



Township of Springwater – Growth Management Study, Water and Wastewater Servicing

To: Deborah-Ann Liske, Jennifer Staden
From: Colin Mende, Antoine Lahaie
Cc: Kemal Kapetanovic, Frank Marzo
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Subject: Township of Springwater – Growth Management Study, Water and Wastewater Servicing

Introduction & Objectives

This Midhurst Servicing Study has been prepared to support the assessment of water and wastewater servicing requirements for a proposed 280-hectare employment area within the Midhurst community. The study area lies within a developing part of the Township of Springwater, where significant upgrades to municipal water and wastewater systems are underway, including new well supplies, water treatment facilities, and a new wastewater treatment plant. This technical memorandum consolidates available background information, referenced planning documents, and master planning material to establish a high-level servicing context for the study area. Maps of the proposed employment area are displayed in **Figure 1** and **Figure 2**.

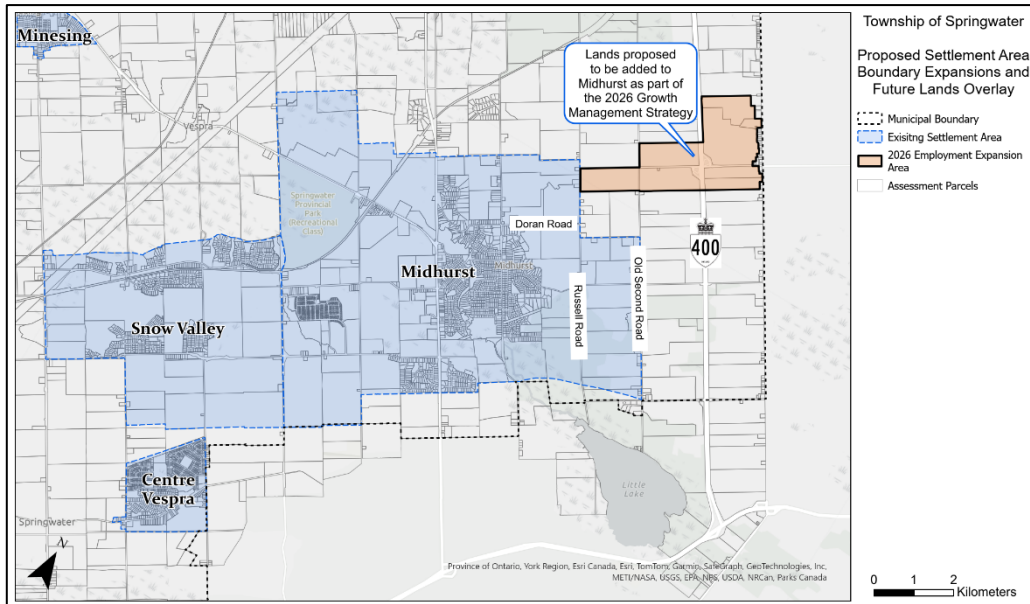


Figure 1: Proposed Employment Expansion Areas within the Township of Springwater

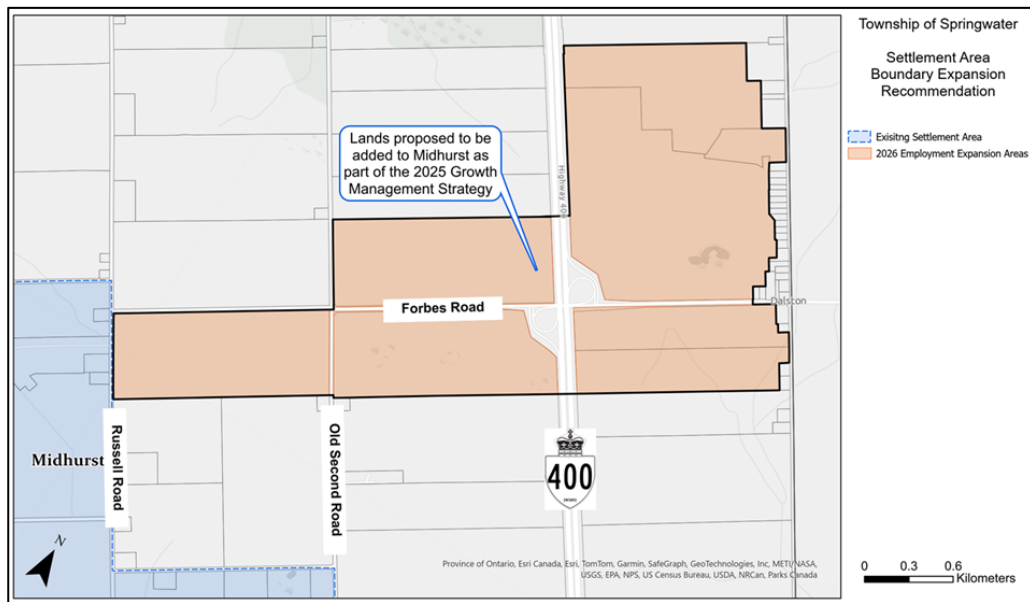


Figure 2: Close-up View of Proposed Employment Expansion Areas

References

This memorandum was developed using information sourced directly from the 2020 Midhurst Class Environmental Assessment (Class EA) and 2025 Master Plan Study – Technical Memorandum No. 1 (Master Plan Study). The servicing assumptions, system capacities, projected demands, and infrastructure phasing referenced throughout this study are based on the planning framework, design criteria, and growth forecasts established in these documents. The Class EA forms the technical basis for evaluating the feasibility of servicing the proposed development lands and determining whether the



