



March 21, 2021
File: LD – 00249

The Municipality of Thames Centre
4305 Hamilton Road
Dorchester, ON N0I 1G3

Attention: Mr. Jarrod Craven

Reference: MN 233 Upper Queen Street, Thorndale
Site Servicing Design Brief

This letter provides an overview of the parameters used in the design of private services proposed for the development of the above referenced project comprising thirty-eight (38) vacant land condominium units. The site is approximately 0.98 hectares in area and is bordered to the north and south by existing low density residential units, to the west by low density residential properties fronting Upper Queen Street and to the south by a municipally owned recreation (baseball) field.

Sanitary Servicing & Wastewater Treatment

The subject development will utilize the existing sanitary sewer which is located within the Upper Queen Street road allowance as the site's sanitary outlet. A new local sewer will connect to the existing sewer in the vicinity of the intersection of the private street and Upper Queen Street and extend along the length the private street such that all units will be serviced by the new local sewer. Adequate capacity for this development at the Thorndale wastewater treatment plant is expected to be confirmed by municipal staff.

Storm Servicing & Stormwater Management

The subject development will utilize the existing Fox Municipal Drain west of the site as the stormwater outlet. On-site detention coupled with an established release rate will control post-development flows to pre-development rates.

Pre-Development Conditions

LDS Consultants obtained pre-development conditions through a desktop investigation, supplemented by the approved design of the Foxborough SWM design report prepared by Development Engineering (London) Ltd. The subject site comprises a two-storey dwelling unit and workshop and is situated to the north of the Foxborough Subdivision. It is bounded by Upper Queen Street to the north and Agnes Street one lot removed to the west. The ground surface throughout the site gently slopes toward the Fox Drain, situated on the south side of the site. Additionally, the front yards of the residential lots fronting the opposite side of Queen Street slope towards the subject site. Consequently, flows from this external area are quantified and safely conveyed through the subject site. The site was modelled using the rational method; the results of which are presented in Table 1.

Table 1 - Existing Runoff Peak Flows

Storm Event	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	250-Year
Peak Flow (m³/s)	0.04	0.04	0.04	0.05	0.06	0.07	0.08

Post-Development Conditions

Under proposed development conditions, the subject site will comprise thirty-eight (38) vacant land condominium units having a minimum lot area of 270 m² per unit, including residential and visitor parking areas. A private storm sewer system will service the development

Storm Drainage Areas & Catchments

The drainage catchment areas are described below.

- **Catchment 201** – This catchment area comprises the majority of the subject site. Runoff from this catchment flow overland to the Fox Drain under pre-development conditions. Under post-development conditions, runoff will be conveyed through the private storm sewer and be released to the Fox Drain at prescribed release rates. This catchment will accept overland flows from Catchment EX-1.
- **Catchment EX-1** – This catchment area represents the front yard areas of residential lots fronting Queen Street. Runoff from this area will flow overland to Catchment 201.

Stormwater Quantity Control

Under proposed conditions, an on-site detention strategy is used to control additional runoff generated by the development to meet water quantity objectives established by the MECP (Ministry of Environment, Conservation and Parks) and the Municipality. This strategy comprises a storm sewer network, surface and subsurface storage, and an orifice-controlled outlet. It is proposed to provide 308 cubic metres of storage through pipe and surface ponding. The site was modelled using the rational method; the results of which are presented in Table 2. The SWM strategy will attenuate post-development flow rates for storm events, including the 100-year storm with the storage elements described above and released through the orifice-controlled pipe outlet. Events exceeding the 100-year event will overtop the detention storage and flow overland to the Fox Drain.

Table 2 – Unattenuated Post-Development Runoff Peak Flows

Storm Event	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	250-Year
Peak Flow (m ³ /s)	0.21	0.27	0.31	0.40	0.49	0.55	0.77

Stormwater Quality Control

The SWM strategy will achieve quality control by using the existing wet-cell detention pond located in the Foxborough Subdivision. The pond has been sized adequately to provide “Enhanced” level treatment for stormwater discharging into Wye Creek.

Domestic & Fire Water Supply

Based on previous modelling analysis of the water distribution system, the site is serviceable from both a domestic and fire water supply perspective via the extension of the existing watermain on Upper Queen Street. In conjunction with the detailed design phase of the project, hydrant flow testing will be completed to confirm system pressures and flow rates.

We trust this submission to meet with your approval. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Respectfully,

LOS CONSULTANTS INC.

Anthony H. Gubbels, P. Eng.

Principal

Office: 226-289-2952

Cell: 519-494-7785

anthony.gubbels@losconsultants.ca

