Water and Wastewater Capacity Assessment Report 2020 Year End Report

Executive Summary

This report provides an assessment of water and wastewater treatment systems capacity within the Town for 2020. 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 m^3/day. The Town receives up to 1,250 m^3/day supplemental supply from the Town of Collingwood.

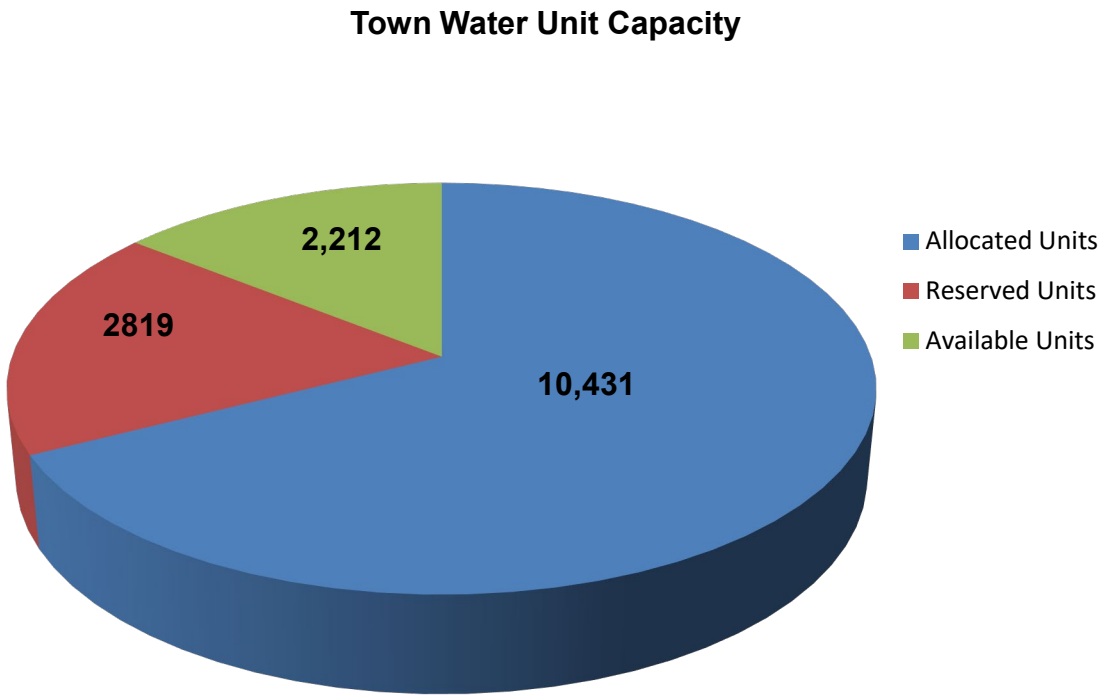
Therefore, the total firm water capacity available is 16,390 m^3/day or 15,462 units based on the 5-year rolling MDD of 1.060 m^3/unit/day.

2. Available Water Capacity

A total demand of 11,057 m^3/day (10,431 units) is currently connected or allocated to the water system based on a 5-year rolling average maximum daily demand of 1.060 m^3/unit/day.

A total flow of 2,988 m^3/day (2,819 units) is currently reserved at 1.060 m^3/unit/day.

Of the 15,462 total units of water supply available, there are currently 13,250 units allocated and reserved. Therefore, the current available capacity of the Town's water supply is 2,212 units.



Thornbury Wastewater Treatment Plant

1. Total Thornbury WWTP Capacity

The total firm ADF built capacity available at the Thornbury WWTP is 3,580 m^3/day or 3,205 units based on the 5-year rolling ADF of 1.117 m^3/unit/day.

2. Available Wastewater Capacity Based on Planning Projections

A total flow of 3,854 m^3/day (3,450 units) is currently connected or allocated to the Thornbury WWTP based on a 5-year rolling ADF. There are currently 3,450 units allocated and 315 reserved. Therefore, using planning projections the current available uncommitted reserve capacity based on built capacity is -560 units. However, as shown below not all units are physically connected.