future Doran water and wastewater systems could accommodate additional growth within the Midhurst planning area.

Background Review

Existing Water System

The existing Midhurst water system is a groundwater-based system consisting of three water treatment plants, four drilled wells, two elevated storage tanks, and two booster pumping stations (Forest Hill and Park Trail). The system is distributed by approximately 31.7km of PVC watermains.

Components

Wells

- The Midhurst system is a well-based system. The existing system includes three water plants, each supplied by drilled groundwater wells. Each well is equipped with a submersible well pump and flow meter.

Water Treatment Plants

- The Midhurst system includes three water plants at Idlewood, Greenpine, and Carson Road.

Standpipes

- Water is treated with sodium hypochlorite and sodium silicate at each pump house. After treatment, water is stored in two standpipes located along Park Trail with a combined capacity of 2075m³.

Booster Pumping Stations

- There are also two booster pumping stations (Forest Hill & Park Trail), each equipped with an in-line booster pump to provide additional pressure for residents.

Future Expansions:

- Two major new water treatment plants are being implemented by developers for the Carson Road and Doran Road development areas, with further expansions planned to serve ultimate development in Midhurst.

The figure below presents the planned water and wastewater system upgrades, as referenced from the Springwater Water & Wastewater Master Plan – Public Information Centre (PIC) Phase 2 presentation slides prepared by Ainley Group.

