TATHAM ENGINEERING

Enhancing our communities

Water Treatment & Servicing Master Plan

FINAL DRAFT REPORT

Township of Tiny

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Issue	Date	Description
0	March 3, 2025	Draft Report
1	May 9, 2025	Final Draft Report

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1 Introduction

1.1 MASTER PLAN PURPOSE, GOALS AND OBJECTIVES

The Township of Tiny (Township) retained Tatham Engineering Limited (Tatham) to prepare a Water Treatment and Servicing Master Plan (WMP) and develop a long-term strategy for maintaining and expanding the Township's drinking water infrastructure.

The WMP was prepared to:

- understand and consider the Township's drinking water needs;
- plan water supply strategies for the next 20 years that meet the identified needs;
- assist in making decisions on water infrastructure that align with the Township's goals.

The Township's goals are to:

- Improve the drinking water supply, in terms of its quality, quantity and availability. This includes:
  - upgrading the drinking water systems for the long-term;
  - addressing current and projected deficits and concerns;
  - extending municipal water to more residents, where wanted or needed; and
  - meeting a higher level of service expected by permanent residents.
- Improve the existing municipal drinking water systems':
  - reliability and resiliency;
  - operating efficiency; and
  - operation staff safety.

The intent is for the WMP to support good asset management, good fiscal management, and public health and safety.

The objectives of the WMP were to:

- Develop a full and up-to-date assessment of the capacity, performance, and condition of each drinking water system, and the opportunities for their upgrade and/or expansion.
- Identify solutions for improving the existing drinking water systems so that:
  - the drinking water needs for the next 20 years can be met reliably;
  - the Drinking Water Quality Standards continue to be met consistently;

  - the reliability and resiliency of the municipal water supply and distribution systems are improved; and,
  - the operating and energy costs are reduced through measures such as reducing the number of facilities to maintain, where feasible.
- Develop project costs, priorities, phasing plans and timelines, to support the preparation of financial plans for budgetary and planning purposes.

1.2 REPORT ORGANIZATION

The WMP report is organized as follows:

- Chapter 2 describes the project approach under the Master Plan Class Environmental Assessment process.
- Chapter 3 presents the regulatory context under which the WMP was prepared.
- Chapter 4 summarizes the Township's projected water supply needs, which are described in detail in the Needs & Opportunities Report (Tatham, 2025) in Appendix A.
- Chapters 5 to 13 present the alternative solutions to address the identified water system needs, their assessment and the recommended servicing solutions.
- Chapter 14 summarizes the public and review agency consultation that was completed to obtain input during the preparation of the WMP.
- Chapter 15 consolidates the recommended solutions with their estimated capital costs in a prioritized plan.

1.3 BACKGROUND DOCUMENTS

This WMP relied on site visits to each municipal drinking water system, numerous conversations and discussions with Township staff, and a review of background and relevant documents, reports, and data, which included the following:

- Township of Tiny Official Plan, December 6, 2022.
- Ministry of the Environment, Conservation, and Parks (MECP) Design Guidelines for Drinking Water Systems (2008).
- Township of Tiny 2022 Annual Drinking Water Reports.
- Township of Tiny 2021 Annual Summary and QMS Management Report.
- Drinking Water Works Permits, Municipal Drinking Water Licenses, and Permits to Take Water.

2 Class EA Process

2.1 MASTER PLAN CLASS EA PROCESS

The WMP was developed under the MEA Municipal Class EA process for Master Plans, and following Approach #1, such that the assessment is completed at a broad level, and more detailed investigations will need to be conducted in subsequent project-specific Schedule B and Schedule C EAs, as applicable for the recommended projects. A Notice of Completion of the Master Plan EA will be issued upon completion of the study.

The Municipal Class EA is a planning and design process to identify, compare and evaluate alternative solutions to a problem. It applies to all municipal road, water and wastewater projects, and significant private projects. It considers all aspects of the environment: natural, social, cultural and economic, and involves consultation with the public, affected parties and review agencies throughout the process.

Master plans are long-range plans that integrate infrastructure requirements for existing and future land uses with environmental assessment planning principles.

The WMP satisfies the first two phases of the Class EA process:

- Phase 1: Problem or opportunity identification.
- Phase 2: Identification and assessment, at a strategic level, of alternative solutions, then recommendation of the preferred solutions of the Master Plan that can be implemented as separate subsequent projects.

Projects that are considered Schedule A or A+ undertakings under the Municipal Class EA process can move to implementation once the Notice of Completion of the Master Plan Class EA has been issued.

Projects that are considered Schedule B or C undertakings will proceed with separate and more detailed investigations to fulfill the documentation requirements of the Class EA process, including the completion of Phases 3 and 4 of the Class EA for Schedule C undertakings.

2.2 PUBLIC, STAKEHOLDER, AND AGENCY CONSULTATION

Public, indigenous and agency consultation was an integral part of the development of the WMP. The residents, property owners, indigenous communities, relevant government agencies, and adjacent municipalities were invited to provide input on the water servicing needs and servicing alternatives at two Public Information Centers in August 2023 and June 2024. All comments and input received were taken into consideration for the evaluation of the water servicing alternatives. The consultation approach and the input received are presented in more detail in Chapter 14.

3 Regulatory Context

3.1 PLANNING

Official Plan

The Township of Tiny Official Plan (Consolidated October 2023) provides the policy context for land use planning to the year 2031 and reflects the updated County of Simcoe Official Plan.

Historically in the Township, development has occurred along the shoreline, however the Official Plan directs new development to the Settlement Areas where community facilities and appropriate infrastructure exist.

The Official Plan provides planning policies for growth of both the permanent population and the seasonal population, considering the Township's recreational context. One of its objectives is to ensure an orderly progression of development, including efficient use of land, infrastructure and services.

Asset Management Plan

The Township of Tiny Asset Management Plan (AMP, 2024), developed in accordance with O. Reg. 588/17, provides an analysis of the Township's infrastructure assets, including water system infrastructure, with the goal of minimizing lifecycle costs while maximizing value and level of service to ratepayers.

With respect to water infrastructure, the AMP provides a high level, 50-year forecast of asset replacement needs and risk analysis based primarily on asset age and estimated useful life. In contrast, the WMP provides a comprehensive assessment of both current municipal water system needs and projected needs to supply drinking water to the anticipated growth in the serviced areas over the next 20 years. The WMP also considers expanding the municipal water service area and improving fire protection. The projects recommended by the WMP, with their costs and timelines, should be considered for future AMP updates.

3.2 DRINKING WATER

Drinking Water Act and Regulations

The provision of drinking water is regulated under the Safe Drinking Water Act, 2002 (SDWA) and the Drinking Water Systems Regulation (O. Reg. 170/03 as amended). The SDWA deals with matters related to the treatment and distribution of drinking water, including the control and regulation of drinking water systems. The treatment and testing requirements for all the municipal water systems that are or will supply drinking water to the Township of Tiny are

specified under (O. Reg. 170/03). Drinking water quality standards are specified in O.Reg. 169/03 as amended.

Source Water Protection

The Clean Water Act, 2006 (CWA) mandates the protection of municipal drinking water sources. Under the CWA and its regulations, source water protection plans have been developed to protect the sources of municipal drinking water, including all municipal groundwater wells in the Township. Any new municipal intake or groundwater well for the supply of water to the Township must meet the requirements of the CWA and be managed under a source protection plan. The Township is governed by the South Georgian Bay Lake Simcoe Source Protection Plan, which came into effect July 1, 2015.

4 Water Servicing Needs

4.1 STUDY AREA PROFILE

The Township of Tiny, County of Simcoe, occupies the Penetanguishene peninsula in Georgian Bay. It is characterized by over 70 km of shoreline, most of which is occupied by seasonal and permanent dwellings and many large public beaches. On the interior, land use is mostly agricultural, rural or natural heritage areas.

The Township has five Settlement Areas: Perkinsfield, Wyevale, Lafontaine, Wyebridge and Toanche, and multiple other small communities along the shoreline. The Township shares boundaries with the Town of Penetanguishene, the Town of Midland and the Township of Tay to the east, and the Township of Springwater and the Town of Wasaga Beach to the south.

The permanent population in the Township in 2021 was estimated to be 12,966 (Tiny website). In addition, there is a significant increase in population seasonally. Approximately 50% of households are seasonal.

By the year 2031, the Township's permanent population is projected to grow to 13,213, and 689 seasonal homes are anticipated to be added (Township of Tiny Official Plan, 2022 and Simcoe County 2019 Growth Projections for Tiny, 2019).

Employment growth is anticipated to occur on lands designated as employment areas located on Concession Road 8 East and on Concession Road 9 East in the vicinity of the Huronia Airport and near Perkinsfield.

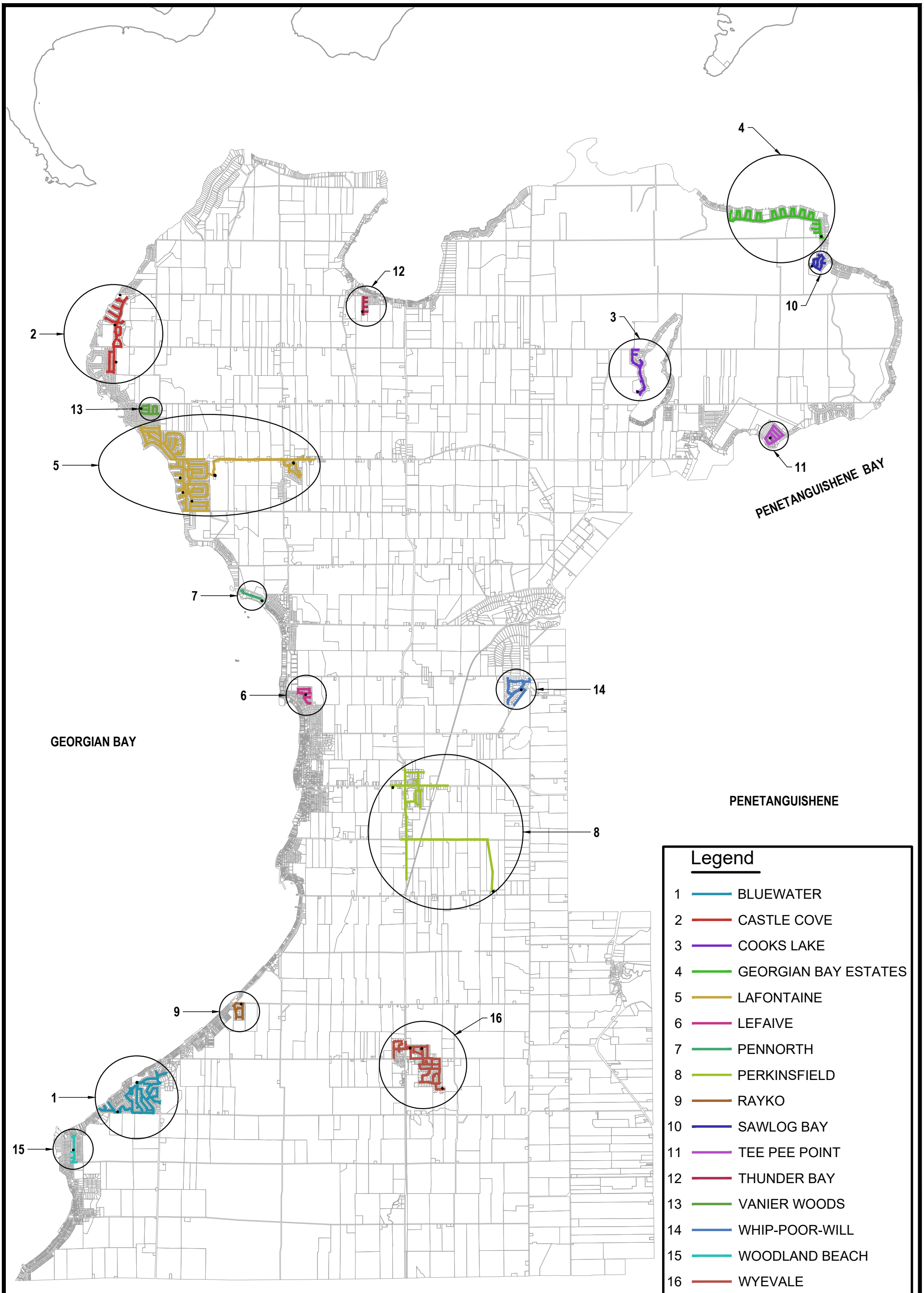
4.2 WATER SERVICING

Currently, approximately 6,500 residents have municipal water servicing, provided by 24 water system facilities in 16 municipal drinking water systems (DWS) that are owned and operated by the Township. The 16 DWS are spread throughout the Township as shown on Figure 1 overleaf.

There is no municipal sanitary servicing in the Township.

Table 1 lists the 16 DWS, the current number of connections and the population served by each DWS, as well as the projected future serviced population both year-round and seasonal.

The serviced population is anticipated to increase to 8,190 in the next 20 years from infill of new homes on existing serviced lots, from the connection of existing homes currently on private wells where municipal service is available, and on otherwise vacant lands within the municipally serviced areas. Conversion of cottages in serviced areas into larger homes is anticipated to increase the serviced population.



Legend

1	BLUEWATER
2	CASTLE COVE
3	COOKS LAKE
4	GEORGIAN BAY ESTATES
5	LAFONTAINE
6	LEFAIVE
7	PENNORTH
8	PERKINSFIELD
9	RAYKO
10	SAWLOG BAY
11	TEE PEE POINT
12	THUNDER BAY
13	VANIER WOODS
14	WHIP-POOR-WILL
15	WOODLAND BEACH
16	WYEVALE

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TOWNSHIP OF TINY
WATER SYSTEMS

DWG. No. **FIG. 1**

SCALE: 1:60,000 | DATE: JUL/2023 | JOB NO. 123142

Table 1: Population and Growth by Drinking Water System

DRINKING WATER SYSTEM	EXISTING		PROJECTED	
	CONNECTIONS	SERVICED POPULATION	CONNECTIONS	SERVICED POPULATION
Bluewater	322	773	412	1,027[1]
Castle Cove	168	403	266	659[1]
Cooks Lake	92	221	103	258[1]
Georgian Bay Estates	255	612	349	868[1]
Lafontaine	869	2,115	1,015	2,617[1]
Lefaive	69	166	87	217[1]
Pennorth	32	77	39	97[1]
Perkinsfield	209	502	219	526
Rayko	42	101	52	130[1]
Sawlog Bay	51	122	70	174[1]
Tee Pee Point	94	226	97	233
Thunder Bay	24	58	37	92[1]
Vanier Woods	73	175	103	256[1]
Whippoorwill	71	170	73	175
Woodland Beach	37	89	45	112[1]
Wyevale	291	698	312	749
Totals	**2,699**	**6,508**	**3,279**	**8,190**

Note 1: A 5% allowance was added to the projected populations of Bluewater, Castle Cove, Georgian Bay Estates, Lafontaine (Georgian Sands), Lefaive, Pennorth, Rayko, Sawlog Bay, Thunder Bay, Vanier Woods and Woodland Beach

There are areas of the Township that are relatively densely populated and that are not serviced. These include Balm Beach, a residential area on the western shoreline with typically small lots occupied by seasonal and permanent residences and small businesses. There are many other shoreline communities without water service that are adjacent to areas with municipal water service, as shown on Figure 1. The cottages in these areas are increasingly being replaced with homes that are occupied year-round.

4.3 PROJECTED WATER DEMANDS

Based on 2020 to 2022 Township operating data, the average daily water consumption rates ranged from 203 L/person/day to 511 L/person/day. The average water consumption for all Township DWS was 320 L/person/day.

The water demands for 2020 to 2022, as well as the projected water demands for each DWS, assuming the historical per capita water consumption rates will not change, are summarized in Table 2. Peak Hour Demands (PHD) were estimated using MECP peaking factors.

Table 2: Existing and Projected Water Demands

DRINKING WATER SYSTEM	WATER USAGE (L/p/day)	EXISTING			PROJECTED		
		POP.	MDD (m^3/day)	EST. PHD (L/s)	POP.	MDD (m^3/day)	PHD (L/s)
Bluewater	303	773	703	11.2	1,027	941	13.5
Castle Cove	341	403	470	7.2	659	764	10.7
Cooks Lake	404	221	380	5.6	258	446	6.5
Georgian Bay Estates	342	612	541	10	868	800	14.2
Lafontaine	491	2,115	1,969	40.6	2,617	2,504	50.3
Lefaive	203	166	242	2.1	217	275	2.8
Pennorth	206	77	63	1.4	97	79	1.7
Perkinsfield	381	502	661	9.1	526	727	10.6
Rayko	272	101	76	1.7	130	98	2.2
Sawlog Bay	221	122	110	1.7	174	156	2.4
Tee Pee Point	217	226	121	3.1	233	125	3.2
Thunder Bay	288	58	80	1.4	92	129	2.3

DRINKING WATER SYSTEM	WATER USAGE (L/p/day)	EXISTING			PROJECTED		
		POP.	MDD (m^3/day)	EST. PHD (L/s)	POP.	MDD (m^3/day)	PHD (L/s)
Vanier Woods	223	175	128	2.4	256	187	3.6
Whippoorwill	511	170	344	5.4	175	355	5.6
Woodland Beach	326	89	130	2.5	112	161	3.1
Wyevale	385	698	865	12.8	749	928	13.8
Totals	**-**	**6,508**	**6,883**		**8,190**	**8,675**	

4.4 WATER METERING

Water meters have been installed at homes in Wyevale, Perkinsfield, Cook's Lake, and Whippoorwill. The Township plans to install water meters in all serviced communities over a 10-year period to assist in reducing water consumption and to identify non-consumptive water uses such as water pipes left running and excessive lawn watering.

The Township benefits from water metering as it allows an assessment of leakage in the water distribution system, and could reduce the per capita water supply needs, resulting in opportunities to serve more customers with existing systems or delay the need for system expansions.

As water consumption tends to decrease where water meters are installed, the projected water demands presented in Table 2 are conservative in communities where water meters were recently installed.

4.5 WATER SYSTEMS CONDITION

All the DWS fully comply with the Ontario requirements under O.Reg.170/03 and O.Reg. 169/03 as amended. They produce and supply safe drinking water to all serviced properties.

For some DWS, the Township is managing groundwater that contains high nitrate concentrations to ensure the treated water supply meets the provincial drinking water quality standards.

Most DWS were installed 40 to 60 years ago, therefore some of the equipment, buildings, and wells are nearing the end of their useful life and will require replacement or repairs. The Township, through its ongoing maintenance and replacement program, has completed repairs and upgrades, including replacement of corroded piping, valves, and electrical panels at some pump houses, but more needs to be done, such as creating separate chlorine rooms to mitigate

corrosion, and improving or updating instrumentation and control systems to facilitate operation and control.

Most DWS were originally designed and constructed to be seasonal systems. Their water distribution systems consist of often poorly installed, small diameter, thin-wall PVC watermains and service connections that are now reaching the end of their useful life, resulting in breaks and leaks.

Some DWS have limited system redundancy and operational flexibility, which makes it challenging to complete necessary maintenance or repairs. This includes absence of stand-by wells and pumps, and insufficient or no water storage tanks.

Some DWS have limited capacity to supply more than the domestic water demands. As a result, required maintenance, such as flushing of the water distribution system, is difficult to perform effectively without affecting the water supply to residents.

The resiliency of many water systems could be improved to increase their reliability. For some systems, where there is limited well or equipment redundancy, a watermain break or an equipment failure could result in an extended water service interruption.

The condition and needs of each DWS are described in detail in the Needs & Opportunities Report (Tatham, 2025) attached in Appendix A.

4.6 FIRE PROTECTION

The DWS that were originally designed to serve seasonal communities generally do not have sufficient capacity or storage to supply water for firefighting. The Township's fire department utilizes a shuttle service to bring lake water or water from another DWS' storage tank to fight a fire in those communities.

