

2017 Water and Wastewater Year End Capacity Assessment Report

Council Orientation
January 7, 2019



Prepared by: Allison Kershaw
Manager of Water and Wastewater Services

Water & Wastewater Capacity Assessment 2017 Year End Report

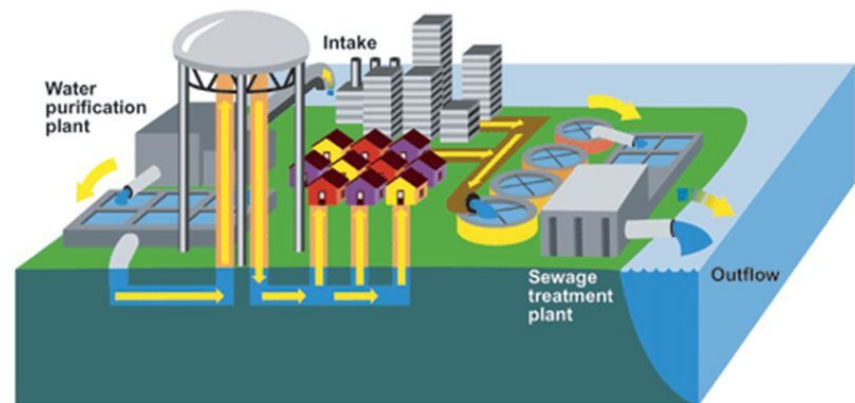
- Required to provide an annual year end Water & Wastewater Capacity Assessment Report to the Grey County Planning Department;
- Used as a monitoring tool for the provision of allocation and reservation of water and wastewater capacity for new development; and
- Provides current information on flows from existing system users.



Water & Wastewater Capacity Assessment 2017 Year End Report

- Considers the capacity of the water and wastewater systems;
- Capacity of the water treatment system and water distribution system;
- Capacity of the wastewater treatment systems (2) and collection systems (2).

Municipal water supply and sewage treatment



Water & Wastewater Capacity Assessment 2017 Year End Report

- Capacity is measured in equivalent residential units;
 - One dwelling (household) reflects one unit.
- Five year rolling average of the maximum flow rates is used to calculate the flow per unit to mitigate;
- Yearly fluctuations in demands due to weather patterns
- The impact of anomalies in the data.



Water Capacity Assessment

- The Blue Mountains WTP draws water from Georgian Bay;
- Uses microfiltration, ultraviolet irradiation and gas chlorine disinfection for the treatment of water.



Water Capacity

- TBM firm capacity WTP - 15,140 m³/day
- Supplemental supply from Collingwood - 1,250 m³/day.
- Total Capacity - 16,390 m³/day.
- TBM 5yr rolling average maximum Daily Demand - 1.044m³/unit/day.

