

Water and Wastewater Capacity Assessment Report 2021 Year End Report

Executive Summary

This report provides an assessment of water and wastewater treatment systems capacity within the Town for 2021. Current Town water supply and wastewater treatment infrastructure includes:

- The Blue Mountains Water Treatment Plant & Distribution System
- Supplemental water supply from the Town of Collingwood
- Thornbury Wastewater Treatment Plant & Collection System
- Craigleith Wastewater Treatment Plant & Collection System

According to Ministry of the Environment Conservation and Parks (MECP) Guideline D-5-1 entitled “Calculating and Reporting Uncommitted Reserve Capacity at Sewage and WTPs”, “The number of lots in approved plans of subdivisions, developments committed by virtue of approved zoning, new official plans or site-specific official plan amendments, should not exceed the design capacity of the sewage and/or water system. To ensure that capacity is not exceeded it is necessary to determine what uncommitted reserve capacity is available. This procedure provides a means for determining uncommitted reserve capacity.”¹ *** See note in TWWTP for modified calculation method.

Key Definitions: Allocations versus Reservations

Built capacity Servicing capacity of existing built Town WTP and WWTP facilities and associated infrastructure (e.g. distribution and collections systems).

Design capacity Servicing capacity of planned Town water supply and wastewater treatment facilities and associated infrastructure based on designed and approved capacity, typically available when an ECA is obtained.

Allocation* Commitment of built plant capacity; and “allocation of servicing capacity” or “allocated servicing capacity” shall have a corresponding meaning.

Reservation* Commitment of approved design capacity, available when design is completed, and approvals are obtained and “reservation of servicing capacity” or “reserved servicing capacity” shall have a corresponding meaning.

* To determine units available for allocation, built capacity will be used. To determine units available for reservation, planned and approved capacity (e.g. facility design complete, ECA obtained) will be used. If no planned or approved capacity is available, the total capacity for reservation and allocation is the built capacity.

¹ MECP guideline D-5-1 entitled, “Calculating and Reporting Uncommitted Reserve Capacity at Sewage and WTPs”, updated March 1995.

Water Supply

1. Total Blue Mountains WTP Capacity

The firm capacity available from the Blue Mountains WTP is 15,140 m³/day. The Town receives up to 1,250 m³/day supplemental supply from the Town of Collingwood.

Therefore, the total firm water capacity available is 16,390 m³/day or 15,462 units based on the 5-year rolling MDD of 1.060 m³/unit/day.

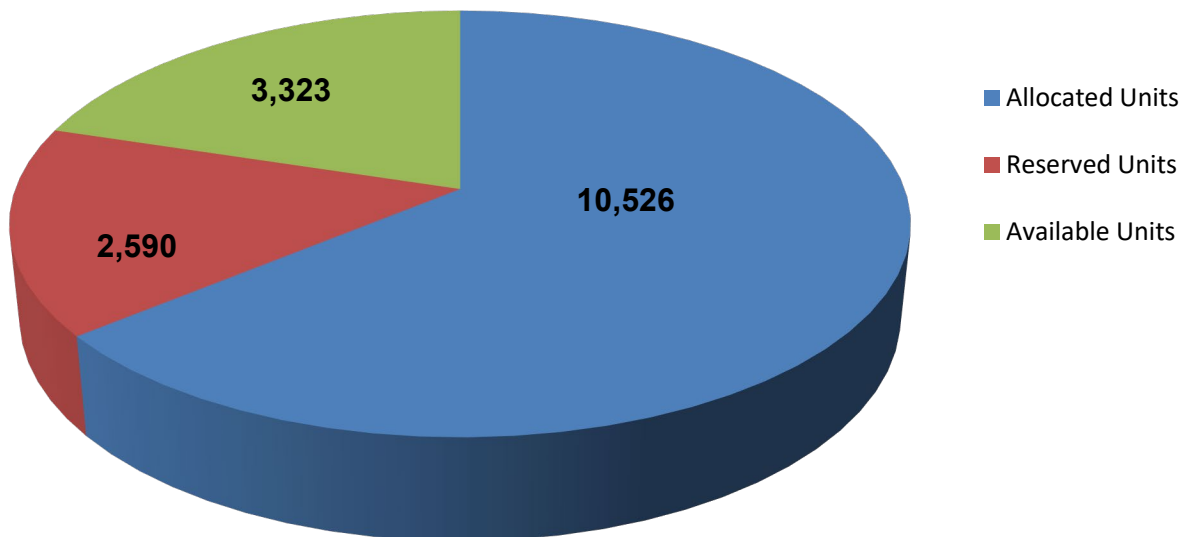
2. Available Water Capacity

A total demand of 10,494 m³/day (10,526 units) is currently connected or allocated to the water system based on a 5-year rolling average maximum daily demand of 0.997 m³/unit/day.