Only five DWS (Bluewater, Lafontaine, Perkinsfield, Whippoorwill and Wyevale) can provide some level of fire protection. However, the available volume of water dedicated to fire protection does not meet current MECP Design Guidelines based on the serviced population, and the water distribution pumps have limited capacity to pump the higher flows that are needed to fight a fire.

While continuing to provide some level of fire protection via the municipal water systems is important, it is not a primary objective of the WMP. Nonetheless, increasing the level of service for fire protection was considered in the review of alternative solutions.

4.7 PROBLEM STATEMENT

The Township of Tiny supplies drinking water to a growing population from 16 small DWS that have a range of limitations in terms of firm capacity, source water quality and quantity, and that require upgrades to address their age, condition and performance.

The Township needs to improve the municipal water supply systems to supply safe drinking water to a larger population, more reliably.

Supply, treatment, pumping and storage facilities that are ageing and that do not meet municipal standards or projected requirements, need to be upgraded or replaced.

The system upgrades must provide reliable service for the long-term, facilitate operation and maintenance, and be cost effective.

More specifically, the Water Master Plan needs to identify the most appropriate solutions to:

- Increase the resiliency and the redundancy of the municipal DWS' supply, treatment, and pumping facilities to provide the operational flexibility to maintain a safe drinking water supply to existing customers under normal and emergency conditions.
- Upgrade, replace or repair facilities and equipment at the municipal DWS to address condition and capacity deficiencies.
- Expand or modify the DWS systems to provide the capacity to supply drinking water to the anticipated growth within the service areas for the next 20 years, and to increase the level of fire protection where cost-effective.
- Reduce excessive water consumption to minimize the need for future expansion of the municipal DWS.
- Extend municipal water service to unserviced areas where private water supplies may not provide a safe drinking water source.

5 Castle Cove, Lafontaine & Vanier Woods

The Castle Cove, Lafontaine, and Vanier Woods DWS are adjacent to each other along the Georgian Bay shoreline in the northwest of the Township. They were considered together to identify viable solutions to address their needs and improvements in system efficiency and reliability.

5.1 NEEDS AND ISSUES

The needs and issues for the Castle Cove, Lafontaine, and Vanier Woods DWS are summarized in Table 3. Further details are presented in Appendix A.

The pumphouses in Castle Cove and Lafontaine need to be upgraded, and the elevated groundwater nitrate levels need to be managed. Shortfalls in the firm supply capacities are predicted in the future. Additional storage and pumping capacities are needed for fire protection at the Lafontaine DWS.

Table 3: Castle Cove, Vanier Woods & Lafontaine DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Castle Cove	PH 4: Electrical power supply upgrades	Elevated nitrate levels in Wells 13-1 and 13-2	PH 4: Additional 668 L/min standby well for future PHD.
Lafontaine	PH 2: Corroded electrical panels replacement PH 23: Corroded piping replacement BPS 14: Communication system upgrades	Elevated nitrate levels in all wells except Well 1-1	Well 14-1 operates at half capacity to manage nitrate levels. High water consumption. Lower zone: Additional 434 L/min well for MDD. Additional fire storage (228 m^3). PH 23: Twin 30 hp vertical turbine high lift pump.
Vanier Woods	None	None	None

5.2 ALTERNATIVES AND RECOMMENDATIONS

5.2.1 Description of Alternative Solutions

To address the identified water treatment and servicing needs in Castle Cove and Lafontaine, the alternative solutions listed below were considered. These alternatives consider upgrading each

groundwater system and maintaining them as three separate DWS, or to connect them into one DWS. As one of the issues is the elevated nitrate levels in the groundwater, the option of developing a new lake-based water source to replace the wells was also considered.

- Alternative 1: Connect the three DWS and continue with groundwater supply, with required upgrades.
- Alternative 2: Connect the three DWS and supply from a new surface water treatment plant (WTP), with required upgrades.
- Alternative 3: Maintain the three individual DWS, with required upgrades.

Alternative 1

Alternative 1 would involve developing additional groundwater supplies and construction of transmission mains to connect the Castle Cove, Vanier Woods, and Lafontaine water distribution systems into one DWS. If a second well with good quality groundwater and good yield can be achieved, it would address the future supply and treatment capacity shortfall in Castle Cove as well as in the Lafontaine lower pressure zone (Georgian Sands). Connecting the water systems would improve operational flexibility to allow the needed pumphouse upgrades to proceed at the Lafontaine pumphouses, and at Castle Cove PH 4. It would also provide the opportunity for the currently unserviced homes between the three systems to connect to municipal water. The Lafontaine reservoir would be expanded to address the future storage volume shortfall for Georgian Sands. Additional storage and high lift pump capacity would be provided at Lafontaine PH 23 (upper pressure zone) to improve fire protection.

Alternative 2

Alternative 2 would involve establishing a surface water supply for the region. This would require building a WTP with a water intake into Georgian Bay and extending transmission mains to connect the three distribution systems, as in Alternative 1. A Schedule C Class EA to determine the preferred location and design concept for the WTP and intake would need to be undertaken as the first step of the planning, design, and approval process. Once the surface water supply is brought online, the groundwater wells and their treatment systems would be abandoned. The Lafontaine elevated storage tank and BPS 14 would be maintained and modified as needed to supply the upper pressure zone.

Alternative 3

Alternative 3 would consist of maintaining the three individual DWS and completing the required upgrades. Additional groundwater supply wells would need to be developed in Castle Cove and in the Lafontaine lower pressure zone. The pumphouse upgrades in Lafontaine and Castle Cove

listed in Alternative 1 would also need to be completed. The Lafontaine reservoir would be expanded to address the future shortfalls in storage capacity for the lower pressure zone (Georgian Sands). Additional storage and high lift pump capacity would be provided in the Lafontaine upper pressure zone to improve fire protection.

5.2.2 Assessment of Alternative Solutions

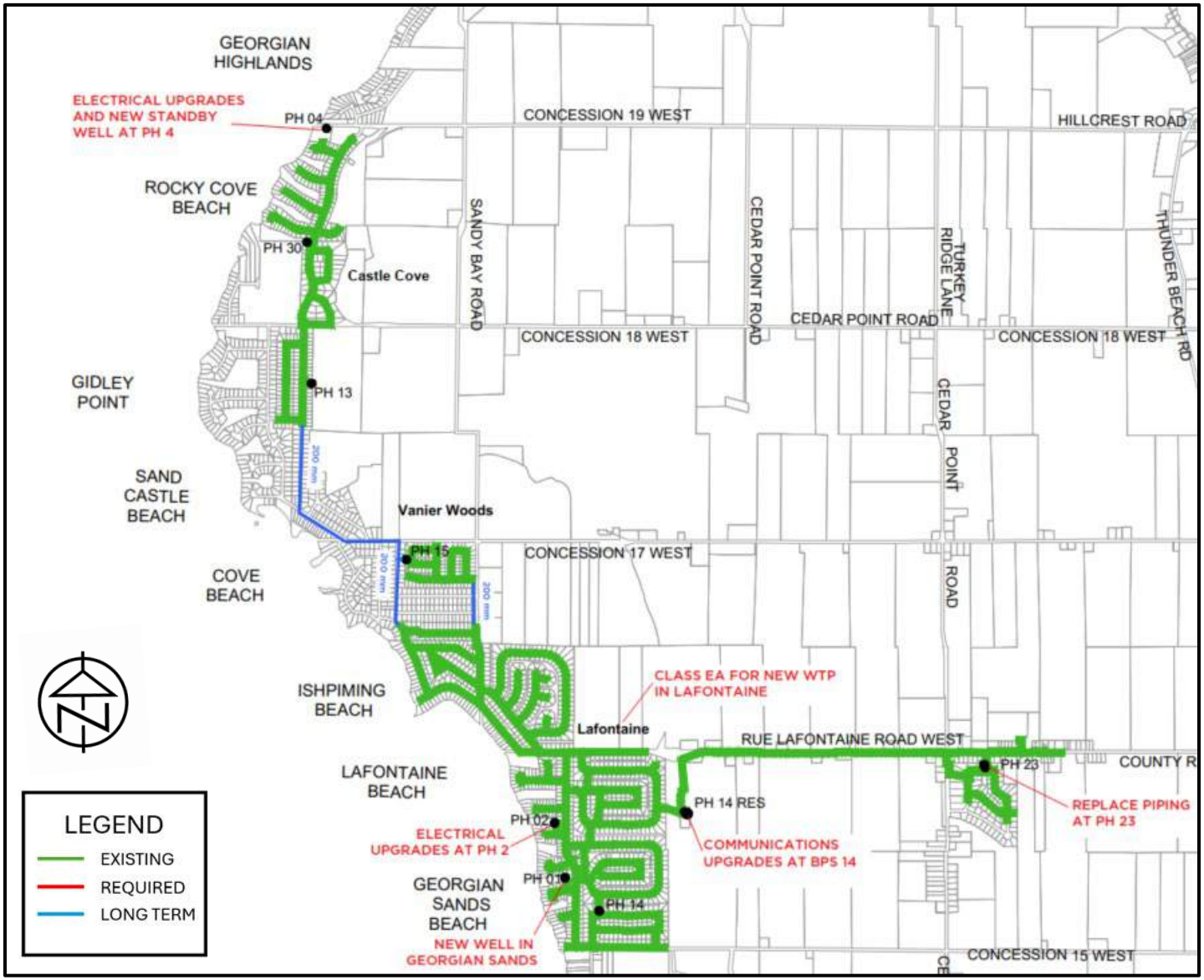
The main concern with Alternatives 1 and 3 is the unavailability of good quality groundwater over the long term. With Alternative 1, connecting the three distribution systems and hooking up the lots in between them to municipal water adds more revenue but it also increases the demand for groundwater. System redundancy is improved but the number of facilities to operate and maintain is not reduced.

Continuing to upgrade or replace the individual pumphouses and wells (Alternative 3) is a simpler, status quo approach. However, it has high ongoing costs and does not adequately address the need to manage the elevated groundwater nitrate levels.

Alternative 2 is expected to have high initial capital costs but provides a good quality and quantity water supply for the long term. Multiple well supply and treatment facilities with high nitrates would be phased out and replaced with one better water quality source. The available water supply is unlimited, providing the Township with the opportunity to connect all unserviced lots within the area and to extend municipal water servicing to adjacent areas if/when needed.

Alternative 2 is preferred, however, it will be a long-term project. Improvements in the Castle Cove and Lafontaine DWS are still needed in the short term to maintain water servicing until a new WTP and intake to Georgian Bay are built. Additional groundwater supply wells will need to be developed in Castle Cove and in the Lafontaine lower pressure zone. Pumphouse upgrades in Lafontaine and Castle Cove, as listed in Alternative 1, will need to be completed. Storage and high lift pump expansions to meet MECP guidelines for fire protection would be considered after the design concept for the WTP has been developed.

Figure 2: Castle Cove, Lafontaine and Vanier Woods Recommended Servicing



5.2.3 Recommended Servicing

The recommended water servicing solutions for Castle Cove, Lafontaine, and Vanier Woods are shown in Figure 2 and summarized as follows:

Short-term Upgrades

- Essential improvements to the DWS to address existing deficiencies and shortfalls as needed in the next 5 to 10 years:
  - At the Lafontaine DWS, upgrade PH 2 electrical panels, PH 23 piping, and BPS 14 communication system.
  - At the Lafontaine DWS (lower pressure zone), add a 434 L/min well to address the projected shortfall.
  - At the Castle Cove DWS, upgrade the PH 4 electrical power supply equipment.
  - At Castle Cove PH 4, construct a 668 L/min standby well.
- Conduct a Schedule C Class EA for a new WTP with intake into Georgian Bay.

Long Term Water Servicing:

- Construct an approximately 3,455 m^3/day (MDD) WTP and intake to supply Lafontaine, Castle Cove and Vanier Woods.
- Extend 200 mm diameter transmission mains to connect the three DWS.
- Abandon the three groundwater DWS.
- Upgrade BPS 14 as needed to supply directly to the upper pressure zone distribution system.

6 Georgian Bay Estates & Sawlog Bay

The Georgian Bay Estates and Sawlog Bay DWS are adjacent systems along the Georgian Bay shoreline in the northeast of the Township. As described in the following sections, solutions were considered to address the needs of the two water systems together to identify potential improvements in system redundancy and reliability.

6.1 NEEDS AND ISSUES

Replacement wells and new watermains are needed in the Georgian Bay Estates DWS. The Sawlog Bay DWS needs pumphouse upgrades. The needs are summarized in Table 4. Further details are presented in Appendix A.

Table 4: Georgian Bay Estates & Sawlog Bay DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	CAPACITY NEEDS
Georgian Bay Estates	Replacement of three deteriorated wells (firm capacity: 800 m^3/day). Additional watermains for looping.	PH 19: Standby well for MDD (276 m^3/day). Limited groundwater availability.
Sawlog Bay	PH 16: Replacement of corroded electrical panels. Control valve upgrades.	PH 16: Treatment system upgrades for redundancy and operational flexibility for maintenance and repairs.

6.2 ALTERNATIVES AND RECOMMENDATIONS

6.2.1 Description of Alternative Solutions

Three alternatives were considered for Georgian Bay Estates and Sawlog Bay to address the poor condition of the wells, pumphouses, and watermains. The alternatives are listed below.

- Alternative 4: Connect the two DWS and continue with groundwater supply, with required upgrades.
- Alternative 5: Maintain the two individual DWS, with required upgrades.
- Alternative 6: Connect the two DWS and supply from a new surface WTP, with required upgrades.

Alternative 4

Alternative 4 would involve replacing the Georgian Bay Estates wells and constructing a 500 m long transmission main to connect the Georgian Bay Estates and Sawlog Bay water distribution systems. This alternative would provide the redundancy needed to allow PH 16 to be taken offline for upgrades or maintenance while supply is maintained from PH 19. Watermain loops would be added to the distribution system in Georgian Bay Estates where the Township owns land, providing an opportunity to improve the distribution system's resiliency. The necessary process and electrical equipment upgrades at the Sawlog Bay PH 16 would be completed.

Alternative 5

Alternative 5 would maintain the status quo with two individual DWS. The Georgian Bay Estates wells would be replaced, and PH 16 would receive process and electrical upgrades. Watermain loops would be added to the Georgian Bay Estates distribution system as in Alternative 4. This alternative does not address the lack of system redundancy to allow repairs at the Sawlog Bay DWS. Therefore, a temporary water supply solution would be needed when the PH 16 reservoir needs to be inspected and cleaned.

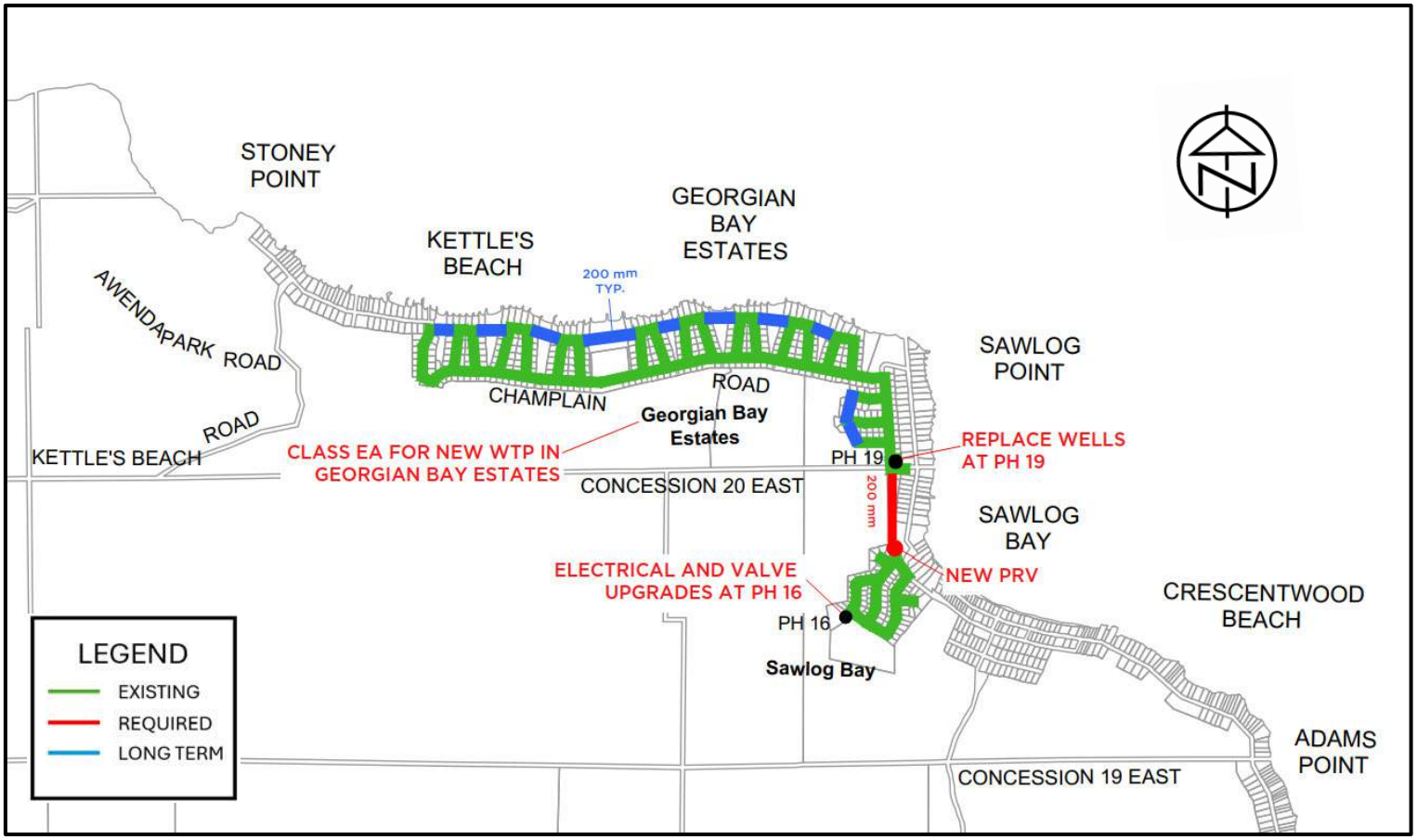
Alternative 6

Alternative 6 would involve establishing a surface water supply to the area. This would require building a WTP and a water intake into Georgian Bay. A 500 m long transmission main would be constructed to connect the two distribution systems and watermain loops would be added to the Georgian Bay Estates distribution system, as in Alternative 4. A Schedule C Class EA to identify the preferred location and design concept for the WTP and intake would be undertaken as the first step of the planning, design, and approvals process. Once the surface water supply is brought online, the two groundwater supply and treatment systems would be abandoned. Consideration would be given to maintaining the reservoir and high lift pumps at PH 16 and PH 19.

6.2.2 Assessment of Alternative Solutions

For this area of the Township, the main concern is the limited quantity of groundwater. It may be possible to construct new wells with a higher yield than the existing ones, but it is not likely to be sufficient to meet the projected future needs. Therefore, Alternatives 4 and 5 do not meet the needs and the preferred solution for the long term is to construct a new WTP and water intake from Georgian Bay to replace the two groundwater systems, and to connect the two distribution systems (Alternative 6).

Figure 3: Georgian Bay Estates and Sawlog Bay Recommended Servicing



This solution provides a reliable water supply for the existing service area and enables expansion to additional users. In particular, the area east of the Sawlog Bay system has small properties that could benefit from a municipal supply, if desired. Further study of need and interest will be required, in addition to a Schedule C Class EA for the WTP and intake.

In the short term, essential infrastructure works need to be completed, including replacement of the wells in Georgian Bay Estates. A watermain connection between the two distribution systems is recommended to facilitate the pumphouse upgrades and improve operational flexibility for the two systems.

6.2.3 Recommended Servicing

The recommended water servicing solutions for Georgian Bay Estates and Sawlog Bay are shown in Figure 3 and summarized as follows:

Short-term Upgrades

- Essential improvements to the DWS to address existing deficiencies and shortfalls as needed in the next 5 to 10 years:
  - Replace wells at Georgian Bay Estates to provide a firm capacity of 800 m^3/day to meet the projected MDD.
  - Construct a 200 mm diameter watermain (500 m) to connect the two distribution systems.
  - At the Sawlog Bay DWS, complete essential process and electrical upgrades at PH 16.
- Conduct a Schedule C Class EA and other studies for a new WTP with intake into Georgian Bay.