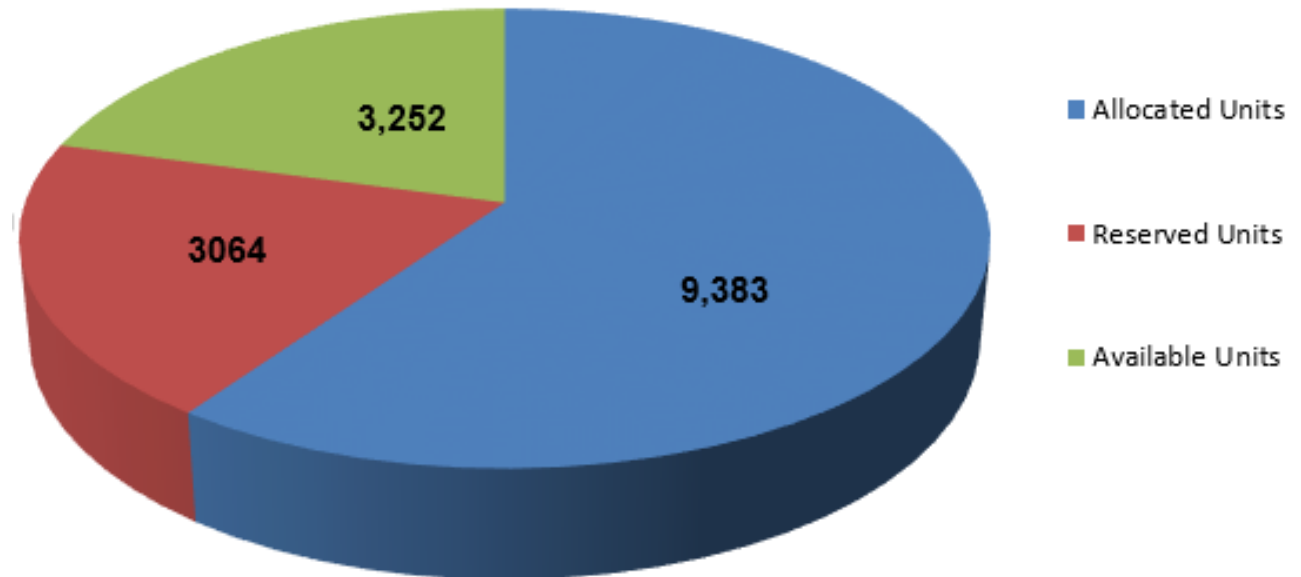
$$\frac{16,390 \text{ m}^3/\text{day}}{1.044 \text{ m}^3/\text{unit}/\text{day}} = 15,699 \text{ units.}$$



Water Capacity

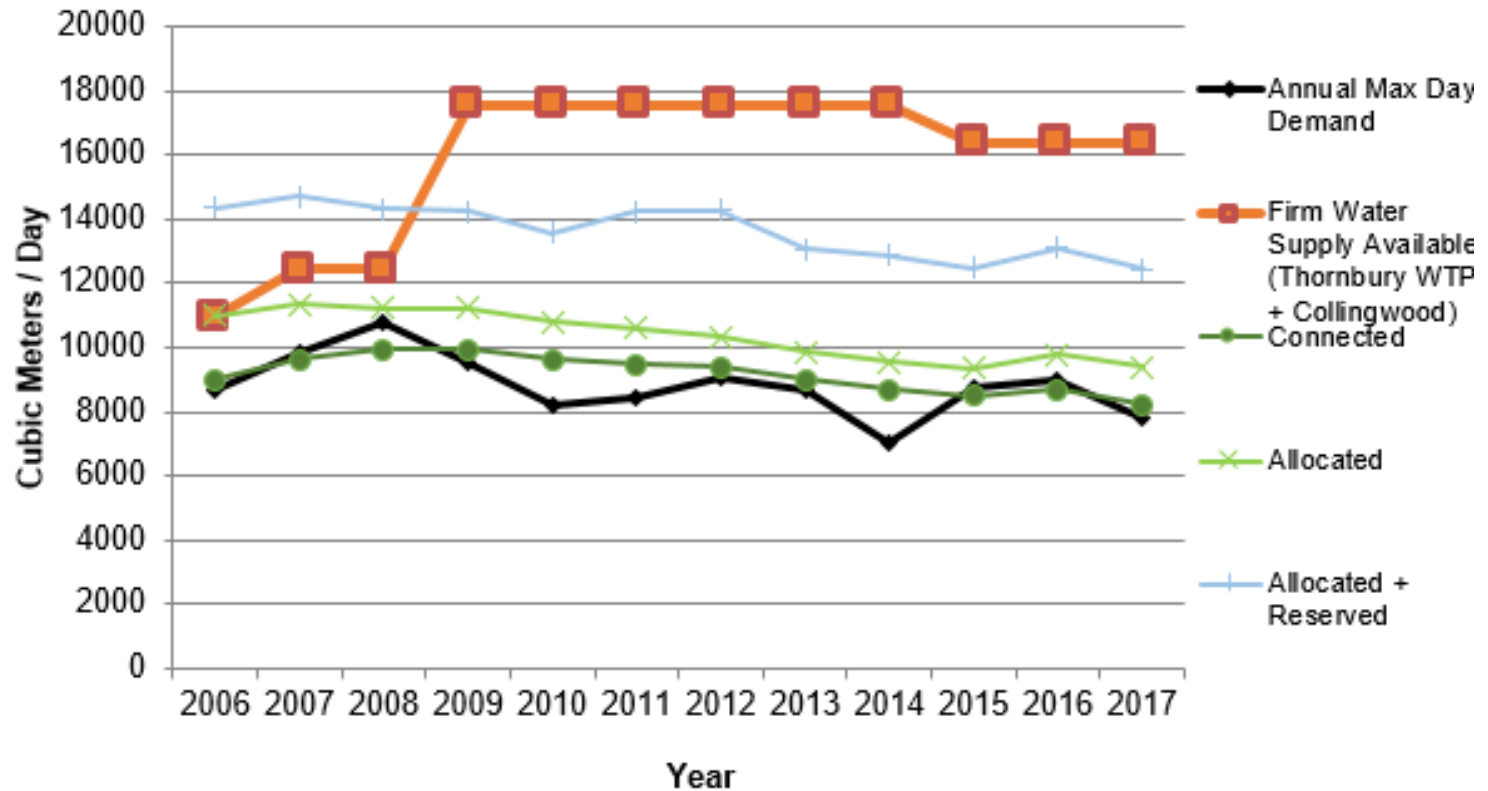
- Total system capacity 15,699 units;
- 9,383 units are allocated;
- 3,064 units are reserved.
- 3,252 available units