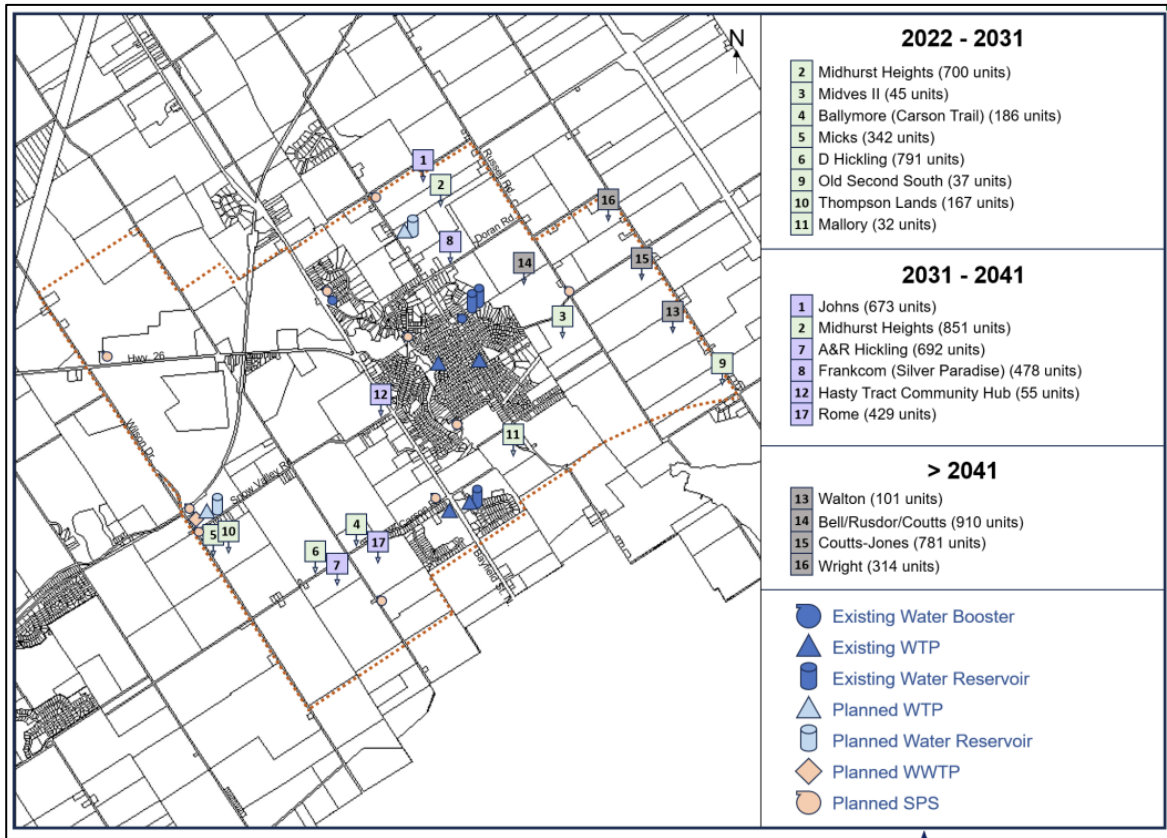


Figure 3: Planned Growth Areas in Midhurst

Zones

The Midhurst water system is organized into three main well-supply areas, as summarized in Table 1.

Table 1: Existing Midhurst Water System Capacities

Area	Existing Capacity	Notes
Idlewood	Well 2 & Well 3 Capacity: 3,498 m ³ /day	
Greenpine	Well 4 Capacity: 1,958 m ³ /day.	
Carson Road	Well 5 Capacity: 1,642 m ³ /day.	Separate pressure zone – operates independently from the other Midhurst wells due to elevation differences and pressure considerations



The Doran area surrounding the Doran Road and Russel Road area is tied for future development with a new water treatment plant to support growth with planned future service. Phase 1 of construction is scheduled for 2026.

Table 2: Drinking Water System Capacities in Midhurst

System Name	Rated Capacity (m ³ /d)	Firm Capacity (m ³ /d)	MDD (m ³ /d)	% of Rated Capacity	%Population Increase to 2041	Future Estimated% of Rated Capacity
Midhurst – Idlewood	3498	4219 (combined firm capacity)	1426	41	115 ¹	47
Midhurst – Greenpine	1958		1160	59	115 ¹	68
Midhurst – Carson Rd	1642		698	43	115 ¹	49

Notes:

1. The population predictions were taken from the Master Plan Study. The study assumed no growth to be added to the existing systems; however, a 15% intensification factor was applied to the existing population to comply with County of Simcoe requirements.

Wastewater System

Midhurst is currently serviced by an operational interim municipal wastewater system. The system consists of a sanitary sewer collection network, pumping station, and the Phase 1 Midhurst Valley Wastewater Treatment Plant, which has been constructed and is in service as of 2023. The interim WWTP is presently treating wastewater from the initial phases of development (approximately 300–350 residential units connected) and has an approved treatment capacity on the order of 1,000 m³/day, sufficient to service roughly 1,500 residential units. The facility is intended as an interim solution pending future expansion to accommodate full build-out of the Midhurst Secondary Plan area.

Existing Linear Infrastructure

Water and sanitary servicing infrastructure associated with the Midhurst Heights Development is located immediately adjacent to the proposed employment area and is expected to be completed in 2026. According to the Midhurst Heights Development drawing package (Crozier & Associates Consulting Engineers, 2021), watermains and sanitary sewers will be constructed in this adjacent development, providing an opportunity for future servicing connections.

The east end of the Midhurst Heights Development is to be serviced by 300mm watermains along Beech Parkway and Jack Pine Parkway. Sanitary servicing includes a 200mm sanitary line Beech Parkway, and 300mm and 375mm sanitary lines on Jack Pine Parkway.