A total flow of 2,582 m³/day (2,590 units) is currently reserved at 0.997 m³/unit/day.

Of the 16,439 total units of water supply available, there are currently 13,116 units allocated and reserved. Therefore, the current available capacity of the Town's water supply is 3,323 units.

Town Water Unit Capacity



Thornbury Wastewater Treatment Plant

1. Total Thornbury WWTP Capacity

The total firm ADF built capacity available at the Thornbury WWTP is 3,580 m³/day or 3,687 units based on the 5-year rolling ADF of 0.971 m³/unit/day.

2. Available Wastewater Capacity Based on Planning Projections

A total flow of 3,409 m³/day (3,511 units) is currently connected or allocated to the Thornbury WWTP based on a 5-year rolling ADF. There are currently 3,511 units allocated and 231 reserved. Therefore, using planning projections the current available uncommitted reserve capacity based on built capacity is 1,752 units. However, as shown below not all units are physically connected.

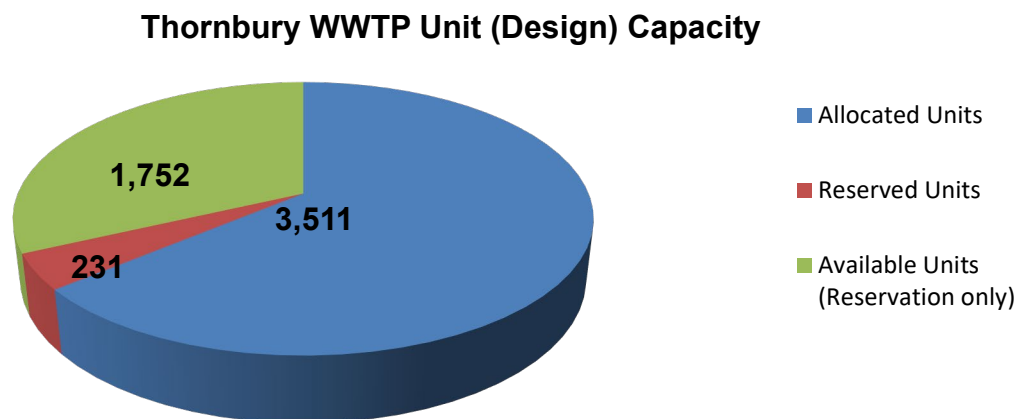
The Thornbury WWTP is quickly approaching capacity based on allocated and reserved units. However, there are 612 units (231 reserved + 381 can connect) which are not physically connected to the Thornbury WWTP.

The MECP guideline for Year End reporting has been modified through discussion between the Town, Grey County and the MECP. The purpose of the modified method is to optimize the use of the Thornbury WWTP built capacity prior to commencing construction of additional capacity. Upon completion of construction of all proposed Phase 1A works, for which the Town has approval to construct, the ADF Design Capacity available will be 5,330 m³/d or 5,489 units based on an ECA received in 2019. Therefore, the current available uncommitted reserve capacity based on design capacity is 1,752 units.

The PDF flow at the Thornbury WWTP in 2021 was 9,118 m³/day. The design PDF for the Thornbury WWTP is 7,196 m³/d. The PDF typically occurs during a period of snow melt or a significant wet weather event. The peak day occurred on September 22, 2021, during an unprecedented rain event. The peak flow event did exceed the peak capacity of the treatment plant.

3. Thornbury WWTP Estimated Expansion Timeline

The Town has commenced with the expansion of the Thornbury WWTP. It is anticipated that the work will be completed in the fourth quarter of 2024. The Thornbury WWTP is operating at 78% of the built capacity based on a five (5) year rolling average.



Craigleith Wastewater Treatment Plant

1. Total Craigleith WWTP Capacity

The total firm ADF built capacity available at the Craigleith WWTP is 8,133 m³/day or 12,138 units based on the five-year rolling ADF of 0.670 m³/unit/day.

2. Available Wastewater Capacity

A total flow of 3,842 m³/day (5,735 units) is currently connected or allocated to the Craigleith WWTP, based on a five-year rolling ADF. There are currently 5,735 units allocated and 2,648 units reserved. Therefore, the current uncommitted reserve capacity on built capacity is 3,755 units.

The PDF flow at the Craigleith WWTP in 2021 was 14,461 m³/day. This was on September 22, 2021. The design PDF for the Craigleith WWTP is 19,640 m³/d. The PDF typically occurs during a period of significant wet weather or a snow melt event. There was in the fall during an unprecedented rain event. It was estimated that 133mm of rain fell during a two-day period in the Craigleith WWTP sewer shed.

3. Craigleith WWTP Estimated Expansion Timeline

Based on the 2021 five year rolling ADF of 3,411 m³/day, the Craigleith WWTP is operating at 42% of the built capacity and as such, there is no immediate need to expand the Craigleith WWTP.

