



*File: 25094*

## **FUNCTIONAL SERVICING REPORT**

**Pleasant Manor Daycare  
1743 Four Mile Creek Road, Virgil  
December 2025**

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### **INTRODUCTION**

Upper Canada Consultants has been retained to undertake and provide a Functional Servicing Report to address the servicing needs and requirements as part of a Site Plan Application for the proposed development. The project site is located at the above noted address within the existing Pleasant Manor facility situated east of Four Mile Creek Road, north of Penner Street and west of Elden Street.

The existing site consists of the following dwelling units:

- 194 Apartment units as part of Heritage Place, Brookview, Arborview, Oakview and Creekview;
- 14 Townhouse units as part of Garden Court; and,
- 160 Beds as part of the newly constructed long term care facility

The proposed development will consist of a renovation within the existing Heritage Place building basement to provide Daycare services with rooms totalling an area of approximately 278.6m<sup>2</sup> (3000ft<sup>2</sup>). The existing space was previously utilized for storage, long-term care operations as well as a large meeting room and associated kitchen.

The objectives of this study are as follows:

1. Identify domestic and fire protection water service needs for the site;
2. Identify sanitary servicing needs for the site; and,
3. Identify stormwater management needs for the site.

### **WATER SERVICING**

There is an existing 150mm diameter watermain on the development site that is looped providing connections to the 250mm diameter watermain on Four Mile Creek Road as well as the 150mm diameter watermain on Elden Street. The proposed daycare facilities will continue to utilize the existing supply within the building.

The internal fire suppression system will be designed by an engineer and provided for approval as part of future building permit submissions. A series of on-site private hydrants will continue to



provide the necessary external fire water supply for the building. For reference, a private hydrant is located at the northeast corner of the existing building.

### **SANITARY SERVICING**

The subject property currently discharges sanitary flows to a 600mm diameter sanitary sewer on Four Mile Creek Road as well as a 200mm diameter sanitary sewer on Elden Street. 200mm diameter private sanitary sewers are located on the property conveying flows to the municipal sanitary sewer system. It is expected that sanitary flows from the existing Heritage Place building discharge to the Four Mile Creek Road sanitary sewer.

An analysis has been conducted to determine the increase in sanitary flows from the proposed development and included in Appendix A. To be conservative, the analysis assumes the existing space previously did not contribute any sanitary flows to the system. As the space is within an existing development space, no additional infiltration flows will be contributed from the development. The analysis utilizes a peak flow rate of 110L/child/day in accordance with MECP Design Criteria with a peaking factor of 4.0 and a total population of 100 children based on an area of 30ft<sup>2</sup>/child (approx. 3,000ft<sup>2</sup>). The analysis concludes a total peak sanitary discharge rate of 0.51L/s, occupying approximately 0.2% of the capacity of the existing 600mm diameter sewer on Four Mile Creek Road. As the entire peak sanitary flow from the Pleasant Manor property is calculated to be 16.14L/s, this will occupy approximately 75% of the capacity of the existing on-site 200mm diameter sanitary sewers assuming they were constructed at the MECP minimum slope of 0.40%.

Therefore, it is expected that the existing on-site sanitary sewer system as well as the downstream municipal sanitary sewer system will have sufficient capacity for the proposed development.

### **STORMWATER MANAGEMENT PLAN**

The proposed development will be confined to the basement of the existing building and only result in minor additions to the exterior of the existing building (i.e. new basement entrance, window wells, etc.) totalling an area of approximately 39m<sup>2</sup>. This area can be considered minimal and will have no quantifiable effect on the existing stormwater system on-site or downstream infrastructure. Therefore, no stormwater quantity controls will be required for this development. Additionally, these areas will also be non-TSS producing, and no quality controls will be required.



## CONCLUSIONS AND RECOMMENDATIONS

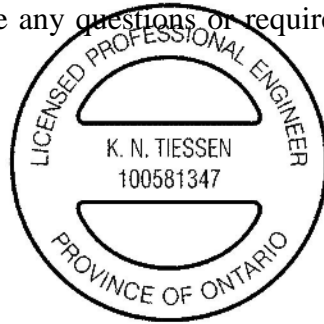
Therefore, based on the above comments and design calculations provided for this site, the following summarizes the servicing for this site.

1. The renovated basement development will continue to utilize the existing building supply from the on-site 150mm diameter watermain;
2. The downstream municipal sanitary sewer system will have adequate capacity for the development; and,
3. The development will not result in any increased peak stormwater flows. No stormwater quantity or quality controls will be necessary for the proposed project.

Based on the above and the accompanying calculations, there exists adequate municipal servicing for this development. We trust the above comments and enclosed calculations are satisfactory for approval. If you have any questions or require additional information, please do not hesitate to contact our office.

Yours very truly,

Kurt Tiessen, P.Eng.  
December 12, 2025  
Encl.





**UPPER CANADA  
CONSULTANTS**  
*ENGINEERS / PLANNERS*

## **APPENDICES**

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**UPPER CANADA  
CONSULTANTS**  
*ENGINEERS / PLANNERS*

## **APPENDIX A**

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### **Sanitary Sewer Calculations**

**UPPER CANADA CONSULTANTS**

**3-30 HANNOVER DRIVE  
ST.CATHARINES, ONTARIO  
L2W 1A3**

**DESIGN FLOWS**

RESIDENTIAL: 255 LITRES/PERSON/DAY (AVERAGE DAILY FLOW)  
 INFILTRATION RATE: 0.286 L / s / ha (M.O.E FLOW ALLOWANCE IS BETWEEN 0.10 & 0.28 L / s / ha)  
 POPULATION DENSITY: 2.4 PERSONS / UNIT

**SEWER DESIGN**

PIPE ROUGHNESS: 0.013 FOR MANNING'S EQUATION  
 PIPE SIZES: 1.016 IMPERIAL EQUIVALENT FACTOR  
 PERCENT FULL: TOTAL PEAK FLOW / CAPACITY

**MUNICIPALITY:** TOWN OF NIAGARA-ON-THE-LAKE

**PROJECT :** PLEASANT MANOR DAYCARE

**SANITARY SEWER DESIGN SHEET**

Peaking Factor=  $M = 1 + \frac{14}{4 + P^{0.5}}$  Where P = design population in thousands

**PROJECT NO:** 25094

LOCATION			AREA		POPULATION				ACCUMULATED PEAK FLOW			DESIGN FLOW						
Location and Description	From M.H	To M.H.	Increment (hectares)	Accumulated (hectares)	Number of Units	Population Density (persons/unit)	Population Increment	Total Population Served	Peaking Factor	Flow (L/s)	Infiltration Flow L/s	Total Peak Flow (L/s)	Pipe Diameter (mm)	Pipe Length (m)	Pipe Slope (%)	Full Flow Velocity (m/s)	Full Flow Capacity (L/s)	Percent Full
<b>FUTURE CONDITIONS</b>																		
Apartments					194	1.6 ppu	310											
Townhomes					14	2.4 ppu	34	344	4.05	4.11								
Long-term Care					160	1350 L/bed/day			4.00	10.00								
Daycare					100	110 L/child/day			4.00	<b>0.51</b>								
TOTAL				5.29						14.62	1.51	16.14	200	10.0	0.40	0.67	21.64	74.6%
Daycare					100	110 L/child/day			4.00	<b>0.51</b>		0.51	600	93.0	0.17	0.90	264.11	0.2%

\*\*\*Impact on FMCR 600mm diameter sewer