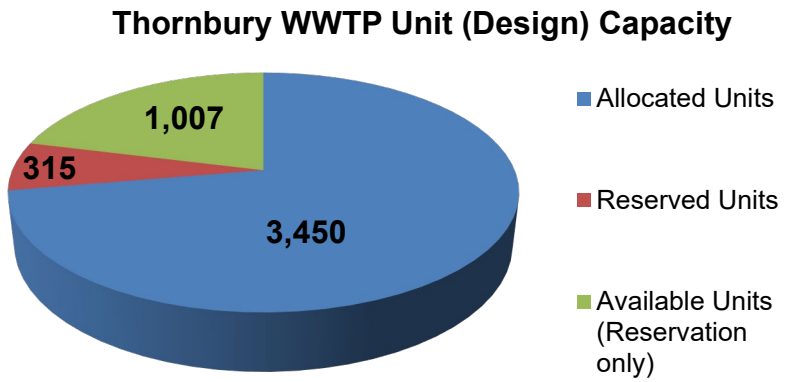
The Thornbury WWTP appears to be at capacity based on allocated and reserved units. However, there are 1,174 units (315 reserved + 832 can connect) which are not physically connected to the Thornbury WWTP.

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 m^3/d or 4,772 units based on an ECA received in 2018. Therefore, the current available uncommitted reserve capacity based on design capacity is 1,007 units.

The PDF flow at the Thornbury WWTP in 2020 was 8,397 m^3/day. The design PDF for the Thornbury WWTP is 7,196 m^3/d. The PDF typically occurs during a period of snow melt or a significant wet weather event. The peak day occurred on July 13, 2020. The peak flow occurred after a 3-day rain event. The peak flow event did exceed the peak capacity of the treatment plant.

3. Thornbury WWTP Estimated Expansion Timeline

The Town will be commencing the expansion of the Thornbury WWTP during 2021. The Thornbury WWTP is operating at 76% of the built capacity based on a five (5) year rolling average.



Craigleith Wastewater Treatment Plant

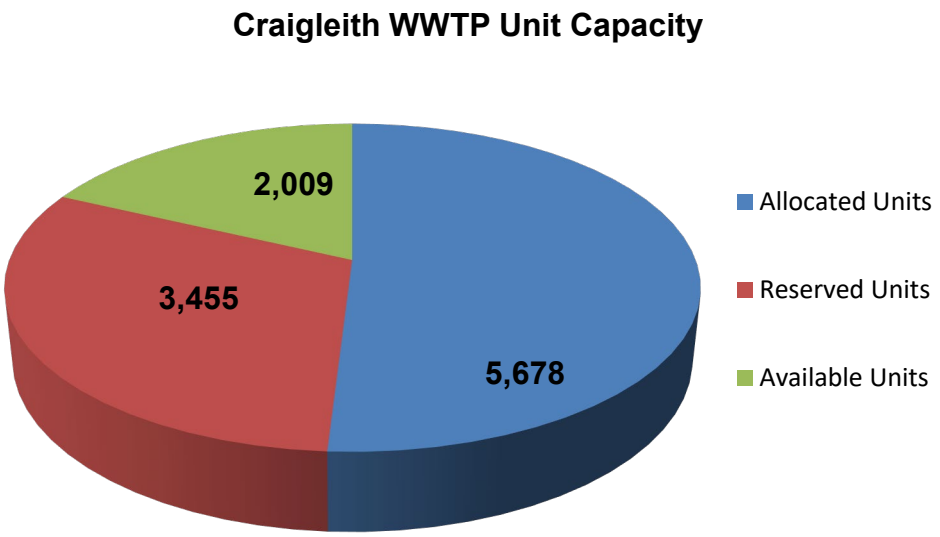
1. Total Craigleith WWTP Capacity

The total firm ADF built capacity available at the Craigleith WWTP is 8,133 m^3/day or 11,141 units based on the five-year rolling ADF of 0.730 m^3/unit/day.

2. Available Wastewater Capacity

A total flow of 4,145 m^3/day (5,678 units) is currently connected or allocated to the Craigleith WWTP, based on a five-year rolling ADF. There are currently 5,678 units allocated and 3,455 units reserved. Therefore, the current uncommitted reserve capacity on built capacity is 2,009 units.

The PDF flow at the Craigleith WWTP in 2020 was 10,558 m^3/day. This was on January 11, 2020. The design PDF for the Craigleith WWTP is 19,640 m^3/d. The PDF typically occurs during a period of snow melt or a significant wet weather event. There was an early January thaw during 2020, that contributed to the peak flow event.

3. Craigleith WWTP Estimated Expansion Timeline

Based on the 2020 five year rolling ADF of 3,376 m^3/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.