Long Term Water Servicing

- Construct intake and new approximately 956 m^3/day WTP (MDD).
- Add watermain loops in Georgian Bay Estates where feasible.
- Abandon the two groundwater supply and treatment systems.
- Maintain reservoir and high lift pumping systems at PH 16 and PH 19 as needed.

7 Bluewater, Rayko & Woodland Beach

The adjacent Bluewater, Rayko, and Woodland Beach DWS are located along the Georgian Bay shoreline in the southwest of the Township. These three DWS were considered together to identify solutions to address their needs and identify improvements in system efficiency and reliability.

7.1 NEEDS AND ISSUES

As summarized in Table 5, with further details in Appendix A, the Bluewater and Rayko DWS both need additional wells. Emergency power upgrades and additional fire storage capacity are needed at the Bluewater DWS. There are no issues with the Woodland Beach DWS.

Table 5: Bluewater, Rayko & Woodland Beach DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	CAPACITY NEEDS
Bluewater	PH 8: Emergency generator needed.	PH 18: Need additional 263 m^3 water storage to improve fire protection. PH 8: Standby well for future MDD (250 L/min)
Rayko	None	Insufficient well capacity to reliably meet high water consumption. PH 6: Standby well for PHD (90 L/min)
Woodland Beach	None	None

7.2 ALTERNATIVES AND RECOMMENDATIONS

7.2.1 Description of Alternative Solutions

To address the identified water treatment and servicing needs in Bluewater and Rayko, three alternative solutions were considered, as listed below.

- Alternative 7: Upgrade Bluewater PH 8 and PH 18 and increase Rayko groundwater supply.
- Alternative 8: Upgrade Bluewater PH 8 and PH 18 and replace the Rayko DWS with private wells.
- Alternative 9: Connect the three DWS and add groundwater supply and storage in Bluewater.

Alternative 7

Alternative 7 would consist of maintaining and upgrading the Bluewater DWS and the Rayko DWS. For the Bluewater DWS, standby power upgrades would be completed at PH 8, and the storage tank would be expanded at PH 18 to improve fire protection (if required by the fire department). In Rayko, a new well would be constructed at PH 8 to provide redundant supply capacity, and water meters would be installed to assist in addressing high water consumption.

Alternative 8

Alternative 8 would involve abandoning the Rayko DWS and installing private wells on each property. Each lot would need to be large enough to accommodate a well such that it meets the OBC minimum separation distance from the septic systems. In Bluewater, standby power upgrades, storage expansion, and new well would be completed, as described in Alternative 7.

Alternative 9

With Alternative 9, the Bluewater, Rayko and Woodland Beach DWS would be connected to provide redundancy and address the supply shortfall in Rayko. Approximately 4 km of water transmission mains would be extended from Bluewater to Rayko and from Bluewater to Woodland Beach. In Bluewater, the standby power upgrades at PH 8 and storage expansion at PH 18 would be completed as in Alternatives 7 and 8.

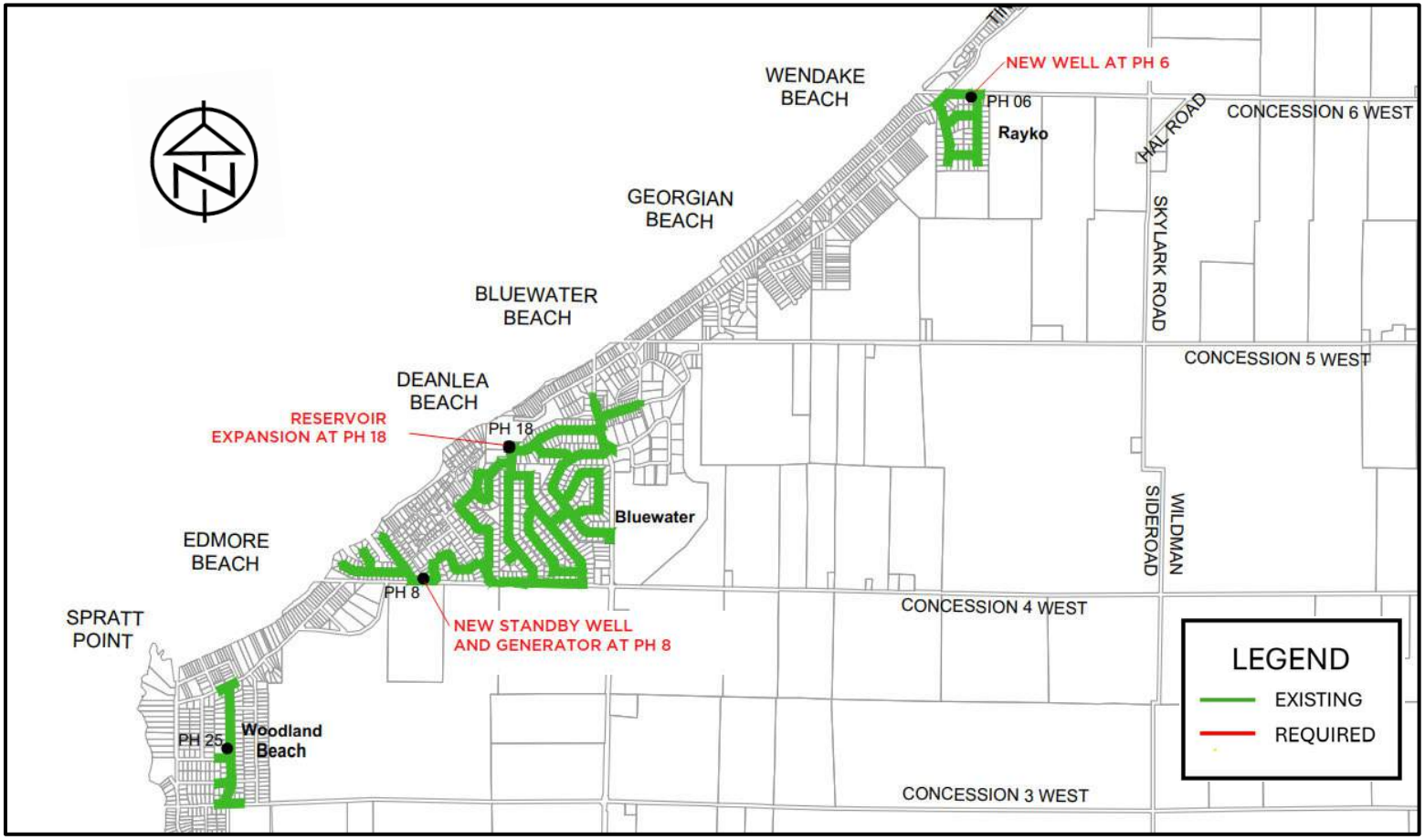
7.2.2 Assessment of Alternative Solutions

Alternative 9, Connecting the three DWS, would address the needs and meet the objectives of improving the reliability and resiliency of the DWS. However, a significant length of new watermain would be required which may not be desired. The need to extend municipal water servicing in this area has not been identified, nor have residents expressed a desire to be connected. The feasibility of this alternative also depends on whether there is sufficient groundwater to service all the properties between the three DWS.

Abandoning the Rayko water system (Alternative 8) would result in one less DWS to operate and maintain. However, the feasibility of finding an acceptable location for a private well on each property, given the constraints placed by existing buildings and septic systems, is considered limited.

Upgrading the Bluewater DWS and Rayko DWS (Alternative 7) is therefore considered the preferred solution because it can address the supply and redundancy needs. In the future, if sufficient groundwater is confirmed, watermains could be added to connect the three DWS.

Figure 4: Bluewater and Rayko Recommended Servicing



7.2.3 Recommended Servicing

The recommended water servicing solutions for Bluewater, Rayko, and Woodland Beach are shown in Figure 4 and summarized as follows:

Short-term Upgrades

- Essential improvements to the DWS to address existing deficiencies and shortfalls as needed in the next 5 to 10 years:
  - Expand the Bluewater PH 18 water storage tank by 263 m^3 if required by the fire department.
  - At Bluewater PH 8, construct a 250 L/min standby well
  - At Bluewater PH 8, add a standby generator.
  - At Rayko PH 6, construct a 90 L/min well.
  - In Rayko DWS, install water meters.

8 Perkinsfield, Lefaive, and Balm Beach

Water treatment and servicing solutions were considered together for the communities of Perkinsfield, Lefaive, and Balm Beach because these areas are close geographically. The Perkinsfield DWS is east of Balm Beach, which is an unserviced area on the Georgian Bay shoreline. The Lefaive DWS serves an area at the north end of Balm Beach.

8.1 NEEDS AND ISSUES

8.1.1 Perkinsfield DWS and Lefaive DWS

As summarized in Table 6 and detailed in Appendix A, the Perkinsfield DWS needs upgrades at both pumphouses and there is a shortfall in the groundwater supply's firm capacity. Elevated THMs have been measured at PH 26 in Perkinsfield. There are no major issues at the Lefaive DWS.

Table 6: Perkinsfield DWS & Lefaive DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Perkinsfield	Undersized watermains replacement. PH 22: Emergency power supply; corroded piping replacement & air relief valves. PH 26: Corroded piping replacement and pump lifting system	PH 26 reservoir has elevated THMs	PH 26: Standby well to increase firm capacity by 178 m^3/day for MDD
Lefaive	None	None	None

8.1.2 Balm Beach

Balm Beach has a high-density of homes and cottages that are serviced by private wells and septic systems. Some Balm Beach property owners have indicated they would prefer to be connected to a municipal water system. Due to the typically small lot sizes and the associated proximity of the private wells to the septic systems, there is a concern that the septic systems could negatively impact the quality of the groundwater used by residents for drinking purposes.

For this reason, the water servicing needs of the Balm Beach community were considered in conjunction with the needs of the Perkinsfield and Lefaive areas.

Although not the subject of this study, sanitary servicing in Balm Beach will need to be considered and assessed when reviewing options for improving the drinking water supply. Any increase in water use will increase the need for wastewater disposal.

8.2 ALTERNATIVES AND RECOMMENDATIONS

8.2.1 Description of Alternative Solutions

To address the identified water treatment and servicing needs in Perkinsfield and Balm Beach, the following alternative solutions were considered:

- Alternative 10: Upgrade the Perkinsfield DWS and conduct a Class EA study for Balm Beach servicing.
- Alternative 11: Increase the Perkinsfield groundwater supply and extend the Perkinsfield DWS to also serve Balm Beach.
- Alternative 12: Construct a new surface WTP to service Balm Beach, Lefaive, and Perkinsfield.

Alternative 10

Alternative 10 addresses the drinking water needs of the Perkinsfield DWS separately from the needs of Balm Beach. The pumphouse and watermain upgrades required in Perkinsfield would be completed and additional standby well supply would be provided, either by connecting well 26-4 or constructing a new well.

For Balm Beach, a Municipal Class EA study (Schedule C) will need to be completed to develop the water and sanitary servicing needs and alternatives, and to identify the preferred approaches and design concepts. A review of the MECP's database of water well records indicates that in the Balm Beach area, a water aquifer suitable to support a municipal groundwater supply system is not present. Accordingly, a surface water source (intake into Georgian Bay) is expected to be required to establish a Balm Beach municipal water supply.

Alternative 11

Alternative 11 involves extending the Perkinsfield water distribution system to also serve the Balm Beach area. This alternative would require additional groundwater wells. The extent of Balm Beach that could be serviced will depend on the availability of groundwater, which is limited in this area, as all the wells have been low yield wells.

Alternative 12

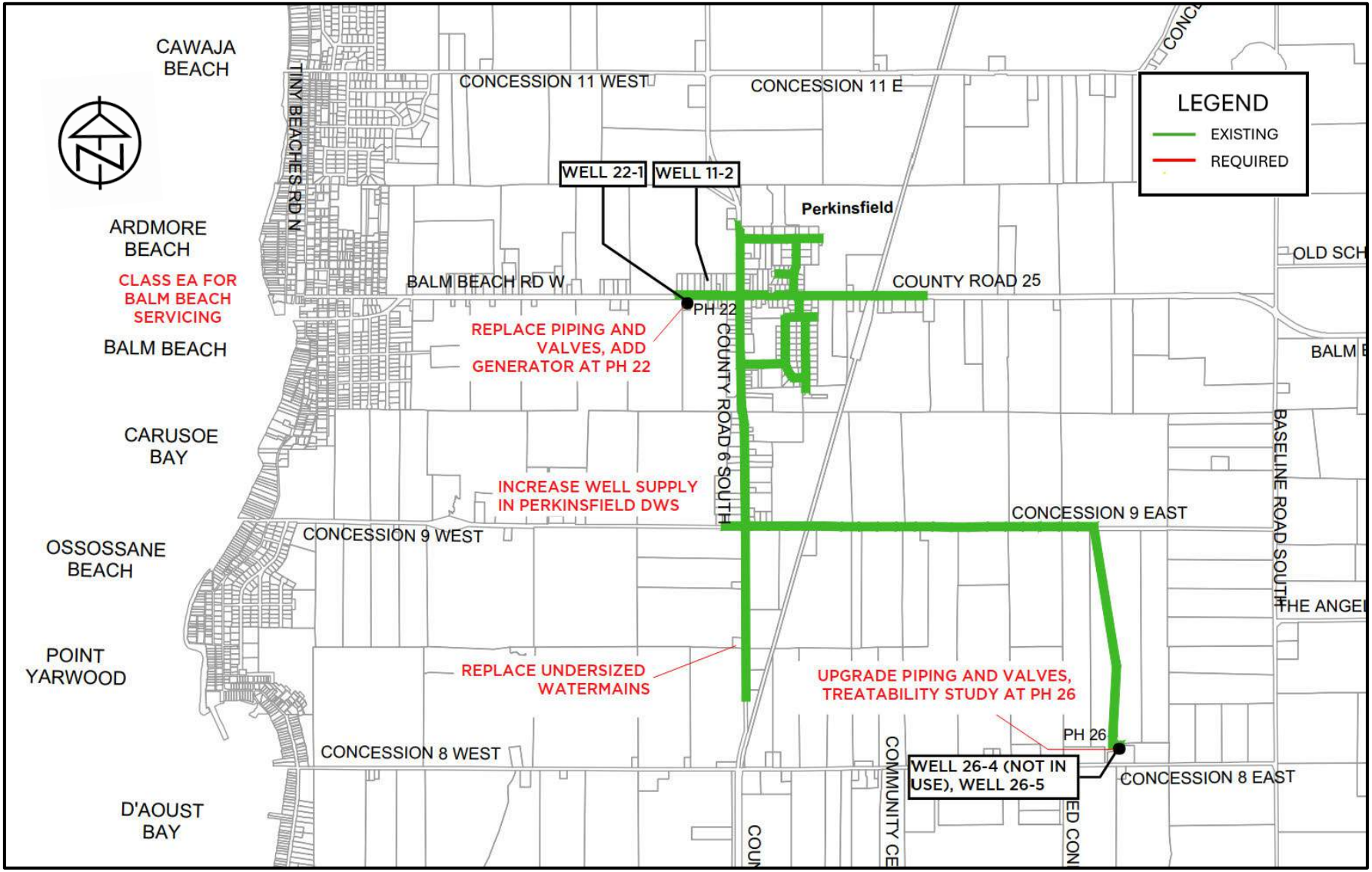
Alternative 12 involves replacing the groundwater supplies with a surface water supply to service the area. This alternative would involve building a WTP and a water intake into Georgian Bay and constructing watermains in Balm Beach and a transmission main to connect to the Perkinsfield water distribution system. A Municipal Class EA (Schedule C) would need to be conducted first to identify the preferred location and design concept for the WTP, and other studies would be completed to resolve how to address the implications on wastewater servicing. Ultimately, the existing groundwater supply and treatment systems serving Perkinsfield and Lefaive would be abandoned. Consideration would be given to maintaining the reservoir and high lift pumps at Perkinsfield PH 22 and PH 26.

8.2.2 Assessment of Alternative Solutions

Considering there is insufficient groundwater available in Perkinsfield and Balm Beach to extend the Perkinsfield DWS to Balm Beach (Alternative 11) or to establish a new groundwater-based system in Balm Beach, a lake-based supply will need to be considered to service Balm Beach and Perkinsfield (Alternative 12). A lake-based WTP is a long-term project for which further studies are needed to comprehensively assess the water and sanitary servicing needs and options and resolve a servicing solution.

As the Perkinsfield DWS needs upgrades in the short term, a phased approach to servicing the area is preferred, where essential upgrades are conducted at the Perkinsfield DWS while a Class EA is completed to resolve servicing in Balm Beach (Alternative 10). This servicing study will assist in resolving the extent of water service for this area of the shoreline. The Balm Beach water servicing solution could be extended to Perkinsfield and Lefaive.

Figure 5: Perkinsfield, Lefaive and Balm Beach Recommended Servicing



8.2.3 Recommended Servicing

The recommended water servicing solutions for Perkinsfield, Lefaive, and Balm Beach are illustrated in Figure 5, and summarized as follows:

Short-term Upgrades

- Essential improvements needed at the Perkinsfield DWS in the next 5-10 years:
  - Increase the well supply in Perkinsfield DWS by 178 m^3/day (connect well 26-4 or add well at PH 22 or PH 26).
  - Add standby generator at PH 22.
  - Upgrade piping and valves at PH 22 and PH 26.
  - Replace undersized watermains in Perkinsfield.
- Conduct a water treatability study at PH 26 to identify a solution to reduce THMs.
- Conduct a Class EA (Schedule C) study to determine the best approach to provide water and sanitary servicing to Balm Beach.

Long Term Water Servicing

- Construct intake and new WTP (capacity to be determined during Class EA).
- Abandon two groundwater supply and treatment systems.
- Maintain reservoir and high lift pumping systems at PH 22 and PH 26 as needed.

9 Cook's Lake

The Cook's Lake DWS is separated from the other Township water systems by a significant distance. It was therefore considered on its own to identify solutions that address its needs.

9.1 NEEDS AND ISSUES

The needs and issues for the Cook's Lake DWS are summarized in Table 7. Further details are presented in Appendix A.

Table 7: Cook's Lake DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Cook's Lake	PH 12: Connect existing reservoir and add high lift pumps	Unserviced homes that use lake water as drinking water source	High water consumption PH 12: Replacement well (310 L/min) for future demand

9.2 ALTERNATIVES AND RECOMMENDATIONS

9.2.1 Description of Alternative Solutions

The water treatment and servicing solutions for the Cook's Lake DWS need to address the pumphouse and well supply capacity required to meet the high water demand from the existing service area. There is also a potential need to extend municipal water to unserviced homes on the shore of Farlain Lake. To address these needs, the following alternative solutions were considered:

- Alternative 13: Upgrade DWS for existing users.
- Alternative 14: Upgrade and extend the DWS to homes on private water supplies.

Alternative 13

Alternative 13 consists of connecting the existing water reservoir and adding high lift pumps at PH 12. Well 12-2 would be replaced with a higher capacity well to address the future shortfall in supply capacity.

Alternative 14

Alternative 14 would involve extending the Cook's Lake DWS service area to homes on the opposite side of Farlain Lake. This would require the construction of watermains and an

expansion of the groundwater supply, treatment, storage and pumping system. The need and desire of Farlain Lake residents for municipal water service is currently unknown.

9.2.2 Assessment of Alternative Solutions

Extending municipal water service to homes on the opposite side of Farlain Lake would provide a safe drinking water source for homeowners currently using lake water. However, further study is needed to determine whether there is interest and need for municipal water, and the associated extent, feasibility and cost of the project. Alternative 14 is therefore considered premature until further studies are completed.