Town Water Unit Capacity



Water System Demands

Water Supply and Demand Summary



Wastewater Capacity

- The Town has two wastewater treatment plants and collection systems;
 - Thornbury Wastewater Treatment Plant
 - Total firm capacity of 3,580 m³/day, or 3,479 units at 1.029 m³/unit/day
 - Craigleith Wastewater Treatment Plant
 - Total firm capacity of 8,133 m³/day, or 11,172 units at 0.728 m³/unit/day.



Thornbury WWTP Capacity

- Extended aeration treatment plant with UV disinfection
- Outfall is in the mouth of the Beaver River
- Lagoon system used to store biosolids and emergency overflow storage.



Thornbury WWTP Capacity

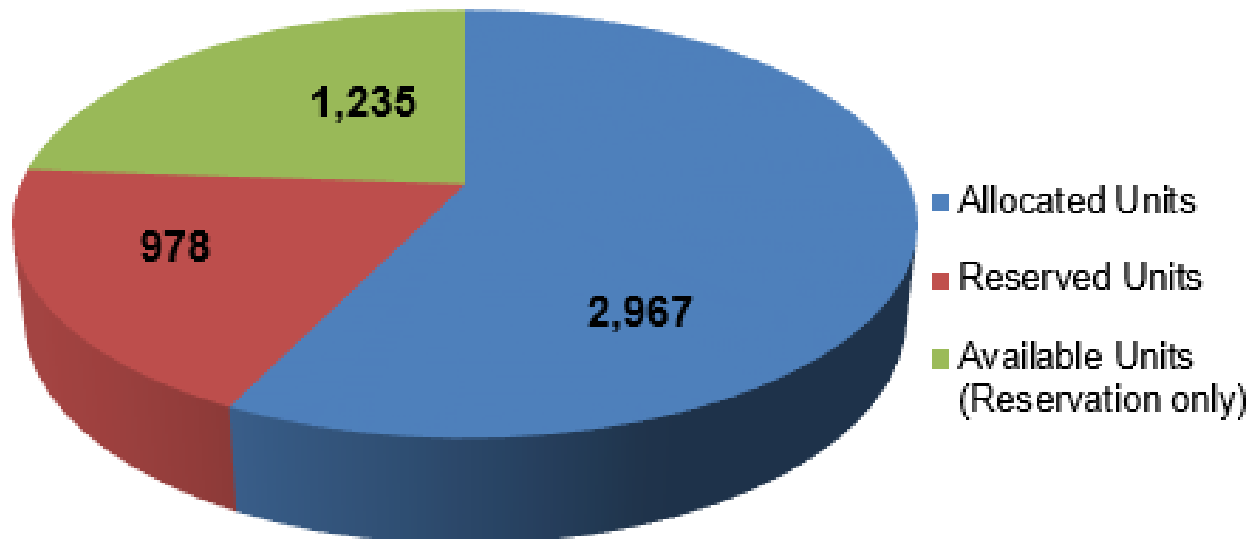
- Environmental Compliance Approval for the construction of Phase 1A expansion;
- Allows for expansion when inflow reaches 80% of capacity.
- Provides an additional average day capacity of approximately 3,500 m³/day for a total average day capacity of 7,080 m³/day.
- Expansion divided into two phases:
 - Phase 1A ADF of 5,330 m³/day.
 - Phase 1B ADF of 7,080 m³/day