This linear infrastructure forms part of the broader Doran Road servicing network and is intended to convey flows from the future Doran WTP and the planned municipal wastewater treatment facilities. The presence of adjacent linear infrastructure confirms that practical servicing tie-in opportunities will exist. A map of the sanitary and water servicing in the Midhurst Heights Development is displayed in **Figure 4**.

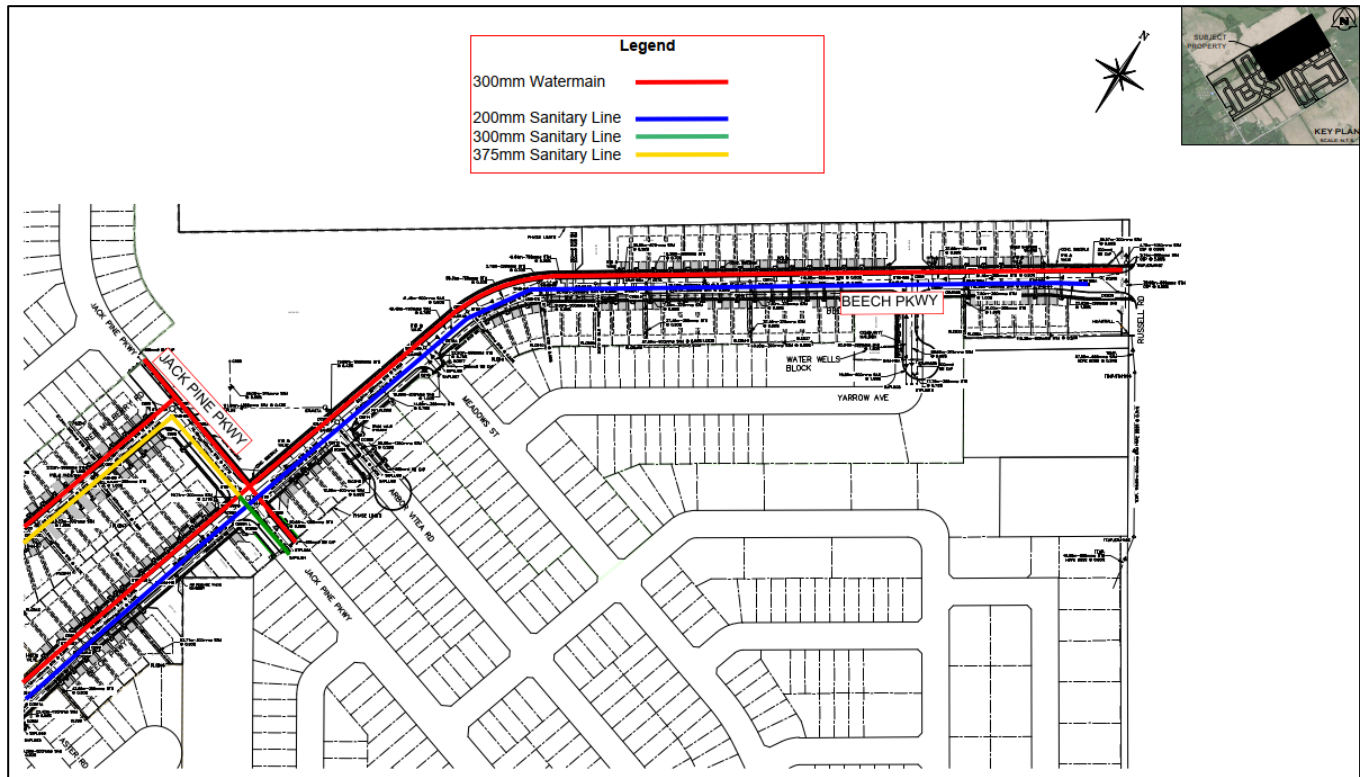


Figure 4: Midhurst Heights Development Site Servicing Plan

Site Requirements

Growth Predictions

A population density of 15 persons per hectare, which is a commonly applied assumption for employment area planning in Ontario, has been used to estimate the projected population for the 280-hectare study area. The employment density of 15 persons per hectare applied in this servicing assessment is assumed to represent a gross land area density. As such, the density implicitly accounts for internal roads, stormwater facilities, and other non-developable areas within the expansion site to provide a high-level overview. Using this density, the population was calculated below:

$$\begin{aligned}
 \text{Population} &= \text{Area} \times \text{Density} \\
 &= 280 \text{ ha} \times 15 \text{ ppl/ha} \\
 &= 4,200 \text{ people}
 \end{aligned}$$