Upgrades to the Cook's Lake DWS need to be completed in the short term to address the groundwater supply firm capacity shortfall, redundancy and equipment needs to service existing users. A project is underway to connect the reservoir and add high lift pumps. Water meters were installed in 2024. Therefore, Alternative 13 is the preferred solution for the Fairlain Lake area and the Cook's Lake DWS.

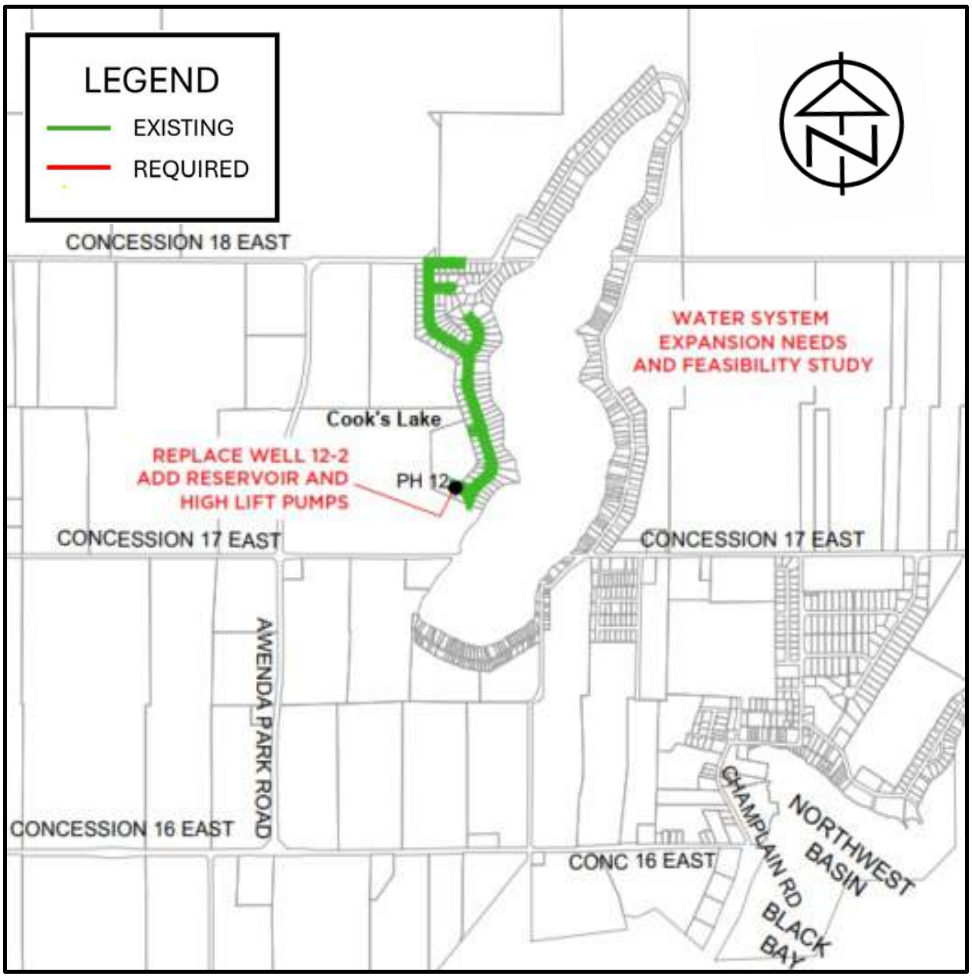
9.2.3 Recommended Servicing

The recommended water servicing solutions for the Cook's Lake DWS are shown in Figure 6 and summarized as follows:

Short-term Upgrades

- Essential improvements needed in the next 5-10 years:
  - Connect the reservoir and add high lift pumps (underway).
  - Replace Well 12-2 with a higher capacity well (310 L/min).
  - Conduct testing of Well 12-1 and obtain increase in permitted capacity to 310 L/min.
  - Conduct a study of the drinking water need and feasibility of extending the distribution system to unserviced homes around Fairlain Lake.

Figure 6: Cook's Lake Recommended Servicing



10 Pennorth

The Pennorth DWS on the Georgian Bay shoreline is also separated from the other Township DWS by a significant distance. This water system was therefore considered individually to identify solutions to address its needs.

10.1 NEEDS AND ISSUES

Table 8 summarizes the needs and issues for the Pennorth DWS. Further details are presented in Appendix A.

Table 8: Pennorth DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Pennorth	PH 7: Removal of asbestos in PH and piping upgrades for operational flexibility	None	Adjacent Wahnekewening Dr. is not serviced and private wells are located on Township property

10.2 ALTERNATIVES AND RECOMMENDATIONS

10.2.1 Description of Alternative Solutions

Two water treatment and servicing solutions were developed for the Pennorth DWS to address the PH 7 needs for the existing service area.

Water and sanitary servicing for Wahnekewening Drive, which is immediately south of the Pennorth DWS service area, will require a separate study to identify feasible servicing solutions.

The following alternative solutions were considered:

- Alternative 15: Upgrade the Pennorth DWS.
- Alternative 16: Replace the Pennorth DWS with private wells.

Alternative 15

Alternative 15 consists of removing the asbestos in the walls and ceiling of PH 7 and upgrading and modifying the piping to improve operational flexibility. The project will involve taking the pumphouse offline for an extended period. A temporary water supply will need to be provided for residents while the work is completed.

Alternative 16

Alternative 16 consists of decommissioning and abandoning the Pennorth DWS. Municipal water supply would no longer be available. A privately-owned well would be constructed on each property, which would need to be large enough to accommodate a well at an adequate separation distance from the existing septic system.

10.2.2 Assessment of Alternative Solutions

Abandoning the Pennorth DWS (Alternative 16) would result in one less DWS to operate and maintain. However, the feasibility of finding an acceptable location for a private well on each property given the constraints placed by existing buildings and septic systems, is considered limited.

Alternative 15 is the preferred solution. Building and equipment upgrades in PH 7 need to be completed in the short term.

10.2.3 Recommended Servicing

The recommended water servicing solutions for the Pennorth DWS, as shown in Figure 7, are:

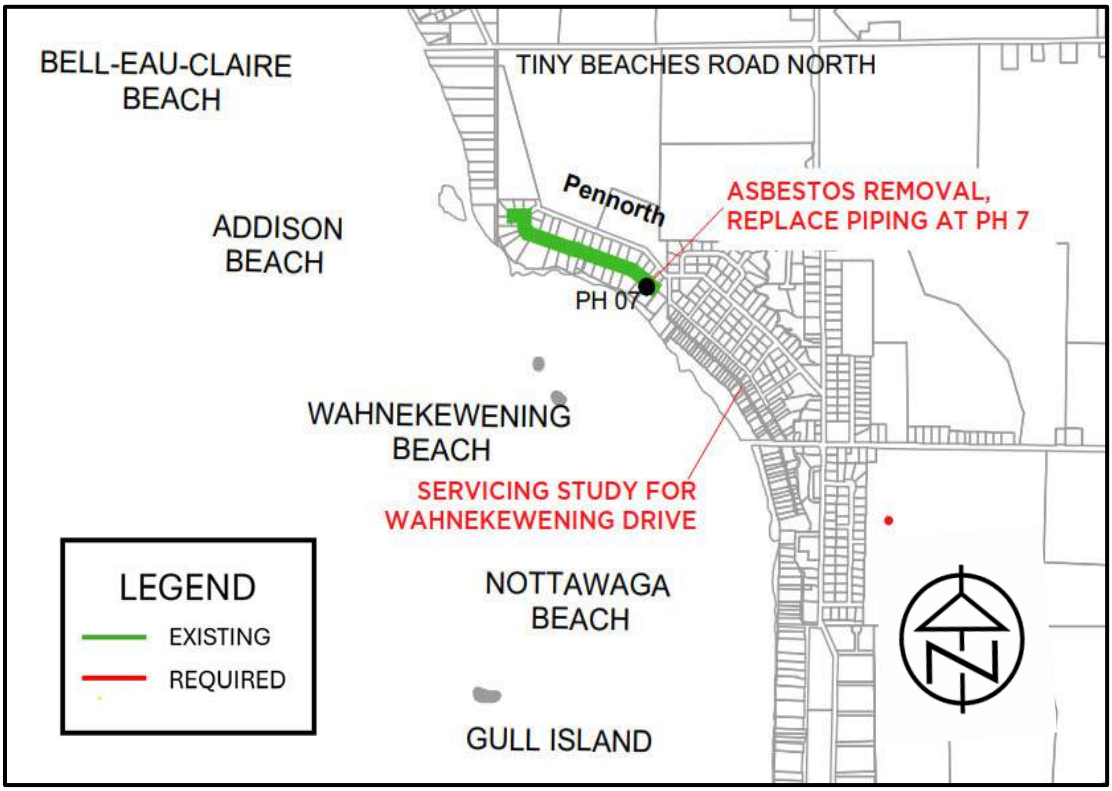
Short-term Upgrades

- Essential improvements needed in the next 5-10 years:
  - Upgrade/modify PH 7 piping to provide more operational flexibility.
  - Remove asbestos from the pumphouse walls and ceiling.

Long Term Water Servicing

- Conduct servicing study to determine the best approach to provide water and sanitary servicing to Wahnekewening Drive and remove private wells from Township property.

Figure 7: Pennorth Recommended Servicing



11 Tee Pee Point

The Tee Pee Point DWS, located on the east side of the Township on the shore of Penetanguishene Bay, was considered on its own as it is distant from other Township water systems.

11.1 NEEDS AND ISSUES

The needs and issues for the Tee Pee Point DWS are summarized in Table 9. Further details are presented in Appendix A.

Table 9: Tee Pee Point DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Tee Pee Point	PH 9: Replacement of piping and corroded electrical panels, and upgrade of well pump control system	None	PH 9: Additional 200 L/min well and treatment capacity to meet current PHD

11.2 ALTERNATIVES AND RECOMMENDATIONS

11.2.1 Description of Alternative Solutions

To address the identified water supply and equipment needs at the Tee Pee Point DWS, the following two alternative solutions were considered:

- Alternative 17: Increase well supply and expand PH 9.
- Alternative 18: Increase well supply and replace PH9.

Alternative 17

Alternative 17 involves the construction of a new supply well(s), PH expansion and upgrades to increase the capacity of the treatment systems, pressure tanks, piping and valves, and electrical systems, address the issues with the well pump's automatic controls, and replace piping and corroded panels.

Alternative 18

Alternative 18 is similar to Alternative 17 except that instead of expanding and upgrading the existing pumphouse, it would be replaced with a new pumphouse on a new site. The new well(s) would be constructed at the new site.

Assessment of Alternative Solutions

As there is limited space on the existing site for expansion of the pumphouse and construction of a new well, the preferred solution is to build a replacement pumphouse and additional well on a new site (Alternative 18). This approach would provide reliable infrastructure that would not need repairs or upgrades for many years, albeit at a higher capital cost than Alternative 17.

11.2.2 Recommended Servicing

The recommended water servicing solutions for the Tee Pee Point DWS, as shown in Figure 8, are:

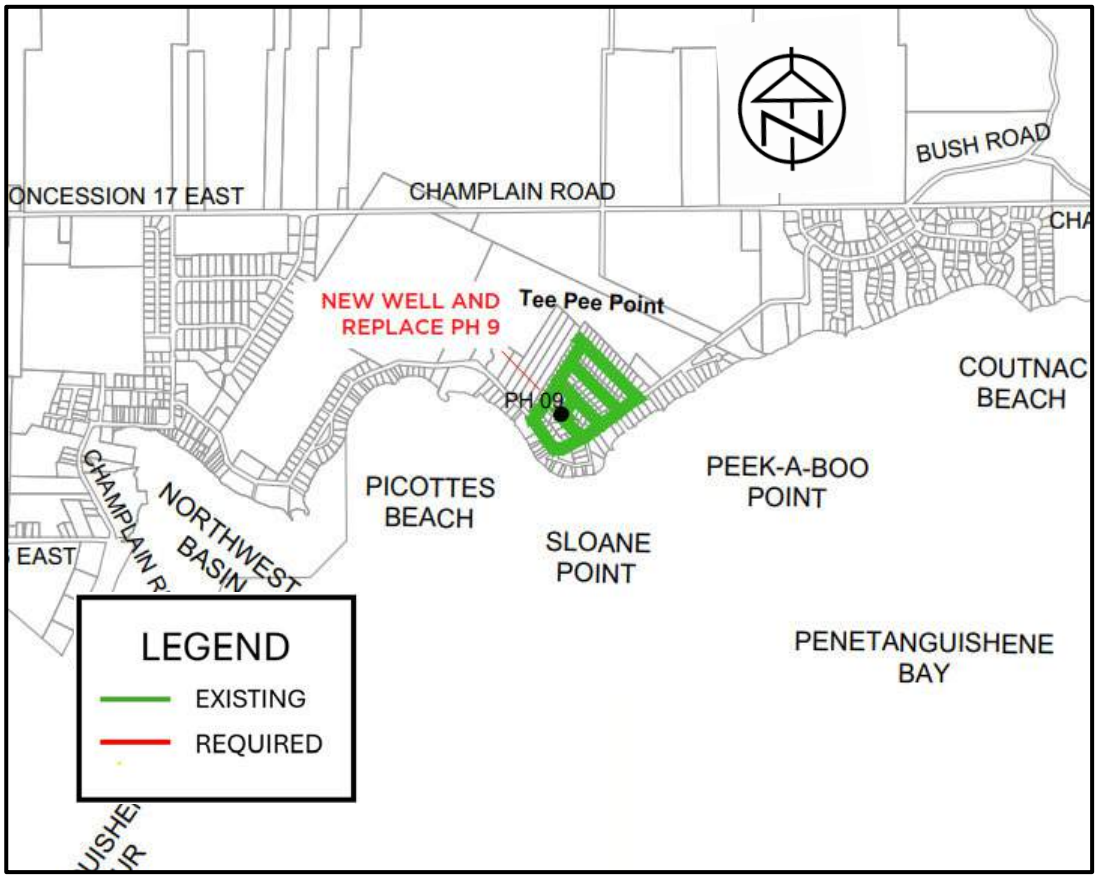
Short-term

- Conduct a study to identify the preferred site for a replacement pumphouse and new well(s).

Longer-term

- Construct a 200 L/min well.
- Construct a new pumphouse and connect the existing wells to the new pumphouse.

Figure 8: Tee Pee Point Recommended Servicing



12 Whippoorwill

The Whippoorwill DWS was considered on its own, as it is not adjacent to any other Township water systems, to identify solutions to address its needs.

12.1 NEEDS AND ISSUES

The needs and issues for the Whippoorwill DWS are summarized in Table 10. Further details are presented in Appendix A.

Table 10: Whippoorwill DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Whippoorwill	None	None	High water consumption. PH 21: Limited water storage and pumping capacity for fire protection

12.2 ALTERNATIVES AND RECOMMENDATIONS

12.2.1 Description of Alternative Solutions

To address the high water consumption and the water storage and pumping capacity limitations for fire protection, the following two alternative solutions were considered:

- Alternative 19: Add to or expand the water storage tank and upsize the high lift pumps.
- Alternative 20: Install water meters and keep PH 21 as is.

Alternative 19

Alternative 19 would consist of expanding or building a new reservoir to increase the storage volume by approximately 250 m^3. This would provide additional equalization and fire protection storage. The high lift pumps would be replaced with higher capacity pumps capable of discharging the MDD and fire flow.

Alternative 20

Alternative 20 would involve installing water meters at all existing homes to assist in reducing the water consumption. The pumphouse storage and pumps would not be modified

12.2.2 Assessment of Alternative Solutions

The Township's priority for the Whippoorwill DWS is to first address the high water consumption by installing water meters (completed in 2024) and monitoring the water usage. The extent of required upgrades will be a function of the water usage.

Expansion of the reservoir and upsizing the high lift pumps (Alternative 19) would present a high cost for a DWS serving a small number of users. Water supply requirements for fire protection should be reviewed with the Fire Department to confirm the appropriate level of service and viable options.

Therefore, Alternative 20 is the preferred solution.

12.2.3 Recommended Servicing

The recommended water servicing solutions for the Whippoorwill DWS are:

Short-term

- Discuss level of fire protection with Fire Department.
- Review water consumption following meter installation to reassess need for expanding storage and pumping capacity.

13 Wyevale

The Wyevale DWS was considered on its own as it is not adjacent to other Township water systems.

13.1 NEEDS AND ISSUES

The needs and issues for the Wyevale DWS are summarized in Table 11. Further details are presented in Appendix A.

Table 11: Wyevale DWS Needs Summary

DWS	INFRASTRUCTURE NEEDS	WATER QUALITY ISSUES	CAPACITY NEEDS
Wyevale	None	None	Limited water storage and pumping capacity for fire protection

13.2 ALTERNATIVES AND RECOMMENDATIONS

13.2.1 Description of Alternative Solutions

To address the storage and pumping capacity needed for fire protection in Wyevale, the following three alternative solutions were considered:

- Alternative 21: Expand the Wyevale reservoir and booster pumping station 24.
- Alternative 22: Replace the Wyevale reservoir and booster pumping station 24.
- Alternative 23: Add storage and high lift pumps at PH 29.

Alternative 21

Alternative 21 involves expanding the Wyevale in-ground reservoir by approximately 360 m^3 on the existing site. The high lift pumps would be replaced with larger capacity pumps capable of discharging the fire flow under MDD conditions. A standby generator and automatic power transfer switch would be included in the project to improve the level of service.

Alternative 22

For Alternative 22, the Wyevale reservoir and booster pumping station 24 would be replaced with a new facility sized for a higher level of fire protection, with a standby generator, on a new site.

Alternative 23

Alternative 23 would involve constructing an additional reservoir at PH 29 and expanding PH 29 to add high lift pumps.

13.2.2 Assessment of Alternative Solutions

Replacing the reservoir and booster pumping station 24 (Alternative 22) would provide a reliable solution with a long asset life. However, this alternative has a high project cost.

Adding a reservoir and high lift pumps at PH 29 (Alternative 23) would distribute the storage capacity within the distribution system, which is preferred in a large water distribution network. However, this is not of critical importance for a water system the size of Wyevale, where the distance from any home to the water storage tank is relatively small.

Expanding the existing reservoir and booster pumping station 24 (Alternative 21) would address the need for improved fire protection at a lower project cost. There is adequate space within the existing BPS 24 to install larger high lift pumps, and sufficient space on the site to expand the in-ground reservoir. As Alternative 21 is feasible and has a lower cost, it is considered the preferred solution.