Thornbury WWTP Capacity

- Total system Capacity (Phase 1A) – 5,180 units
- 2,967 units are allocated;
- 978 units are reserved;
- 1235 units are available for uncommitted reserve

Thornbury WWTP Unit (Design) Capacity

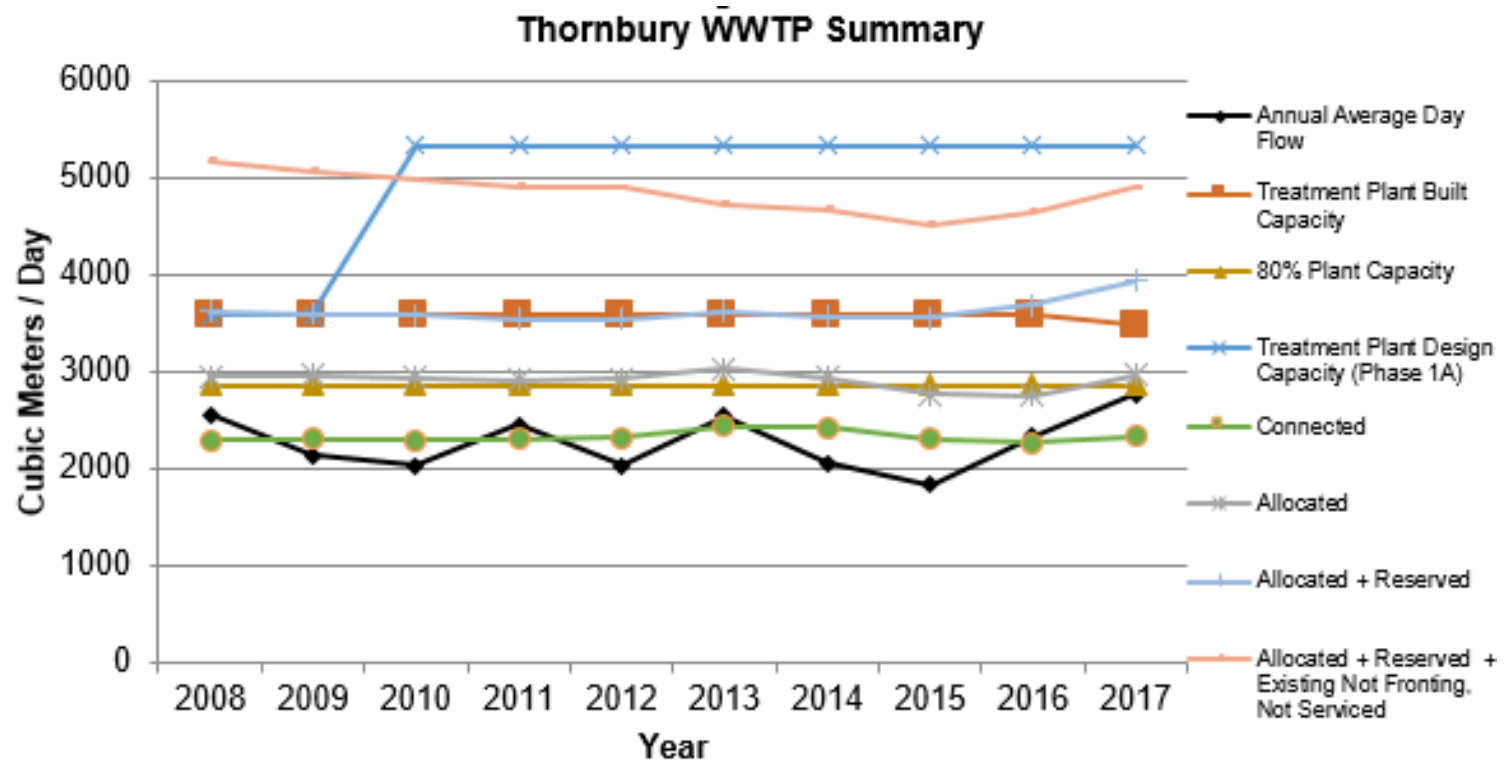


Thornbury WWTP Capacity

- Inflow is 64% of the Thornbury WWTP built capacity.
- Town does not need to take immediate measures to initiate final design;
