conveyed to a perimeter stormwater storage ditch.

Applicable Standards & Criteria

The proposed stormwater management system has been designed in accordance with the following criteria:

- Municipality of Trent Lakes
- MECP, Stormwater Management Planning and Design Manual
- Kawartha Region Conservation Authority
- 1:100-year 24-hour storm event for on site storage and flood control from MTO

Existing Drainage Conditions

Under existing conditions, the site generally drains in sheet flow conditions toward surrounding low points and adjacent drainage features. No formal stormwater infrastructure currently exists on the property.

Proposed SWM Strategy

Stormwater management for the site is provided by a perimeter stormwater storage ditch surrounding the development. The site is graded to direct all post-development runoff to the perimeter ditch. The ditch is designed to retain runoff generated by the 1:100-year, 24-hour storm event entirely within the site limits. Runoff is stored within the ditch and infiltrates. No off-site discharge under design storm conditions.



Hydraulic Analysis

Key assumptions include:

- Total drainage area: 2.56 ha
- Design storm: 1:100-year
- Rainfall source / IDF: MTO
- Methodology: Runoff volumes were estimated using Rational Method principles with the 1:100-year, 24-hour rainfall depth from MTO IDF curve look-up tool applied with a runoff coefficient of 1.0. Storage requirements were assessed by comparing calculated runoff volumes to the available storage within the perimeter ditch system.

Results:

- Required storage volume (1:100-year): 2075.57 m³
- Provided storage volume (perimeter ditch): 2665 m³
- Storage surplus: 589.4 m³

Geotechnical Conditions and Infiltration

A Geotechnical and Hydrogeological Investigation was completed for the site by PRI Engineering Corp. The investigation identified surficial topsoil underlain by sand and gravel, with bedrock encountered at depths ranging from approximately 2.0 m to 5.2 m below grade.

Percolation rates for the overburden sand and gravel soils were estimated based on grain size distribution testing and range from 8 to 13 minutes per centimetre, corresponding to an approximate infiltration rate of 45 to 75 mm/hr. When applied to MECP draw down time requirement of 48 hours the storage ditch compiles even while under most conservative conditions. Based on the results of this investigation, the native soils are considered suitable for infiltration and extended detention within the proposed perimeter stormwater storage ditch.

Water Quality

The proposed development consists of a low traffic self storage use with limited impervious coverage. Vegetated perimeter ditching provides basic filtration and infiltration.

Erosion and Sediment Control

Erosion and sediment control measures will include silt fencing, soil stabilization, and ditch bank stabilization where applicable



Conclusion

This Stormwater Management Brief has been prepared to demonstrate that stormwater runoff from the proposed self-storage development can be safely managed through site grading and a perimeter stormwater storage ditch.

The post-development runoff is directed to the perimeter ditch, which has been designed to retain runoff generated by the 1:100-year, 24-hour storm event entirely within the site limits. Hydrologic analysis confirms that the available storage within the ditch is sufficient to accommodate the design storm without any off-site discharge.

Given the low-risk land use and limited impervious coverage, the proposed stormwater management strategy is considered appropriate for the site and is consistent with the requirements of the Municipality of Trent Lakes and KRCA.

Sincerely,

M.V. Wilson Engineering Inc.



Mark V Wilson, P.Eng.