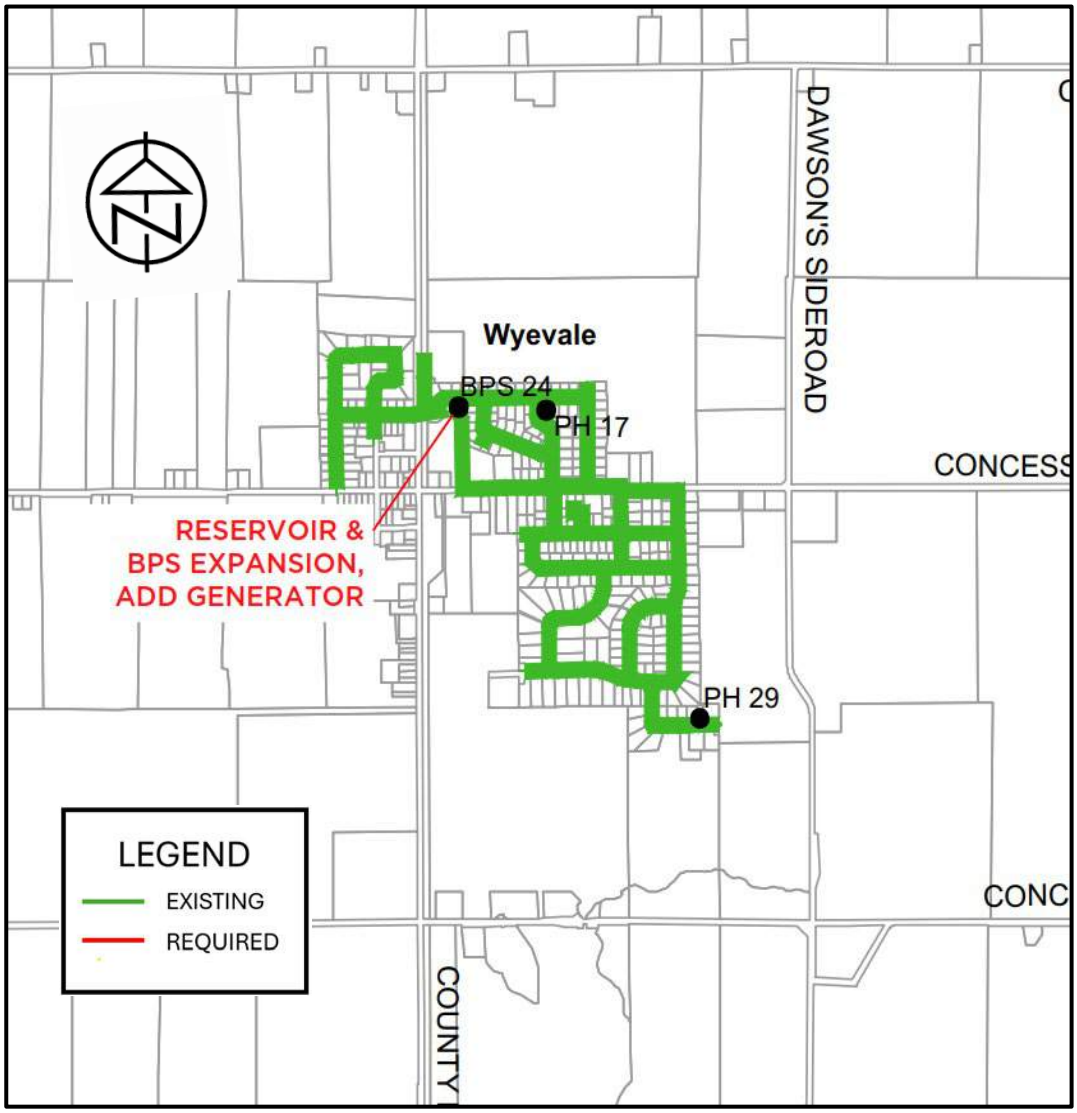
13.2.3 Recommended Servicing

The recommended solutions for improving fire protection in the Wyevale DWS, as shown in Figure 9, are:

Short-term Upgrades

- Expand the Wyevale reservoir by 358 m^3.
- Replace the high lift pumps at BPS 24 with larger capacity pumps to provide a firm capacity of 48 L/s.
- Add a standby generator and ATS at BPS 24.

Figure 9: Wyevale Recommended Servicing



14 Consultation

14.1 NOTICE OF STUDY COMMENCEMENT

The Notice of Study Commencement was mailed or emailed on July 12, 2023, to all stakeholders on the initial mailing list, including First Nations and indigenous organizations. The Notice of Study Commencement and the initial mailing list are attached in Appendix B.

The Notice was also posted on the Midland Today on-line newspaper on July 20, 2023, and published in the Midland Mirror newspaper on July 18, 2023.

The Township created a project specific webpage on which it posted the Notice and can receive comments.

14.2 PUBLIC INFORMATION CENTRE NO. 1

The public and stakeholders, agencies, and interested parties on the updated mailing list were invited to a Phase 1 Public Information Centre (PIC) to be informed of the water infrastructure needs and to obtain their input and comments.

The Notice of Public Information Centre was mailed and emailed on August 14, 2023. It was also posted on the Township's Water Master Plan webpage and on the Midland Today on-line newspaper. The Notice was published in the Midland Mirror newspaper on August 17 and 24, 2023. The Notice of PIC No. 1 is attached in Appendix B.

The PIC was held in the Township Council Chambers on August 28, 2023. The PIC consisted of a presentation by Tatham, followed by a question-and-answer period. The presentation and question-and-answer period were recorded and simultaneously broadcast on the Township's YouTube channel. 13 people attended in person and several more attended online. Display boards were available for review and discussion with the project team before and after the presentation.

Following the PIC, the presentation and the recording were posted on the Township's website. The attendance sheet and a copy of the presentation slides are included in Appendix B.

14.3 PHASE 1 COMMENTS AND INPUT RECEIVED

Comments received during Phase 1 and at the PIC are summarized in Table 12. Email correspondence and responses are included in Appendix B.

Table 12: Summary of Phase 1 Comments and Responses

DATE	FROM	COMMENT	RESPONSE
July 5 and August 20, 2023	Gary Marchand	Inquired about plans to extend municipal water service to residents along Tiny Beaches Road North. Concerned with safe drinking water and water supply for fire protection.	Email responses on July 5 and August 25, 2023. The Township intends to gauge public interest in connecting to municipal water.
July 12 and 13, 2023	Chunmei Liu, MECP	MECP acknowledgement letter and additional information guidance.	No response required.
July 27, 2023	Kevin Cachia	Voicemail inquiry about plans to extend municipal water to residents along Tiny Beaches Road, south of Balm Beach.	Phone response on August 4, 2023. Municipal water service extensions will be considered in certain areas.
July 28, 2023	Vickie Edgeworth-Pitcher	Expressed concern about the effects of development on Township infrastructure.	Email response on August 4, 2023. The project will consider water system infrastructure needs to service future development.
July 29 to Aug 11, 2023	Susan Barbi	Inquired about municipal water service extension to her property on Tiny Beaches Road South.	Email responses on August 4 and 11, 2023. Extension of municipal water service to the area is unlikely in the near future.
August 15, 2023	Anonymous	Not in favour of water metering and expressed concern about unequal cost sharing between full-time and seasonal residents.	No contact information provided for a response. Water consumption rates in some areas of the Township are significantly higher than in others. Water meters and rate-based water billing ensure that users pay in proportion to their water consumption.
August 15, 2023	Anonymous	How do I determine if my property will be impacted?	No contact information provided for a response. Residents who want to know more can refer to the project page on the Township's website and provide contact information to be added to the mailing list.

DATE	FROM	COMMENT	RESPONSE
August 16, 2023	Barry Goode	Expressed concern about impacts on groundwater supply from existing potato farm irrigation systems.	Email response on September 5, 2023. Potential impacts of water takings related to farm irrigation with respect to nearby municipal wells will be considered.
August 17, 2023	Annice Blake	Requested information about the treatment and disposal of septage in the Township.	Email response on August 25, 2023. Sewage treatment and disposal will be considered when assessing drinking water solutions. New sewage solutions are not part of the scope of the Water Master Plan.
August 17, 2023	O Visco	What is the purpose of the water master plan.	Email responses on August 29 and 31, 2023. Provided the project website link. The Water Master Plan aims to identify long term strategies and evaluate options for improving resiliency and expansion of the Township's 16 drinking water systems.
August 17 to 25, 2023	John Lyons	Requested information about high water levels in Farlain Lake and the impacts of municipal wells on water levels.	Email responses on August 25 and 31, 2023. Potential impacts of water taking from new municipal wells on water levels in Farlain Lake will be considered.
August 21 and 25, 2023	Ray Nason	Requested clarification about whether private well owners will be affected.	Email response on August 25, 2023. Provided a link to the Township's survey about homeowner water service.
August 28 to Sept 5, 2023	Jaymie Brown	Requested the Zoom link for PIC #1 and clarification about PIC format. Reposted the presentation slides on social media. Requested more information about the aquifers in Tiny Township.	Email responses on August 28 and September 5, 2023. Provided the Zoom link for PIC #1 and the link to the PIC recording.
Aug 28 to Sept 6, 2023	G Muller	Requested a copy of the PIC #1 presentation. Provided comments	Email responses on August 31 and September 6, 2023. Provided a pdf copy of the PIC #1

DATE	FROM	COMMENT	RESPONSE
		about funding for water infrastructure.	slides and a link to the recording. Responded to comments about funding sources.
August 30, 2023	Marnie Marsh	Inquired whether municipal water service would be extended to her new home on Tiny Beaches Road South by spring 2024.	Email response on August 31, 2023. Municipal water extensions are being considered. There are currently no plans to extend municipal water to Tiny Beaches Road South by spring 2024.
Sept 12, 2023	Roseanna Greig	Will private well owners be forced to connect to municipal water?	Email response on September 15, 2023. Homeowners who are unhappy with their private well may have opportunity to connect to municipal water if they want to.
Sept 13, 2023	Donna Lamb	Expressed support for the Master Plan. Would like to see water service improved in Balm Beach and improved fire protection.	Email response on September 15, 2023. Acknowledged receipt of the comments.
Comments and Responses During PIC No. 1			
August 28, 2023	Jessie Garland	Requested information of the number of aquifers in Tiny, the water quality between each. Requested clarification about storage capacity in Bluewater. Will all homes in a water system be metered or just homes that are suspected of high water usage? Short term rental properties almost certainly have higher consumption than the average home.	There are three main deep aquifers that provide the groundwater for the municipal wells in Tiny. A description of the local area aquifers was provided. The underground reservoir at PH 18 provides treated water storage for Bluewater. In water systems where meters are implemented, all properties will have a water meter installed. This allows property owners to review and manage their water consumption. Homeowners will pay based on the amount of water they use.

DATE	FROM	COMMENT	RESPONSE
August 28, 2023	Gary Marchand	When will new municipal water services be available for Balm Beach? A number of private wells have dried up. Cottagers on the shoreline can obtain water from Georgian Bay but, property owners not on the shoreline must rely on a private well.	Municipal watermains do not extend to Balm Beach. Extending municipal water to Balm Beach is being considered as part of the Master Plan. The public water fill station in Perkinsfield was originally constructed to provide a water source for Balm Beach property owners.
August 28, 2023	Anonymous	Would like to see municipal water extended to fully developed areas currently on private water. Concerned about the number of water system repairs that are needed and the costs to residents when only 25% of residents are serviced by municipal water. Commented on the desire of residents for improved fire protection.	Water system costs are not paid for by property tax revenues but by water billing revenues. Only residents with municipal water service pay for water system costs. The hydrants in most water systems are used primarily for flushing and not for fire protection. The Township has an accredited shuttle program for its fire pumper trucks.
August 28, 2023	Natalie Freitas	Does the County of Simcoe bear any responsibility for maintaining the water systems in the Township. How many wells are there in Tiny? Are the wells in Perkinsfield impacted by the plume from the closed Pauzé landfill? Concerned about the number of water system repairs that are needed.	The County is not responsible for municipal water systems. There are approximately 15,000 private wells in the Township. The operation and maintenance of a private well is the responsibility of the property owner. The plume from the closed Pauzé landfill has been monitored for decades by the Province. The plume extends to the southwest and has no impact on the Perkinsfield municipal wells. The Township maintains all its water systems in good working order and in accordance with all applicable standards and regulations. Each year the Township allocates capital budget for needed water system repairs. One objective

DATE	FROM	COMMENT	RESPONSE
			of the Master Plan is to identify areas where improvements are needed.
August 28, 2023	Jim Simpson	Commented that handouts of the slides would be helpful. Why is water consumption so much higher than the Provincial average? Nitrate testing program done in area of 4, 5, and 6 Concession. What water quality parameters are the Township required to test for? What disinfection treatment processes are used?	Lawn watering and distribution system leaks are expected to contribute to high water consumption. However, most water systems are not metered. Water meters were recently installed in Wyevale and water consumption has decreased. Perkinsfield will get meters next. Installation of meters is expected to reduce consumption, identify leaks, and delay infrastructure upgrades. The Township tests water quality for hundreds of parameters including bacteriological parameters (weekly), nitrates (quarterly; biweekly in Lafontaine due to elevated levels), inorganics and organics (every 5 years), metals (every 3 years), lead in distribution system (every 3 to 5 years). All water quality test results are available on the Township's website under Annual Reports. Chlorine and UV are both used for primary disinfection. Chlorine is used for secondary disinfection.
August 28, 2023	Anonymous	What are the expected costs and timelines for watermain extensions and what is involved? Requested more information about expected plans, construction timeline and cost estimate for infrastructure changes.	The alternatives for water system extensions will be evaluated and costing determined prior to presenting this information at the next PIC. No significant extension of drinking water systems is planned for next year.
August 28, 2023	Julian Polika	Will homeowners on private wells be coerced into connecting to municipal water? Or are only expansions to unserviced lots originally planned to be connected	The Master Plan will consider connection of unserviced lots within serviced areas, and interconnection of water systems that are near each other, and connection of properties in between. The Township is conducting an

DATE	FROM	COMMENT	RESPONSE
		to municipal systems being considered? He is happy with his private well and treatment system, which is near Tee Pee Point, and is not interested in connecting to municipal water.	online survey so that residents can indicate their preferences for connecting to municipal water.
August 28, 2023	Sue Silversides	Is there a timeframe for the installation of water meters in Bluewater? Will residents have to pay for the cost of the water meter installation?	There is not currently a timeframe for implementing water meters in Bluewater. The Township will be putting water meters in Perkinsfield next. Roll out of water meters to other systems will follow. The costs of water meters will be a budget item on the Township's annual capital water budget.
August 28, 2023	Anonymous	Is there enough groundwater supply to continue to provide water to the municipal wells?	The current rate of water taking from municipal wells is sustainable. In general, the supply of groundwater in the Township is reliable. Precipitation rates in the Great Lakes basin are generally increasing. Groundwater recharge rates are in the order of 500 mm/year. Water levels in the municipal wells have increased over the decades since the wells were constructed.
August 28, 2023	Anonymous	Expressed concern about potential impacts on supply well water levels due to receding water levels in the Great Lakes.	Lake levels can directly impact the water level in a well that is directly connected to the lake through a shallow sandy aquifer. Well levels are more significantly impacted by spring and fall recharge events due to snow melt and precipitation.

14.4 TOWNSHIP SURVEY

The Township posted an informal survey on the project webpage to ask residents about their existing water service. Online survey responses were collected during August and September 2023. A summary of the survey results is included in Appendix C.

14.5 PUBLIC INFORMATION CENTRE NO. 2

The public and stakeholders, agencies, and interested parties on the updated mailing list were invited to a Phase 2 PIC to obtain input on the water infrastructure alternatives and the preliminary preferred solutions.

The Notice of Public Information Centre was mailed and emailed on May 14, 2024. It was also posted on the Township's Water Master Plan webpage. The Notice of PIC No. 2 is attached in Appendix B.

PIC No. 2 was held in the Township Council Chambers on June 4, 2024. The PIC included a presentation by Tatham, followed by a question-and-answer period, which were recorded and simultaneously broadcast on the Township's YouTube channel. 11 people attended in person and several more attended online.

Following the PIC, the presentation and the recording were posted on the Township's website. The attendance sheet and a copy of the presentation slides are included in Appendix B.

14.6 PHASE 2 COMMENTS AND RESPONSES

Comments received during Phase 2 and at PIC No. 2 are summarized in Table 13. Email correspondence and responses are included in Appendix B.

14.7 NOTICE OF STUDY COMPLETION

The Notice of Study Completion will be published once the final draft report is available for review.

14.8 CONSULTATION WITH INDIGENOUS COMMUNITIES

A list of the Indigenous Communities contacted during the WMP is included on the mailing list in Appendix B. Additional consultation with Indigenous Communities is required for the Schedule B and C projects identified in Section 15.

Table 13: Summary of Phase 2 Comments and Responses

DATE	FROM	COMMENT	RESPONSE
May 14, 2024 to June 11, 2024	Susan Barbi	Unhappy with her recently drilled well on Tiny Beaches Road South, as the water quality and quantity are not good. Would be interested in connecting to municipal water.	Email responses on May 16, 2024 to June 12, 2024. The WMP will consider extending municipal water systems in some areas where homeowners have a desire and/or a need to connect.
May 14, 2024	Randy Black	Seasonal property owner on Tiny Beaches Road North that would like to have water meters installed.	Email response on May 16, 2024. The Township is installing water meters in existing water systems on a priority basis and as funding allows.
May 14, 2024	Paul Bell	In favour of the water master plan.	No response required. Contact added to mailing list.
May 14 and 16, 2024	Catherine Mossman	Private well owner on a rural property. Concerned about being forced to connect to municipal water.	Email response on May 16, 2024. The WMP intends to consider extending municipal water in areas where residents want it and/or need it.
May 15, 2024	Cathy Marcellus	Requested to be removed from project mailing list. Has a private drilled well on Concession Road 5 East. Does not want municipal water.	No response required. Removed from mailing list.
May 15, 2024	Barry Goode	Phone call. Expressed concern about impacts on groundwater supply from existing potato farm irrigation systems.	Potential impacts of water takings related to farm irrigation with respect to municipal wells will be considered in the study.
May 21, 2024	Robert Crittenden	Has a private well across the road from the Tee Pee Point municipal water system. In favour of the option to connect to municipal water in the future.	Email response on June 10, 2024. The WMP will include recommendations for upgrades at the Tee Pee Point DWS for the long-term supply of drinking water to this area.
May 21, 2024	Alison Gordon, MNRF	Provided MNRF acknowledgement letter and additional information and guidance on assessing natural features and resources.	No response required.

DATE	FROM	COMMENT	RESPONSE
May 27, 2024	Anonymous	Is this looking to provide municipal water to existing seasonal cottages on Tiny Beaches Road North? What would be the approximate timeline and costs to the cottage owner?	Email response on June 10, 2024. The WMP will recommend further study to consider possible solutions for improving both water and sanitary servicing in the Balm Beach area.
June 2, 2024	Anonymous	Requested a 5-year moratorium on aggregate mining on French's Hill.	Email response on June 10, 2024. Review of aggregate mining approvals is outside the scope of the WMP.
June 4, 2024	Anonymous	Requested clarification of dates for PIC No. 2 and Master Plan completion.	Email response on June 10, 2024. PIC No. 2 was held on June 4, 2024. Completion of the WMP report is anticipated by fall 2024. A draft report will be made available for public review.
June 4, 2024	Judy Coltman	In favour of extending municipal water supply to their home in Balm Beach. Approximately when would this be implemented?	Email response on June 10, 2024. Providing municipal water in the Balm Beach area will require further studies and will be a long term, high cost project.
June 4, 2024, to June 12, 2024	Stanislava Bucek	Comments and concerns regarding capital costs for water system upgrades to service growth.	Email responses on June 10 to 13, 2024. Provided clarification on number of water systems and facilities in the Township, and the proposed capital works. Provided a link to the presentation slides for PIC No. 2 on the project website.
June 4, 2024	Anonymous	Requested an estimated timeline for providing municipal water to Ossosane Beach (near to Balm Beach).	Email response on June 10, 2024. Further study will be required to consider improved water and sanitary servicing in the Balm Beach area.
June 5 and 20, 2024	Germaine Muller	Concerned with the costs required for the water infrastructure works.	The recommended projects and studies, cost estimates, and timelines for the next 20 years will be included in the WMP report.

DATE	FROM	COMMENT	RESPONSE
June 6 and 13, 2024	Melanie Robitaille	Concerns with water meter implementation, consumption impacts to aquifers, and the costs of the municipal water systems.	Email response to the comments on June 12, 2024. Correspondence is included in Appendix B.
June 10, 2024	Lucas Shepherd	Concerned about water supply availability for fire protection for a home on a private well.	Email response on June 12, 2024. The fire department utilizes a shuttle service and would obtain water from a hydrant at the nearby Whippoorwill water system for fire fighting.
June 10, 2024	Marc	No hydrants in my area. Interested in improved water supply for fire protection to help lower insurance costs.	Email response on June 12, 2024. Provided a link to the Township's tanker shuttle accreditation that can be submitted to insurance companies.
June 13, 2024	Anonymous	There is no municipal water system in my area. Municipal water systems should be extended to provide improved water supply for fire protection to existing homes and to help lower insurance costs.	Email response on June 13, 2024. Provided a link to the Township's tanker shuttle accreditation that can be submitted to insurance companies. The Township is considering improvements to its network of water storage tanks and dry hydrants.
June 17, 2024	Anonymous	Is there any plan to add Lefaive Road residents to the Lefaive municipal water system in the future?	Email response on June 21, 2024. There are currently no plans to extend the Lefaive DWS. The WMP will propose further study to consider the need for improved water and sanitary servicing in Balm Beach and surrounding area.
June 17, 2024	Anonymous	There is no municipal water system in my area. Municipal water systems should be extended to provide improved water supply for fire protection to existing homes and to help lower insurance costs.	Email response on June 18, 2024. Provided a link to the Township's tanker shuttle accreditation that can be submitted to insurance companies. The Township is considering improvements to its network of water storage tanks and dry hydrants.