- Continued measures to reduce inflow and infiltration of storm and groundwater will further delay the Thornbury WWTP expansion; and
- Current estimate is 10 years or 2027 before the Phase 1A expansion will be required (may be considered sooner if warrants)



Thornbury WWTP Capacity



Craigleith WWTP Capacity

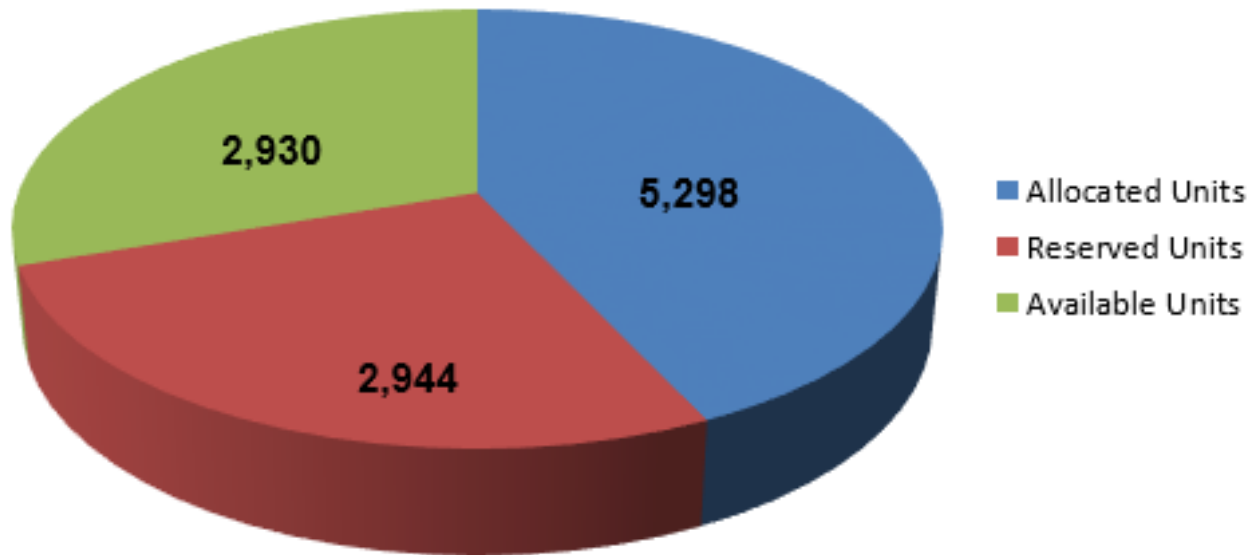
- Extended aeration treatment plant with sand filtration and UV disinfection
- Outfall is Georgian Bay, 1.2 kms offshore the end of Long Point Road