A unit demand of 150 L/person/day, which is also a typical design assumption for employment areas in Ontario municipal servicing studies, was applied to estimate the water demand the Average Day Demand (ADD).



$$\begin{aligned}
 ADD &= \text{Population} \times \text{Unit Demand} \\
 &= 4,200 \times 150 \text{ L/d} \\
 &= 630,000 \text{ L/d, equivalent to } 7.29 \text{ L/s}
 \end{aligned}$$

Standard peaking factors taken from the Class EA were applied to the ADD to calculate the maximum day demand (MDD) and peak hour demand (PHD). Based on standard municipal peaking factors, the resulting design flows are 7.29 L/s (ADD), 13.85 L/s (MDD), and 20.78 L/s (PHD), which form the basis for the servicing analysis.

Table 3: Predicted Water Demands

Scenario	Predicted Demand	Peaking Factors
ADD	7.29 L/s	1.0
MDD	13.85 L/s	1.9
PHD	20.78 L/s	2.85

Servicing Feasibility

Future Water System Upgrades

In addition to the existing systems, there are two major new water treatment plants (WTPs) in Midhurst being implemented by developers to service the Carson Road Development Area (Midhurst Valley WTP) and the Midhurst Heights Development Area (Doran Road WTP). Phase 1 of the Midhurst Valley WTP was commissioned in December 2022, and Phase 1 of the Doran Road WTP is scheduled to be commissioned in 2026, servicing populations of 1,200 and 11,748 respectively.

The following information regarding Doran WTP was taken from the Class EA:

- Construction of 3 equally sized production wells at the Doran Road well site with any 2 being capable of providing a total of 100 L/s with raw water transmission main to the WTP proposed to be located east of Gill Road within the Development
- Construction of production wells at the Old School Road site with a minimum of 2 wells each rated at a minimum of 40 L/s with raw water transmission main to WTP (to meet the Phase 1 demand)
- In-ground storage tank with a minimum capacity of 4,470 m³ expandable to meet the ultimate required minimum capacity of 5,382 m³ to provide storage requirements for emergency, fire storage and equalization volume for peak hour demand. Ultimate overall cell volume is to be increased to 6000 m³ (5 cells, each with volume of 1200 m³)
- A pumping station will be built as part of the WTP to provide the peak hour demand to Doran Road Area and maintain pressure, can also house fire pumps to provide 133 L/s for 3 hours
- The anticipated MDD demand for Doran Road area starts at 5.8 L/s (phase 1) and increases to 58.9 L/s at the end of Phase 1. In the ultimate stage, the MDD is predicted to range from 77.7 to 132.8 L/s



- Doran WTP is intended to service the lands designated for urban development under the Midhurst Secondary Plan—approximately 300 hectares cleared for development out of the total 756 hectares originally proposed. It will serve the Doran Road development area at ultimate buildout (about 5,299 units)

Future Water Site Capacity

According to the Class EA, the Doran Road site will include three production wells, with any two capable of supplying 100 L/s, supplemented by an additional two wells at the Old School Road site providing a combined 80 L/s. The planned well capacities are summarized in the table below.

Table 4: Future Doran WTP Well Capacity

Location	Well Capacity
Doran Road Site	3 wells, with 2 giving 100 L/s
Old School Road Site	2 wells at 80 L/s
Total	180 L/s

The predicted MDD demand at 2041 Doran Road area is 77.7 to 132.8 L/s. As stated in the Class EA, this is a significant range and consideration may be given to the provision of more than one treatment train at the Doran WTP to provide extra capacity. This study uses 132.8 L/s to analyze a worst-case scenario; however, it should be noted that actual future demands may be lower than this upper-end value used.

The required treated water storage volumes in **Table 5** were calculated using the A + B + C storage method prescribed in the MECP Design Guidelines for Drinking Water Systems, which was used in the Class EA and Master Plan Study. This method divides total storage into three components:

- A – Equalization Storage, calculated as 25% of the system Maximum Day Demand (MDD) expressed in cubic metres
- B – Fire Storage, based on the required fire flow of 133 L/s for a duration of 3 hours
- C – Emergency Storage, defined as 25% of the combined volume of A + B to provide additional reserve capacity during outages or operational interruptions

The total required storage is obtained by summing A + B + C. The calculated required water storage volume is summarized in **Table 5**.