DATE	FROM	COMMENT	RESPONSE
June 17, 2024	Anonymous	Water supplies for fire fighting should be expanded throughout the municipality.	Improvements to the water supplies available for fire fighting are being considered in the WMP.
June 19, 2024	Anonymous	Concerned that a new WTP to service Lefaive, Balm Beach, and Perkinsfield would urbanize the area.	Connecting Lefaive to Perkinsfield and Balm Beach would be considered if a new lake-based WTP was implemented. Further study is needed to determine a servicing solution for the Balm Beach area.
June 24, 2024	Jessie Garland	Concerned about the costs of the water infrastructure works required and increased taxes as a result.	The WMP will identify recommended projects and studies, cost estimates, and timelines for the next 20 years.
June 28, 2024	Anonymous	There is no municipal water system in my area. Would like to see municipal water systems extended to provide improved water supply for fire protection to existing homes and to help lower insurance costs.	The Township has tanker shuttle accreditation that can be submitted to insurance companies. The Township is considering improvements to its network of water storage tanks and dry hydrants.
Comments and Responses During PIC No. 2			
June 4, 2024	Joe Vidic	Will private well owners be forced to connect to municipal water? Who pays for the water meters? How are the water meters funded? Are meters placed outside the property building?	Extending municipal water will be considered in areas where there is interest from existing residents to connecting. DWS extensions would typically be completed as local improvement projects. In an area where most homeowners want municipal water and an extension is completed, all homes would be expected to connect. Installation of water meters is funded by the Township's water capital budget. Water meters will be installed inside the home. Meters can be read from outside by Township staff. The cost of replacing a water service to the home is the responsibility of the homeowner.

DATE	FROM	COMMENT	RESPONSE
June 4, 2024	Karen Zelenick	Where can the results of the survey be found? How will the public be notified about the opportunity to provide comments on the Master Plan? The electronic bulletin board should be used. Where is the online comment form? Concerned about the total costs for the water infrastructure projects. Is the water reserve underfunded?	Results of the Township survey can be emailed directly to anyone that requests a copy. The results are also posted on the project website. Notices will be mailed directly to all who have asked to be on the project mailing list. Notices will be posted on the Township's website and on the electronic bulletin board. The online comment form is on the project webpage on the Township's website. Flat rate bill of $1,100 per year; part is for operating costs and part is for the capital water reserve. The Township is currently updating its 5-year financial plan, which will be provided to Council in 2025.
June 4, 2024	Anonymous	The Bluewater system was originally designed for 155 lots, some of which are not yet developed. Why is additional capacity needed if no additional lots are being connected? Are water meters being implemented?	Upgrades are needed for the Bluewater DWS to address aging infrastructure, increase operational flexibility and system resiliency, and meet current standards for fire protection requirements. Water meters are being implemented to ensure homeowners pay for water they use, to help the Township identify leaks, and to encourage homeowners to conserve water. Homeowners will have a 1-year trial period when water meters are implemented, to review their water usage and address any waste, before consumption-based billing is implemented.
June 4, 2024	Anonymous	Will the Lefaive water system be expanded south along Lefaive Road?	Expansion of the Lefaive DWS is not currently being considered but could be if a significant number of homeowners in the area express a desire to receive municipal water.
June 4, 2024	Jessie Garland	Where it was stated there is insufficient groundwater and surface water needs to be considered, does this mean we have depleted the capacity of the aquifer?	Groundwater levels are not being depleted. Water levels in municipal wells have increased in recent years. In certain areas, i.e. Georgian Bay Estates, there is sufficient groundwater for the existing homes but not for growth. In

DATE	FROM	COMMENT	RESPONSE
		Do the watermains also need to be replaced/upsized in the seasonal systems?	addition, the conversion of small, seasonal cottages to larger, permanent residences has added strain on the capacity of the water systems. Watermains in DWS that were originally designed for seasonal use are undersized and leaking. The Township typically has an annual budget for replacement of watermains.
June 4, 2024	Anonymous	The alternative solutions were described as "short-term" and "long-term". What timelines do these refer to?	Project timelines will be dependant on several factors, including funding availability and risk assessments. Short term projects should go on a 5-year or 10-year capital plan. Long term plans, such as WTP projects, may be planned for completion over 10 years or more.
June 4, 2024	Anonymous	When will the Forest Circle/Tall Pines watermains (part of the Lafontaine water system) be upgraded to accommodate fire hydrants? Is not having fire hydrants considered a risk?	The watermain upgrades in Lafontaine are part of the current 5-year plan. Pumphouse improvement projects to improve nitrate management in Lafontaine needed to be completed ahead of the watermain upgrades. The Township determined the priority and timeline for completing these projects using a risk management process.
June 4, 2024	Anonymous	Has the 1989-1990 study regarding the cost of implementing a water system for Balm Beach been reviewed? Is the plume from the abandoned Perkinsfield landfill still being monitored or has attenuation made this unnecessary?	The Balm Beach study will be reviewed as background information. The costing information will not be relevant as it is out of date. Monitoring of the abandoned landfill plume is carried out by the province and is outside of the scope of this WMP.
June 4, 2024	Anne Ritchie-Nahuis	Is the Township currently drawing water supplies from Farlain Lake or from Georgian Bay, or is all water supply from groundwater?	All municipal water sources are currently groundwater. Availability of water supply is a significant consideration whenever a subdivision development is proposed. The

DATE	FROM	COMMENT	RESPONSE
		Does the Township assess the availability of a sufficient water supply prior to development? Are there possible impacts to the municipal water supply water quality from the abandoned Pauze landfill plume?	Township conducts regular water quality testing for a significant number of parameters. All water quality testing results are available on the Township website or upon request. Well head protection areas have been delineated for the municipal wells, and none are near the landfill plume. No impact on municipal water quality is anticipated from the abandoned landfill plume.
June 4, 2024	Anonymous	Will all service lines be replaced, regardless of how recently the home was built, when watermains are being replaced?	Watermain replacement will include replacement of service lines up to the curb stop. Replacement of the private portion of the service line from the curb stop to the home, if needed, is the homeowner's responsibility.
June 4, 2024	Anonymous	Is there an alternative to the wireless water meter reading technology? I avoid wireless signals being constantly on in my home as much as possible.	A touch technology is available for meter reading; however, the Township has not used this anywhere else. The wireless meter signals are low power, battery operated signals that only activate when the meter reader takes a reading.
June 4, 2024	Joe Vidic	Does the Lafontaine water system include the village of Lafontaine or Georgian Sands or both? Will water meters be implemented in Lafontaine? Once water meters are installed, what do I pay if no water is used?	The Lafontaine DWS serves the village of Lafontaine and Georgian Sands. The water supply in Lafontaine is supplemented by water pumped from Georgian Sands and stored in the Lafontaine reservoir. A booster pumping station (BPS 14) at the reservoir pumps water to the pumphouse (PH 23) in Lafontaine. Water meters will be implemented in the Lafontaine DWS as part of the ongoing program. With no water usage, just the flat capital rate would apply, as per the Township's fee bylaw.

DATE	FROM	COMMENT	RESPONSE
June 4, 2024	Anonymous	Is there an increased risk in areas that do not have fire hydrants?	The Township Fire Department maintains a shuttle service accreditation. This ensures the Fire Department can fight a fire using its pumper trucks to bring water to a fire. The Township is considering ways to improve its water supply for fire protection.
June 4, 2024	Anonymous	Where can the public view the 5-year capital plan?	The current 5-year plan is available online. An updated plan is being developed and will be reported to Council in 2025.

15 Recommended Projects

The public and agency consultation did not result in changes to the preliminary preferred solutions. All preferred solutions are recommended to be included in the WMP.

This section summarizes the recommended projects and studies, and presents a recommended implementation plan and timeline, with associated costs.

15.1 RECOMMENDED MAJOR CAPITAL PROJECTS

The recommended major capital projects are listed in Table 14, with approximate timeline, estimated costs in 2025 dollars, and Class EA requirements for each project. A brief description and justification for each listed project follows.

The suggested timing of implementation of the projects is based on whether the project is required to meet existing demands or future demands, and whether the project is needed to facilitate additional projects. Consideration was also given to the Township's capacity, both financial and human resources, to implement the projects within a feasible timeframe.

15.1.1 Capital Project Descriptions

C1. Replace the wells at Georgian Bay Estates PH 19

Replacement of the deteriorated wells at PH 19 is a priority to provide sufficient firm supply capacity for existing demands.

Construct two or more groundwater supply wells to replace the three deteriorated wells at PH 19. The new wells are required to provide a firm capacity of 800 m^3/day with the largest well offline. It is anticipated that three 150 mm wells, approximately 17 m deep, will be needed. This project will consist of constructing and testing the new wells and pumps, a hydrogeological investigation, and updates to source water protection modelling.

C2. Connect the Georgian Bay Estates and Sawlog Bay distribution systems

Georgian Bay Estates and Sawlog Bay have multiple existing capacity or repair concerns. Connecting the two distribution systems is a priority project because it will provide operational flexibility to carry out the necessary repairs at PH 16 without significant service interruption.

Installation of 500 m of 200 mm diameter watermain along Champlain Road from the Georgian Bay Estates distribution system to the Sawlog Bay distribution system. A valve chamber will be provided on the new watermain to modulate pressure between the two distribution systems.

C3. Construct a standby well in the Lafontaine DWS (Georgian Sands)

Construct a standby groundwater supply well to provide sufficient firm capacity to meet the existing MDD. The new well is required to provide standby capacity of 434 L/min when well 14-1 is offline for pump or well maintenance. It is anticipated that a 200 mm diameter well will be needed, approximately 30 m deep. This project will consist of constructing and testing the new well and pump, hydrogeological investigation, and updates to source water protection modelling.

C4. Construct a standby well at Rayko PH 6

Construct a standby groundwater supply well to provide sufficient firm capacity to meet the existing PHD. The new well is required to provide standby capacity of 90 L/min when well 6-3 is offline for pump or well maintenance. It is anticipated the new well will be a 150 mm diameter well, approximately 37 m deep, identical to the existing Rayko wells. This project will consist of constructing and testing the new well and pump, and hydrogeological investigation.

C5. Increase the standby well supply in Perkinsfield

Additional standby groundwater supply is needed to provide firm capacity to meet the existing MDD when well 26-5 is offline for pump or well maintenance. Well 26-4 will be tested to determine whether it can supply sufficient quantity and quality of water. If well 26-4 is not a suitable supply well, then a new standby well will need to be drilled, which is anticipated will be approximately 37 m deep and similar to well 26-5. This project includes the hydrogeological investigation of Well 26-4 and construction and testing of a new well and pump.

C6. Add standby power at Perkinsfield PH 22

Installation of a standby generator at PH 22 is needed to ensure sufficient water supply to meet the existing demand in the event of a power outage. The project includes the addition of a 175 kW outdoor generator, an automatic transfer switch and associated electrical upgrades in PH 22.

C7. Add standby power at Bluewater PH 8

Installation of a standby generator at PH 8 to ensure sufficient water supply to meet the existing demand in the event of a power outage. The project includes the addition of a 40 kW outdoor generator, an automatic transfer switch and associated electrical upgrades in PH 8.

C8. Add standby power at Wyevale BPS 24

Installation of a standby generator at BPS 24 to ensure sufficient pumping capacity to meet the future demand in the event of a power outage. The project includes the addition of a 100 kW generator, an automatic transfer switch and associated electrical upgrades.

C9. Construct a standby well at Bluewater PH 8

Construct a standby groundwater supply well to meet the future MDD. The new well is required to provide standby capacity of 250 L/min when well 8-1 is offline for pump or well maintenance. It is anticipated the standby well will be a 200 mm diameter well approximately 30 m deep, identical to well 8-1. This project will include construction and testing of the new well and pump and hydrogeological investigation.

C10. Expand the Bluewater PH 18 reservoir

Construct a 263 m^3 expansion of the below ground reservoir at PH 18. The additional reservoir capacity is needed to provide improved fire protection in accordance with current MECP guidelines. This project would proceed when required by the Fire Department.

C11. Replace Cook's Lake Well 12-2 with a higher capacity well

Construct a new groundwater supply well to replace existing well 12-2. The new well is required to provide a standby capacity of 310 L/min to meet the future MDD. The PTTW will need to be updated to provide the firm capacity with either well 12-1 or 12-2 offline. It is anticipated that the new well will be a 200 mm diameter well, approximately 48 m deep. This project will consist of constructing and testing the replacement well 12-2, hydrogeological investigation, and updates to source water protection modelling.

C12. Construct a new well and new PH at Tee Pee Point

Construct a new groundwater supply well and a new pumphouse to replace PH 9. The new well is required to provide standby capacity of 200 L/min to meet the projected PHD when one of the existing wells is offline for maintenance. It is anticipated that the new well will be a 150 mm diameter well, approximately 21 m deep. This project will include construction and testing of the new well and pump, hydrogeological investigation, and updates to source water protection modelling. A Schedule B Class EA study is required to identify the preferred location and configuration for the new pumphouse and well.

C13. Expand the reservoir and upsize the high lift pumps at Wyevale BPS 24

Construction of a 358 m^3 expansion of the below ground reservoir at BPS 24 and replacement of the two high lift pumps with larger pumps. The additional reservoir and pumping capacity are needed to provide improved fire protection in accordance with MECP guidelines. This project would proceed when required by the Fire Department.

C14. Construct a standby well at Castle Cove PH 4

Construct a standby supply well to increase the firm supply capacity to meet the projected PHD. The new well is required to provide standby capacity of 668 L/min when well 4-1 is offline for pump or well maintenance. It is anticipated the standby well will be a 200 mm diameter well, approximately 39 m deep, identical to well 4-1. This project will consist of construction and testing of the new well and pump, and hydrogeological investigation.

C15. Construct watermain loops in the Georgian Bay Estates DWS

Installation of 1,900 m of 200 mm diameter watermain to provide redundancy for the single, long transmission main along Champlain Road from PH 19.

Table 14: Recommended Major Capital Projects

NO.	PROJECT	SUGGESTED TIMELINE	ESTIMATED COSTS ($2025)	CLASS EA STATUS
Short Term Major Capital Projects				
C1	Replace the wells at Georgian Bay Estates PH 19	1 to 3 years	$700,000	Exempt
C2	Connect the Georgian Bay Estates and Sawlog Bay distribution systems	1 to 3 years	$1,400,000	Exempt
C3	Construct a standby well in the Lafontaine DWS (Georgian Sands)	4 to 6 years	$500,000	Exempt
C4	Construct a standby well at Rayko PH 6	4 to 6 years	$400,000	Exempt
C5	Increase the standby well supply at PH 26 in Perkinsfield	4 to 6 years	$600,000	Exempt
C6	Add standby power at Perkinsfield PH 22	7 to 10 years	$300,000	Exempt
C7	Add standby power at Bluewater PH 8	7 to 10 years	$200,000	Exempt
C8	Add standby power at Wyevale BPS 24	7 to 10 years	$300,000	Exempt
Longer-Term Major Capital Projects				
C9	Construct a standby well at Bluewater PH 8	10 to 20 years	$500,000	Exempt
C10	Expand the Bluewater PH 18 reservoir (for fire protection)	10 to 20 years	$1,000,000	Exempt
C11	Replace Cook's Lake Well 12-2 with higher capacity well	10 to 20 years	$500,000	Exempt
C12	Construct new well and replace Tee Pee Point PH 9	10 to 20 years	$1,700,000	Schedule B
C13	Expand the reservoir and upsize the high lift pumps at Wyevale BPS 24 (for fire protection)	10 to 20 years	$1,700,000	Exempt
C14	Construct a standby well at Castle Cove PH 4	10 to 20 years	$500,000	Exempt
C15	Construct watermain loops in the Georgian Bay Estates DWS	10 to 20 years	$4,000,000	Exempt

Estimated Project Costs

The estimated project costs for the recommended major capital projects are included in Table 14. The project cost estimates are based on preliminary concepts, recent tender prices, and budgetary pricing from suppliers. The cost estimates should be considered as an opinion of probable costs in 2025, developed for budgeting purposes and subject to refinement following project design. Appropriate inflation factors should be applied to project costs beyond the year 2025. All cost estimates include allowances for contingencies (25%) and engineering (15%).

Municipal Class EA Requirements

In accordance with the Municipal Class Environmental Assessment (MEA, March 2023), the following types of recommended projects are exempt from Municipal Class EA requirements:

- Construction of replacement or standby groundwater wells at an existing municipal well site, where the rated yield will not be exceeded (Table B, item 9a).
- Adding watermains to connect existing distribution systems, if the new facilities are within an existing road allowance or utility corridor (Table B, item 4b).
- Adding or replacing high lift pumps and treatment equipment within an existing pumping station (Table B, item 5a).
- Reservoir expansion where no land acquisition is required (Table B, item 6a).
- Adding standby power systems (Table B, item 60).

Public notification of these projects prior to construction is not required but should be carried out in accordance with Township policy.

The following projects will require that a Schedule B Class EA be conducted, including additional consultation with the public, review agencies, and Indigenous Communities:

- Construction of a replacement pumphouse at the Tee Pee Point DWS, as per MEA Class EA document Table B item 5d. The new facility should not be located adjacent to environmentally or otherwise sensitive areas.
- Construction of a new well for Tee Pee Point at a new municipal well site (Table B, item 9d).

In addition, the recommended long-term solutions that involve a new water treatment plant and associated facilities will require that Schedule C Class EAs be conducted, including additional consultation with the public, review agencies, and Indigenous Communities, as described further in Section 15.3.

15.2 RECOMMENDED MINOR CAPITAL PROJECTS

Minor capital works are recommended to address existing water infrastructure deficiencies. These are listed in Table 15. These projects should be completed in the short term, preferably within the next 5 years, by 2030.

Table 15: Recommended Minor Capital Projects

NO.	DRINKING WATER SYSTEM	PROJECT	ESTIMATED COSTS ($2025)
M1	Lafontaine	Replace corroded electrical panels at PH 2	$150,000
M2	Lafontaine	Replace corroded piping, fittings and valves at PH 23	$150,000
M3	Lafontaine	Upgrade the communications system at BPS 14	$80,000
M4	Castle Cove	Upgrade electrical power supply equipment at PH 4	$150,000
M5	Sawlog Bay	Replace corroded electrical panels and upgrade raw water piping and valves at PH 16	$350,000
M6	Perkinsfield	Replace corroded raw and treated water piping, fittings and valves, and add air relief valves at PH 22	$250,000
M7	Perkinsfield	Replace corroded treated water piping, fittings, and valves at PH 26	$250,000
M8	Perkinsfield	Replace 1,200 m of undersized watermains with 150 mm pipes	$1,800,000
M9	Pennorth	Upgrade piping and remove asbestos in PH 7	$450,000

15.3 RECOMMENDED STUDIES

Further detailed studies are recommended beyond the scope of this WMP. The recommended studies are described below and summarized in Table 16 with suggested budgets. As noted in the table, some studies are in support of the existing DWS while the purpose of the remaining studies is to consider expansion of municipal services to new areas.

S1. Castle Cove, Lafontaine & Vanier Woods WTP Class EA

This study must be undertaken under the Municipal Class EA process for Schedule C undertakings, to determine the preferred location and configuration for a new WTP and raw water intake into Georgian Bay to provide drinking water to Castle Cove, Lafontaine and Vanier Woods. The study should also define the configuration of the water distribution system, including distribution, pumping and storage upgrades, that will connect and serve the three communities.