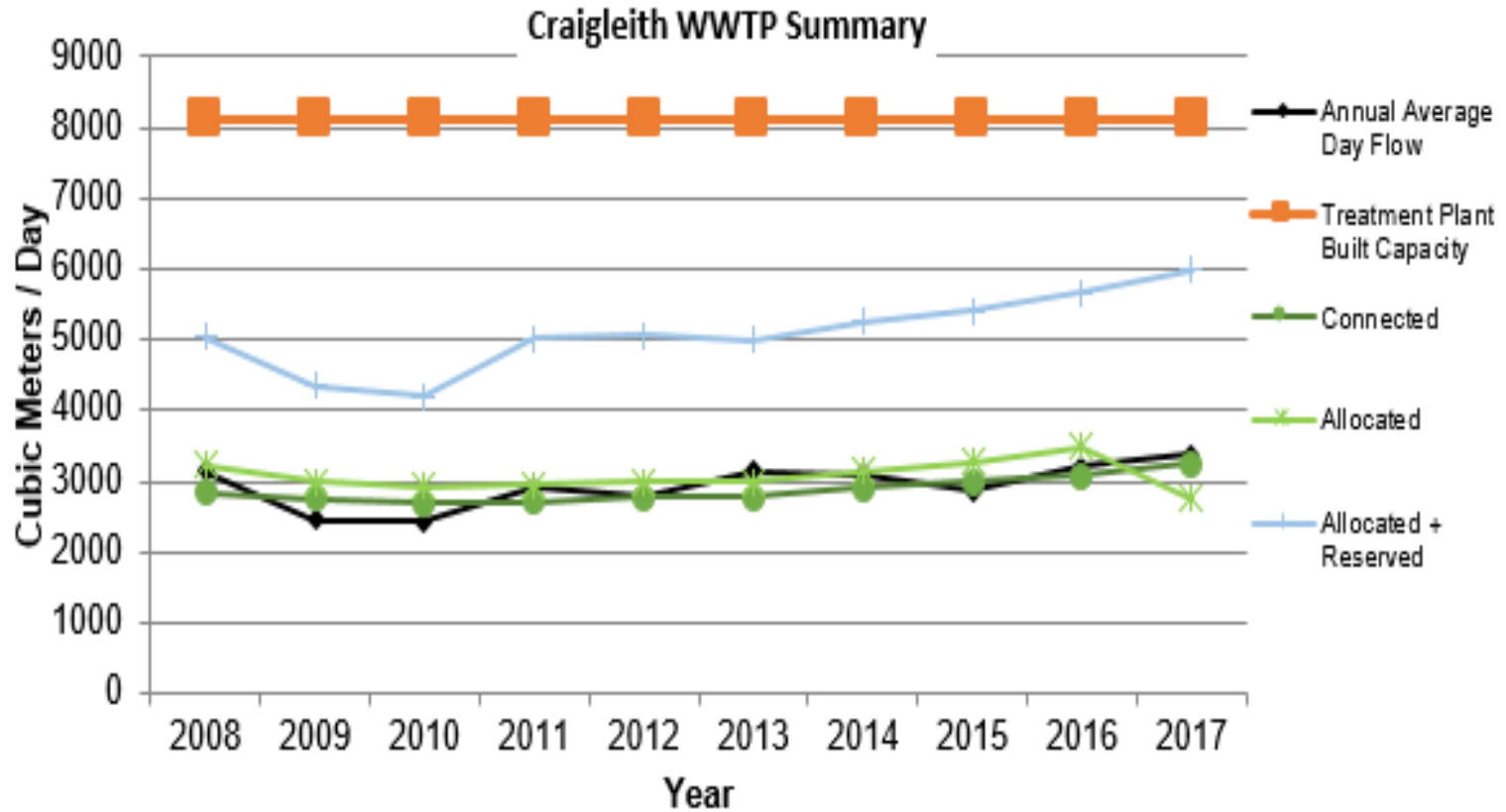
Craigleith Wastewater Capacity

- Total capacity - 11,172 units based;
- 5,298 units allocated;
- 2,944 units are reserved; and
- 2,930 available units.

Craigleith WWTP Unit Capacity



Craigleith WWTP Capacity



Water & Wastewater Capacity Assessment 2017 Year End Report

Questions ??