**Table 5: Future Doran WTP Storage Capacity**

Location	Units	Planned Doran Developments	+ Proposed Site Included
No. of Units	Units	5,299	-
Population	#	15,897	20,097
ADD	L/s	69.9	77.2 L/s
MDD	L/s	132.8	146.6 L/s
PHD	L/s	199.3	220.1 L/s
Fire Flow	L/s	133	133
Fire Duration	hr	3	3
A=25% of MDD	m ³	2,869	3,168
B= Fire Flow	m ³	1,436	1,436
C = 25% of (A+B)	m ³	1,076	1,151
Required Storage Volume = A + B + C	m³	5,382	5,755

Overall, the Doran WTP will have a combined available water production capacity of 180 L/s. Compared to the projected ultimate maximum day demand for the Doran service area (132.8 L/s), and the study site's estimated MDD of 13.85 L/s, the future system demonstrates surplus capacity (146.65 L/s required). When full buildout of the Doran community is considered, well capacity remains. In addition, the combined storage requirement calculated for the Doran service area and the proposed site is approximately 5,755 m³, which is below the planned ultimate treated water storage capacity of 6,000 m³ at the Doran WTP.

Therefore, the anticipated future upgrades, including expanded well supply and storage at Doran Road WTP, are expected to fully support the servicing needs of the proposed development.

Future Wastewater System Upgrades

Wastewater System Upgrades

A new municipal wastewater treatment plant (WWTP) is currently being constructed to service the Midhurst Urban Settlement Area, supported by the Midhurst Heights Sewage Pumping Station and forcemain system that will convey flows from the Doran Road Development Area. The plant is designed to accommodate the Midhurst predicted average daily flows (ADF). Phase 1 of the WWTP, scheduled for commissioning in 2029, will provide 2,500 m³/d (28.9 L/s) of treatment capacity using a biological nutrient



removal process with membrane filtration and UV disinfection. A future expansion to 12,314 m³/d (142 L/s) is planned to accommodate long-term growth in the community.

As of March 2025, the Township has predicted an average daily per capita wastewater flowrate of 315 L/c/d for a population of 28,638 persons. This results in a total of 9,021 m³/d average day flow rate.

Future Wastewater Capacity

Based on the projected average day wastewater flow for the study area (7.29 L/s or 629.86 m³/d), even with full buildout of the Doran area ADF of 9,021 m³/d, remaining capacity is available and below the available 12,314 m³/d capacity. This assessment relies on ADF values for the proposed site, and wet weather flows will be higher due to inflows and infiltration. Based on ADF, planned wastewater treatment infrastructure is anticipated to adequately support the servicing needs of the proposed development.

Conclusions

Based on the review of existing servicing infrastructure, planned system expansions, and projected water and wastewater demands for the proposed 280-hectare employment area, the analysis indicates that the future upgrades underway in Midhurst are sufficient to accommodate the needs of the new site. Planned additions—including the Doran WTP, expanded well capacity, new storage facilities, and the new municipal wastewater treatment plant provide servicing capacity beyond the site's predicted maximum day water demand and associated wastewater flows.

This assessment has been prepared as a high-level servicing overview to support growth planning for the proposed employment area. Water and wastewater demands were estimated using standard municipal planning assumptions, including a gross employment density that accounts for non-developable lands. As the proposed employment area progresses through more detailed planning and engineering stages, refinements to land use, density and servicing layouts may result in changes to projected water and wastewater demands.

References

Midhurst Heights 1A1B – Civil Engineering Drawing Set
Crozier Consulting Engineers, 2021.

Midhurst Water, Waste Water & Transportation (Phase 3 and 4) Environmental Study Report – Midhurst Class EA.
Ainley Group, 2020.

Springwater Water & Wastewater Master Plan Study – Technical Memorandum No. 1.
Ainley Group, 2025.

Township of Springwater Water and Wastewater Master Plan – Public Information Centre (PIC) Phase 2 Presentation.
Ainley Group, 2025.