Table 16: List of Recommended Studies

NO.	PROJECT	ESTIMATED STUDY BUDGETS ($2025)
For Existing Water Systems		
S1	Castle Cove, Lafontaine & Vanier Woods WTP Class EA	$400,000
S2	Georgian Bay Estates & Sawlog Bay WTP Class EA	$400,000
S3	Perkinsfield PH 26 Treatability Study	$150,000
S7	Tee Pee Point PH 9 Replacement Study	$250,000
For Municipal Service Expansions		
S4	Balm Beach Water and Sanitary Servicing Study	$400,000
S5	Farlain Lake Servicing Needs and Feasibility Study	$150,000
S6	Wahnekewening Drive Servicing Study	$250,000

S2. Georgian Bay Estates & Sawlog Bay WTP Class EA

Similarly, a Municipal Class EA study (Schedule C) should be completed to identify the preferred location and configuration for a new WTP and raw water intake into Georgian Bay that could provide municipal drinking water service to Georgian Bay Estates, Sawlog Bay, and the surrounding area.

S3. Perkinsfield PH 26 Treatability Study

A water treatability study should be undertaken to determine the cause and identify an effective solution to reduce the formation of chlorination by-products (THMs) at the Perkinsfield PH 26 water reservoir. Alternative treatment processes should be evaluated through testing and analysis. It is recommended that this study be conducted with technical support from the Walkerton Clean Water Centre's Research and Technology team, which offers this provincially subsidized service to municipalities.

S4. Balm Beach Water and Sanitary Servicing Study

A water and sanitary servicing study is recommended, to be completed under the Municipal Class EA process, to comprehensively assess the water and sanitary servicing needs and options and resolve a servicing solution for Balm Beach. The study will also determine the extent of the area to be serviced along the shoreline.

S5. Farlain Lake Servicing Needs and Feasibility Study

This servicing study will consider the costs, benefits and implications of extending the Cook's Lake DWS to service homes on the opposite side of Farlain Lake. It will require an assessment of needs and a survey of unserviced homeowners.

S6. Wahnekewening Drive Servicing Study

A study to evaluate alternatives for servicing homes on Wahnekewening Drive is recommended, to be undertaken under the Municipal Class EA process. Private and municipal servicing alternatives should be considered and evaluated, including extending the Pennorth DWS. The study should address the properties that have private wells located on municipal land and consider the condition of the septic systems.

S7. Tee Pee Point PH 9 Replacement Study

Replacement of the Tee Pee Point DWS pumphouse will require a Class EA study (Schedule B) to determine the preferred location and configuration of the facilities, including a new standby well.

15.4 OVERALL SUMMARY OF ESTIMATED COSTS

The estimated costs (2025 dollars) for the above recommended major and minor capital projects, as well as the recommended studies, are presented in three timelines: 5-years (2025-2030), 10-years (2031-2035), and 20 years (2036-2045) in Table 17. The estimated costs are based on recent tender prices and current inflation rates. It is noted that current economic conditions and the imposition of U.S. tariffs could significantly impact the estimated costs. Projects have been prioritized as described in Section 15.1. Project timing will vary from year to year based on factors such as reduced water consumption due to water meters, emergency repair requirements, and funding availability.

Project costs have not been provided for future WTP projects that need to first be developed during a Municipal Class EA study.

In addition to the recommended capital projects and studies presented, the Township has a watermain replacement program. Watermains are prioritized for replacement based on age, breaks, and leaks information.

Table 17: Recommended Projects and Studies and Estimated Costs* by Projected Timeline

NO.	DWS	PROJECT	2025-2030	2031 - 2035	2036-2045
M1	Lafontaine	Replace corroded electrical panels at PH 2	$150,000		
M2	Lafontaine	Replace corroded piping, fittings & valves at PH 23	$150,000		
M3	Lafontaine	Upgrade communications system at BPS 14	$80,000		
C3	Lafontaine	Construct a new well in Georgian Sands	$500,000		
M4	Castle Cove	Upgrade electrical power supply at PH 4	$150,000		
C14	Castle Cove	Construct standby well at PH 4			$500,000
S1	Castle Cove, Lafontaine, Vanier Woods	Castle Cove, Lafontaine & Vanier Woods WTP Class EA		$400,000	
C1	Georgian Bay Estates	Replace wells at PH 19	$700,000		
C2	Georgian Bay Estates, Sawlog Bay	Connect Georgian Bay Estates & Sawlog Bay distribution systems	$1,400,000		
C15	Georgian Bay Estates	Construct watermain loops in the Georgian Bay Estates DWS			$4,000,000
S2	Georgian Bay Estates, Sawlog Bay	Georgian Bay Estates & Sawlog Bay WTP Class EA		$400,000	
M5	Sawlog Bay	Replace corroded electrical panels and upgrade piping and valves at PH 16	$350,000		
C7	Bluewater	Add standby power at PH 8		$200,000	
C9	Bluewater	Construct standby well at PH 8			$500,000
C10	Bluewater	Expand PH 18 reservoir (to improve fire protection)			$1,000,000
C4	Rayko	Construct a new well at PH 6	$400,000		

NO.	DWS	PROJECT	2025-2030	2031 - 2035	2036-2045
M6	Perkinsfield	Replace corroded piping, fittings & valves, and add air relief valves at PH 22	$250,000		
M7	Perkinsfield	Replace corroded piping, fittings & valves at PH 26	$250,000		
M8	Perkinsfield	Replace 1,200 m of undersized watermains		$1,800,000	
C5	Perkinsfield	Increase the well supply at PH 26	$600,000		
C6	Perkinsfield	Add standby power at PH 22		$300,000	
S3	Perkinsfield	Perkinsfield PH 26 THM Treatability Study	$150,000		
S4	Perkinsfield, Lefaive	Balm Beach Servicing Study	$400,000		
S5	Cook's Lake	Farlain Lake Servicing Needs & Feasibility Study		$150,000	
C11	Cook's Lake	Replace Well 12-2 with higher capacity well			$500,000
M9	Pennorth	Upgrade piping & remove asbestos in PH 7	$450,000		
S6	Pennorth	Wahnekewening Drive Servicing Study		$250,000	
S7	Tee Pee Point	PH 9 Replacement Study	$250,000		
C12	Tee Pee Point	Construct new well and replace PH 9			$1,700,000
C8	Wyevale	Add standby power at BPS 24		$300,000	
C13	Wyevale	Expand reservoir and upsize HLPs at BPS 24 (to improve fire protection)			$1,700,000
		Total	**$6,230,000**	**$3,800,000**	**$9,900,000**

* in 2025 dollars

16 Financial Planning

The WMP recommended projects, and their associated estimated costs and timelines should be considered when preparing financial plans for budgetary and planning purposes, including the updated 5-year capital budgets, updated Development Charges Background Study, and future updates to the Asset Management Plan.

The table of recommended projects and studies and estimated costs by projected timeline (Table 17) was shared with Watson Associates to support the preparation of the updated DWQMS water financial plan.

Projects identified to improve fire protection are not funded by water billing revenues or reserves but are funded by the general tax base. Similarly, recommended studies to consider expansion of municipal services to new areas of the Township should be funded by the general tax base, not the water billing revenues or reserves.

Appendix A:
Needs and Opportunities Report

TATHAM ENGINEERING

Enhancing our communities

Water Treatment & Servicing Master Plan

NEEDS & OPPORTUNITIES REPORT

Township of Tiny

File 123142 | March 3, 2025

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March 3, 2025

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Issue	Date	Description
0	October 23, 2023	Draft Report for Client Review
1	March 3, 2025	Final Report

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1 Introduction

1.1 PURPOSE

Tatham Engineering Limited (Tatham) was retained by the Township of Tiny (township) to undertake a Water Treatment and Servicing Master Plan under the Municipal Class EA process. The Master Plan will evaluate alternatives and identify the preferred solutions for increasing the resiliency of the township's 16 municipal drinking water systems (DWS) and for expansion of the systems to accommodate long term growth through to the year 2043.

The purpose of this report is to present the needs for each drinking water system and the water supply needs for the entire township. This report describes the existing drinking water facilities and their capacities, current issues or known deficiencies, as well as their historical water consumption, future water supply needs to meet the projected infilling and growth in each community, and the calculated spare capacities. This report also summarizes the Township's overall goals for the supply of safe drinking water to its residents in the Problem Statement for the Class EA.

1.2 BACKGROUND DOCUMENTS

Preparation of the report was based on site visits to each water system facility and a review of background documents, reports, and data. The following documents were reviewed:

- Township of Tiny Official Plan, December 6, 2022
- Ministry of the Environment, Conservation, and Parks (MECP) Design Guidelines for Drinking Water Systems (2008)
- Township of Tiny 2022 Annual Drinking Water Reports
- Township of Tiny 2021 Annual Summary and QMS Management Report
- Drinking Water Works Permits, Municipal Drinking Water Licenses, and Permits to Take Water

1.3 REPORT ORGANIZATION

The report is organized as follows:

- Chapter 2 provides an overview of the existing drinking water systems and summarizes the population projections, historical water consumption and demands, water demand projections, and overall water system issues.

- Each drinking water system is described in Chapters 3 through 18, providing their population and water demand projections, hydraulic capacity assessment, and a summary of needs.
- Chapter 9 presents the Problem Statement that provides direction for the identification and evaluation of the Water Master Plan's alternative solutions.

2 Overview of Drinking Water Systems

2.1 EXISTING DRINKING WATER SYSTEMS

The township owns and operates 24 water system facilities in 16 municipal drinking water systems (DWS). The locations of each drinking water system are shown on Figure 1. The number of connections to the DWS ranges from 32 to 869 residences. The DWS are generally separated by significant distances and serve approximately 26% of the township's population. Each DWS consists of a groundwater well supply with a water treatment system and a water distribution network. Some DWS have treated water storage and distribution pumps.

The 16 DWS are listed in Table 1 with their Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), and Permit to Take Water (PTTW) numbers.

2.2 PROJECTED POPULATION AND GROWTH

2.2.1 Planned Total Population

The Township Official Plan and the County Official Plan outline policies for growth in the township to the year 2031. These documents provide the following relevant information for this Master Plan:

- The township's three Settlement Areas of Perkinsfield, Wyevale, and Lafontaine are serviced by municipal DWS.
- Historically, there has been extensive development along the shoreline of Georgian Bay and Farlain Lake.
- Projected population growth is anticipated to occur from the infill of new homes on existing, serviced lots, from the connection of existing homes currently on private wells where municipal service is available, and on otherwise vacant lands within the Settlement Areas.
- The permanent population in the township in 2021 was estimated to be 12,500. The permanent population is projected to grow to 13,213 by the year 2031.
- Approximately 50% of households are seasonal. 689 seasonal homes are anticipated to be added by the year 2031.
- Employment growth is anticipated to occur on lands designated as employment areas located on Concession Road 8 East and on Concession Road 9 East in the vicinity of the Huronia Airport and near Perkinsfield.

Table 1: List of Water Systems and DWWPs, MDWLs and PTTWs

DRINKING WATER SYSTEM	DWWP NUMBER & ISSUE	MDWL NUMBER & ISSUE	PTTW NUMBER
Bluewater	130-204, 4	130-104, 4	1242-AUTLCY (Wells 8-1, 18-1 & 18-2)
Castle Cove	130-206, 4	130-106, 4	8318-C2FK63 (Wells 4-1, 13-1, 13-2, 30-1 & 30-2)
Cooks Lake	130-205, 4	130-105, 4	3444-C2FJPD (Wells 12-1 & 12-2)
Georgian Bay Estates	130-203, 5	130-103, 5	7784-C25JS9 (Wells 19-1, 19-4 & 19-5)
Lafontaine	130-217, 6	130-117, 5	8620-CLEQ8W (Wells 1-1, 14-1, 2-1, 2-2, 23-1, 23-4
Lefaive	130-201, 4	130-101, 4	3671-CLEMAR (Wells 3-2 & 3-3)
Pennorth	130-215, 4	130-115, 4	6255-C2FKLA (Wells 7-1 & 7-2)
Perkinsfield	130-216, 4	130-116, 4	4638-BDXGHH (Wells 11-2, 22-1, 26-4 & 26-5)
Rayko	130-211, 4	130-111, 4	0152-8WGJ5J (Wells 6-2 & 6-3)
Sawlog	130-207, 4	130-107, 4	1478-BAVHDD (Wells 16-2 & 16-3)
Tee Pee Point	130-208, 4	130-108, 4	5425-ASJSCZ (Wells 9-1 & 9-2)
Thunder Bay	130-209, 4	130-109, 4	3414-9LKNZG (Wells 20-1 & 20-2)
Vanier Woods	130-213, 4	130-113, 4	2308-CLEKH7 (Wells 15-1 & 15-2)
Whippoorwill	130-212, 4	130-112, 4	6857-BCSNCG (Wells 21-1 & 21-2)
Woodland Beach	130-210, 4	130-110, 4	2368-8W8FXA (Wells 25-1 & 25-2)
Wyevale	130-202, 4	130-102, 4	5631-9YLP6S (Wells 17-1, 17-2, 17-3, 29-1 & 29-2)

2.2.2 Serviced Population

Table 2 shows the current number of connections and the population served by each DWS, as well as the projected future serviced population, which includes both year-round and seasonal residents. The assumed home occupancy is 2.4 ppu. The number of projected serviced lots in each system was provided by township staff. It is expected to represent the anticipated growth in the next 20 years.

Table 2: Population and Growth by Drinking Water System

DRINKING WATER SYSTEM	EXISTING		PROJECTED	
	CONNECTIONS	SERVICED POPULATION	CONNECTIONS	SERVICED POPULATION
Bluewater	322	773	412	1,027[1]
Castle Cove	168	403	266	659[1]
Cooks Lake	92	221	103	258[1]
Georgian Bay Estates	255	612	349	868[1]
Lafontaine	869	2,115	1,015	2,617[1]
Lefaive	69	166	87	217[1]
Pennorth	32	77	39	97[1]
Perkinsfield	209	502	219	526
Rayko	42	101	52	130[1]
Sawlog Bay	51	122	70	174[1]
Tee Pee Point	94	226	97	233
Thunder Bay	24	58	37	92[1]
Vanier Woods	73	175	103	256[1]
Whippoorwill	71	170	73	175
Woodland Beach	37	89	45	112[1]
Wyevale	291	698	312	749
Totals	**2,699**	**6,508**	**3,279**	**8,190**

Note 1: A 5% allowance was added to the projected populations of Bluewater, Castle Cove, Georgian Bay Estates, Lafontaine (Georgian Sands), Lefaive, Pennorth, Rayko, Sawlog Bay, Thunder Bay, Vanier Woods and Woodland Beach

The total currently serviced population is estimated at 6,479. It is projected to increase to 8,190, or by 1,682 persons, as 580 lots within the serviced areas are built or connected.

Conversion of small cottages into larger homes is anticipated to increase the serviced population and associated water demands. A 5% increase in population was added to allow for the conversion to larger homes for the Bluewater, Castle Cove, Georgian Bay Estates, Lafontaine, Lefaive, Pennorth, Rayko, Sawlog Bay, Thunder Bay, Vanier Woods and Woodland Beach DWS.

2.3 WATER CONSUMPTION RATES

Water consumption rates calculated from the last three years of flow data (2020 - 2022) and assuming the serviced population did not change over this period, are shown in Table 3.

Table 3: Per Capita Water Consumption (2020- 2022)

DRINKING WATER SYSTEM	WATER USAGE (L/p/day)
Bluewater	303
Castle Cove	341
Cooks Lake	404
Georgian Bay Estates	342
Lafontaine	491
Lefaive	203
Pennorth	206
Perkinsfield	381
Rayko	272
Sawlog Bay	221
Tee Pee Point	217
Thunder Bay	288
Vanier Woods	223
Whippoorwill	511
Woodland Beach	326
Wyevale	385
Average	**320**

Average daily water consumption rates in Tiny range from 203 L/p/day in Lefaive to 511 L/p/day in Whippoorwill. The average water consumption is 320 L/p/day. This water consumption is higher than is observed in other area municipalities. For example, the Town of Innisfil's average water consumption was 256 L/p/day in 2012 to 2017 (2018 Master Servicing Plan Update, Tatham).

High water consumption is a contributing factor to water supply and treatment capacity shortfalls at several of the water systems, as is highlighted in this report.

2.4 PROJECTED WATER DEMANDS

The water demands for the past three years (2020 to 2022), as well as the projected water demands for each DWS are summarized in Table 4. Water demand calculations are included in Appendix A. Projected water demands assume that the historical per capita water consumption for each system will not change over time. Projected Maximum Day Demands (MDD) are based on historical flow data. Peak Hour Demands (PHD) are estimated based on suggested peaking factors in Tables 3-1 and 3-3 of the MECP Design Guidelines.

There is a trend in the communities near the Georgian Bay shoreline to convert seasonal residences into year-round homes. This trend is anticipated to impact the timing and frequency of peak water demands and may increase the residents' level of service expectations related to water system reliability and service down time.

Water meters have been installed at homes in Wyevale and will be installed in Perkinsfield. The Township intends to install water meters in more serviced communities to assist in reducing water consumption and to identify non consumptive water uses such as water pipes left running or excessive lawn watering. As per capita water consumption tends to decrease where water meters are installed, the currently projected water demands will be conservative in communities with water metering.

2.5 OVERALL SYSTEM CONDITION

Visual inspections of the 24 water system facilities in the 16 DWS were completed. Operations staff were interviewed on the deficiencies and concerns with each system. The condition and needs and opportunity assessment for each DWS are summarized in the subsequent sections of this report. The water system needs are summarized on Figure 2.

All the township's DWS fully comply with the Ontario requirements under O.Reg.170/03 and O.Reg. 169/03 as amended. They produce and supply safe drinking water to all properties connected to a municipal water system.

Table 4: Existing and Projected Water Demands

DRINKING WATER SYSTEM	WATER USAGE (L/p/day)	EXISTING			PROJECTED		
		POP.	MDD (m^3/day)	Est. PHD (L/s)	POP.	MDD (m^3/day)	PHD (L/s)
Bluewater	303	773	703	11.2	1,027	941	13.5
Castle Cove	341	403	470	7.2	659	764	10.7
Cooks Lake	404	221	380	5.6	258	446	6.5
Georgian Bay Estates	342	612	541	10	868	800	14.2
Lafontaine	491	2,115	1,969	40.6	2,617	2,504	50.3
Lefaive	203	166	242	2.1	217	275	2.8
Pennorth	206	77	63	1.4	97	79	1.7
Perkinsfield	381	502	661	9.1	526	727	10.6
Rayko	272	101	76	1.7	130	98	2.2
Sawlog Bay	221	122	110	1.7	174	156	2.4
Tee Pee Point	217	226	121	3.1	233	125	3.2
Thunder Bay	288	58	80	1.4	92	129	2.3
Vanier Woods	223	175	128	2.4	256	187	3.6
Whippoorwill	511	170	344	5.4	175	355	5.6
Woodland Beach	326	89	130	2.5	112	161	3.1
Wyevale	385	698	865	12.8	749	928	13.8
Totals	**-**	**6,508**	**6,883**		**8,190**	**8,675**	

However, most of the DWS were installed 40 to 60 years ago, therefore some of the equipment, buildings, and wells are nearing the end of their useful life and will require replacement or repairs. The township, through its ongoing maintenance and replacement program, has completed repairs and upgrades, including replacement of corroded piping, valves, and electrical panels at some of the pump houses, but more needs to be done, such as creating separate chlorine rooms to mitigate corrosion, and improving instrumentation and control systems to facilitate operation and control.

Most DWS were originally designed and constructed to be seasonal systems. Their water distribution systems consist of poorly installed, small diameter, thin-wall PVC watermains and services that are now reaching the end of their useful life, resulting in many breaks and leaks.

Some DWS have limited system redundancy and operational flexibility, which makes it challenging to complete necessary maintenance or repairs. Some DWS have limited capacity to supply more than the domestic water demands. As a result, effective flushing of the water distribution system is difficult in those DWS.

Overall, the resiliency of some water systems could be improved. For some systems, a watermain break or an equipment failure could potentially result in an extended water service interruption.

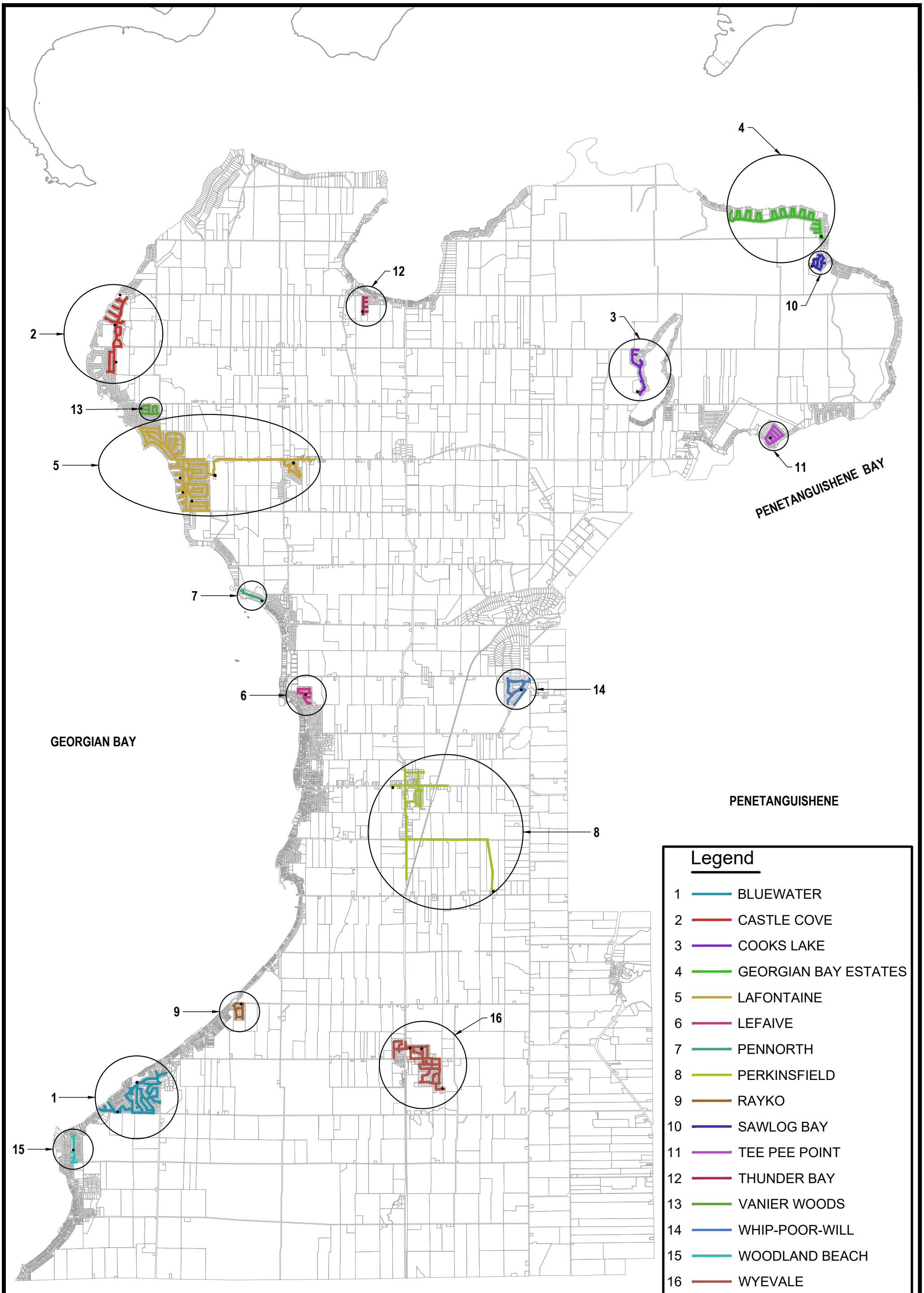
2.6 FIRE PROTECTION

The drinking water systems that were designed for seasonal occupancy communities generally have no treated water storage and were not designed to supply water for fire fighting. The township's fire department utilizes a shuttle service to bring lake water or water from a system with a water storage tank to fight a fire in those communities. Only five of the 16 DWS (Bluewater, Lafontaine, Perkinsfield, Whippoorwill and Wyevale) are designed to provide some level of fire protection.

Where the DWS includes water storage, typically the volume does not meet current MECP design guidelines based on the serviced population. Further, the water distribution pumps have limited capacity to pump higher flows needed to fight a fire.

The township has indicated that while continuing to provide some level of fire protection via the municipal water systems is important, it is not a primary objective of the Master Plan. However, increasing the level of service for fire protection needs to be considered, including:

- Maintain the current level of service (status quo).
- Upgrade the systems that have fire storage and hydrants to MECP guidelines.
- Upgrade all water systems to provide fire protection.



Legend

1	BLUEWATER
2	CASTLE COVE
3	COOKS LAKE
4	GEORGIAN BAY ESTATES
5	LAFONTAINE
6	LEFAIVE
7	PENNORTH
8	PERKINSFIELD
9	RAYKO
10	SAWLOG BAY
11	TEE PEE POINT
12	THUNDER BAY
13	VANIER WOODS
14	WHIP-POOR-WILL
15	WOODLAND BEACH
16	WYEVALE

TATHAM ENGINEERING

TOWNSHIP OF TINY
WATER SYSTEMS

DWG. No. **FIG. 1**

SCALE: 1:60,000 | DATE: JUL/2023 | JOB NO. 123142

4. GEORGIAN BAY ESTATES:
- REPLACE WELLS
- INCREASE DISTRIBUTION SYSTEM LOOPING

2. CASTLE COVE:
- BACKUP TO WELL 4-1
- OR, UPGRADE PH 13 OR PH 30 TO MATCH PTTW
- ELECTRICAL REPAIRS AT PH 4

12. THUNDER BAY:
- INSTALL WATER METERS TO REDUCE CONSUMPTION, SO SYSTEM REMAINS ADEQUATE FOR PROJECTED DEMANDS

3. COOK'S LAKE:
- INSTALL WATER METERS
- REPLACE SMALL WELL WITH HIGH CAPACITY WELL
- EXPAND RESERVOIR IF WATER CONSUMPTION NOT REDUCED
- ADD HIGH LIFT PUMPS

10. SAWLOG BAY:
- ADD CHLORINE CONTACT TANK FOR OPERATION FLEXIBILITY
- UPGRADE PH 16 PROCESS AND ELECTRICAL EQUIPMENT

13. VANIER WOODS:
- DWS IN GOOD CONDITION
- NO CAPACITY SHORTFALLS

5: LAFONTAINE:
- INSTALL WATER METERS

LOWER ZONE
- ADD WELL
- ADD TREATMENT & PUMPING CAPACITY
- REPLACE ELECTRICAL PANELS AT PH 2

UPPER ZONE
- EXPAND RESERVOIR & HIGH LIFT PUMPS AT PH 23 TO MEET MECP FIRE FLOW
- REPLACE PIPING AT PH 23
- UPGRADE BPS 14 COMMUNICATION SYSTEM

11. TEE PEE POINT:
- INCREASE SYSTEM CAPACITY
- UPGRADE PH 9 EQUIPMENT

PENETANGUISHENE BAY

7. PENNORTH
- PH 7 PIPING UPGRADES & REMOVE ASBESTOS

14. WHIPPOORWILL:
- EXPAND STORAGE AND PUMPING TO PROVIDE MECP FIRE FLOW
- INSTALL WATER METERS

6. LEFAIVE:
- GOOD CONDITION
- NO CAPACITY SHORTFALLS

GEORGIAN BAY

8. PERKINSFIELD:
- CONNECT WELL 26-4 FOR FIRM CAPACITY
- ADD GENERATOR AT PH 22
- UPGRADE PH 22 & PH 26 TO ADDRESS CORROSION ETC.
- FIND SOLUTION TO REDUCE THM AT PH 26
- REPLACE UNDERSIZED WATERMAINS

PENETANGUISHENE

9. RAYKO:
- ADD WELL
- INSTALL WATER METERS

16. WYEVALE
- EXPAND STORAGE & PUMPING TO MEET MECP FIRE FLOW

1. BLUEWATER:
- EXPAND STORAGE TO MEET MECP FIRE FLOWS
- REPAIR/REPLACE ATS AT PH 18
- ADD GENERATOR AT PH 8

15. WOODLAND BEACH:
- DWS IN GOOD CONDITION
- NO CAPACITY SHORTFALLS

Legend

1 BLUEWATER
2 CASTLE COVE
3 COOKS LAKE
4 GEORGIAN BAY ESTATES
5 LAFONTAINE
6 LEFAIVE
7 PENNORTH
8 PERKINSFIELD
9 RAYKO
10 SAWLOG BAY
11 TEE PEE POINT
12 THUNDER BAY
13 VANIER WOODS
14 WHIP-POOR-WILL
15 WOODLAND BEACH
16 WYEVALE

TATHAM ENGINEERING

TOWNSHIP OF TINY
WATER SYSTEM NEEDS

DWG. No. FIG. 2

SCALE: 1:60,000 | DATE: JUL/2023 | JOB NO. 123142

3 Bluewater

3.1 WATER SYSTEM DESCRIPTION

The Bluewater DWS is classified as a Large Municipal Residential System as per O.Reg. 170/03. It services 322 homes in the communities of Deanlea Beach and Bluewater Beach. The DWS consists of the following main components:

- 2 well pump stations (PH 8 and PH 18)
- 3 groundwater wells (18-1, 18-2 and 8-1)
- 1 treated water reservoir

The Bluewater DWS storage reservoir and water distribution system are designed to provide a water supply for fire protection.

The groundwater supply for the Bluewater DWS has good raw water quality.

Pumphouse 8

PH 8 was built in 1971 and is located at 1490 Tiny Beaches Road South, along Concession 4 West. It is supplied by one well (well 8-1) located adjacent to the pumphouse.

The pumphouse houses a chlorination system, a chlorine contact pipe, and three pressure tanks. There is no stand-by generator at this pumphouse.

Pumphouse 18

PH 18 is the primary water supply for the DWS. It was commissioned in 1979 and is located at 70 Nicole Boulevard, near Deanlea Beach. PH 18 is supplied by wells 18-1 and 18-2 adjacent to the pumphouse.

The pumphouse components consist of two high-lift pumps and one jockey pump, seven pressure tanks, a chlorination system, a chlorine contact pipe, a below-ground treated water reservoir, and an indoor natural gas generator.

The automatic transfer switch for the generator needs repair or replacement as it causes the generator to run without automatic shutdown.

3.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Bluewater community is anticipated to occur as a result of the development of the remaining 90 currently vacant lots. Due to the trend for property owners to upgrade their small

cottages into larger homes, a 5% allowance has been added to plan for the potential increase in water demands. The existing and projected water demands are summarized in Table 5.

Table 5: Bluewater Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	322	773	703	11.2
Projected	412	989	904	
With 5% increase in occupancy		1,027	941	13.5

3.3 CAPACITY ASSESSMENT

The Bluewater DWS includes a water reservoir at PH 18 that could provide equalization, fire and emergency storage. The well supply and treatment systems therefore should have, as a minimum, the capacity to meet the MDD. The high lift pumps at PH 18 need to have capacity to supply the PHD.

Table 6 summarizes the supply, pumping, and storage capacity assessment. With both pumphouses in service, the firm supply and treatment capacity of the DWS is sufficient to meet the projected MDD. However, the capacity assessment should consider the redundancies of each pumphouse. PH 18 has redundant well supply, treatment, and pumping capacities. Although PH 8 has some treatment system redundancy, it has only one well. Only PH 18 has a backup power supply. In the event of a power outage, PH 8 is effectively out of service and water can only be supplied to the system by PH 18. In this scenario, both wells 18-1 and 18-2 would need to operate to meet the projected MDD. The PTTW does not allow both wells to run concurrently.

The existing water storage volume of 318 m^3 is less than is suggested by the MECP Design Guidelines for fire protection, equalization, and emergency. MECP Design Guidelines suggest that storage should provide a fire flow of 64 L/s for 2 hours. The total required storage volume for the future water demands is 581 m^3.

Table 6: Bluewater DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	1,176.5 m^3/day[1]	MDD: 941 m^3/day	235 m^3/day
Treatment	1,176.5 m^3/day[2]	MDD: 941 m^3/day	235 m^3/day
Distribution Pumping	25.1 L/s[3]	PHD: 13.5 L/s	11.6 L/s
Storage	318 m^3	581 m^3	(263 m^3)

Notes:
1. Well firm capacity (PTTW) with largest well (18-1 or 18-2) out of service
2. Rated capacity (MDWL) of PH 8 and PH 18
3. Rated capacity with one high lift pump out of service + rated capacity (MDWL) of PH 8

3.4 WATER SYSTEM NEEDS SUMMARY

In summary, the Bluewater DWS needs are as follows for the projected growth:

- Additional treated water storage at PH 18 to improved fire protection through the municipal water distribution system, if required by the Fire Department.
- Add a standby well at PH 8 to provide sufficient firm capacity add redundancy.
- Addition of a back-up generator at PH 8 to improve the system resiliency.
- Repair or replacement of the automatic transfer switch for the generator at PH 18.

4 Castle Cove

4.1 WATER SYSTEM DESCRIPTION

The Castle Cove DWS is classified as a Large Municipal Residential System as per O.Reg. 170/03. It was formed by the combination of the Georgian Highlands, Sand Castle, and Tiny Cove systems. It services 168 homes near the Georgian Bay shoreline north of Lafontaine. The system consists of the following main components:

- 3 well pump stations (PH 4, PH 13, and PH 30)
- 5 groundwater wells (Wells 4-1, 13-1, 13-2, 30-1 and 30-2)

The Castle Cove DWS is a direct pumping system that does not have capacity to provide water supply for fire protection. The system has no treated water storage, and the hydrants are used only for distribution system flushing and maintenance.

Pumphouse 4

PH 4 was built in 1969 and is located at 953 Concession 19 West. It is supplied by one well (well 4-1) located across the road at the site of the previous pumphouse building. The old building and piping in the pumphouse were replaced in 2018.

The new pumphouse houses four pressure tanks, a chlorination system, and a chlorine contact pipe. Standby power is provided by an outdoor natural gas generator located across the road.

The well runs from 1:30 pm to 9:30 pm daily. There are issues with the electrical power supply as the electrical overloads need regular replacement.

Pumphouse 13

PH 13 was built in 1974. It is located at 3 Edward Drive. PH 13 is supplied by wells 13-1 and 13-2 adjacent to the pumphouse.

In the pumphouse there are four pressure tanks, a chlorination system, and a chlorine contact pipe. There is no standby generator. The wells run from 7:00 am to 1:30 pm daily.

Pumphouse 30

PH 30 was built in 2009 and began operation in 2012. It located at 1888 Tiny Beaches Road North. PH 30 is supplied by wells 30-1 and 30-2 on the adjacent lot (1880 Tiny Beaches Road North).

The pumphouse components consist of five pressure tanks, a chlorination system, a chlorine contact pipe, and an outdoor natural gas generator set.

Nitrate levels in wells 13-1 and 13-2 are gradually rising but remain below the Drinking Water Standard of 10 mg/L.

4.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the community served by the Castle Cove DWS is anticipated to be from the development of 98 currently vacant lots. Due to the trend to upgrade small cottages into larger homes, a 5% allowance has been added to account for the expected increase in population. Table 7 summarizes the existing and projected water demands.

Table 7: Castle Cove Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	168	403	470	7.2
Projected	266	638	741	
With 5% increase in occupancy		659	764	10.7

4.3 CAPACITY ASSESSMENT

The Castle Cove DWS consists of 3 pumphouses that directly pump into the distribution system without any storage. The wells and treatment systems therefore need to have enough capacity to meet the PHD. Table 8 summarizes the supply and treatment capacity assessment.

With all three pumphouses in operation, there is sufficient capacity to meet the projected PHD. Two scenarios were considered to assess firm capacity:

- With the largest well (well 4-1) out of service and PH 4 out of operation, the firm groundwater supply capacity, considering that wells 30-1 and 30-2 are not allowed to run together, is 13.1 L/s, which is sufficient, as shown in Table 8. However, the available treatment capacity with only PH 13 and PH 30 in operation, based on the rated capacities in the MDWL, is 704 m^3/day (8.1 L/s), which is less than the projected PHD.
- In the event of a power failure, during which PH 13 would not contribute as it does not have stand-by power, the groundwater supply capacity of the remaining wells 4-1 and 30-1 or 30-2 would be 12.8 L/s, which is sufficient. The treatment capacity of PH 4 and PH 30 would be 966 m^3/day (11.1 L/s), which is also sufficient.

Therefore, further review of the treatment facilities at PH 13 and PH 30 is required to determine if their rated capacity could be increased to match the PTTW for their wells. Alternatively, an additional well at PH 4 would provide the redundancy needed to ensure PH 4 can contribute to maintaining an adequate supply at Castle Cove.

Table 8: Castle Cove DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	13.1 L/s[1]	PHD: 10.7 L/s	2.4 L/s
Treatment	8.1 L/s[2]	PHD: 10.7 L/s	(2.6 L/s)

Notes:
1. Well firm capacity (PTTW) with largest well (well 4-1) out of service
2. Rated capacity (MDWL) of PH 13 and PH 30

4.4 WATER SYSTEM NEEDS SUMMARY

In summary, the Castle Cove DWS needs are as follows for the projected growth:

- Backup well for well 4-1 to provide redundancy to meet the future demands.
- Or, upgrade PH 13 or PH 30 to match the PTTW capacity of their wells.
- Electrical repairs at PH 4.

5 Cook's Lake

5.1 WATER SYSTEM DESCRIPTION

The Cook's Lake DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. It services 92 homes along the west shore of Farlain Lake. The system consists of the following main components:

- 1 well pump station (PH 12)
- 2 groundwater wells (wells 12-1 and 12-2)
- 1 reservoir (not in service)

The Cook's Lake DWS is a direct pumping system that does not have capacity to provide water supply for fire protection. The system currently has no water storage as the 100 m^3 tank is not in service, and the hydrants are used only for distribution system flushing and maintenance.

PH 12 was built in 1974 and is located at 8 Timcourt Drive. Wells 12-1 and 12-2 are adjacent to the pumphouse. The township noted that the well pumps have frequent starts and stops, which is reducing motor life and causing frequent pump and motor replacements. One of the wells has a small diameter (150 mm) and is not plumb, making it difficult to remove the pump and level probe during maintenance. The other well is a 200 mm diameter well that was built to municipal standards. Its water well record indicates it could yield much more water than it is currently.

The pumphouse contains five pressure tanks, a chlorination system, a chlorine contact pipe, and an outdoor natural gas generator. The building is in good condition.

The reservoir was also constructed in 1974 but was never put in service. Upgrades are planned to bring the reservoir online and install high lift pumps.

The pumphouse is at the low end of the distribution system, which has a large elevation range. As a result, the pumphouse cannot be taken offline for an extended period without the system pressure dropping quickly.

The raw water quality is considered to be good.

5.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Cook's Lake community that is serviced by the DWS is anticipated to be from the development of 11 currently vacant lots. Projected water demands are summarized in Table 9.

These water demands are calculated based on the average water consumption for the past three years of 404 L/p/day. This usage rate is among the highest in the township. A leak detection

program has slightly reduced water consumption, from 412 L/p/day in 2020 to 397 L/p/day in 2022.

Table 9: Cook's Lake Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	92	221	380	5.6
Projected	103	247		
With 5% increase in occupancy		258	446	6.5

Some of the unserviced homes on the shore of Farlain Lake use a lake intake for their water supply. This is a concern as there has been toxic blue-green algae blooms on the lake that would negatively affect water quality for drinking. The number and location of these lake water supplies need to be considered to determine if the Cook's Lake DWS could be extended to them.

5.3 CAPACITY ASSESSMENT

The capacity of the Cook's Lake DWS was assessed for two scenarios: under the current configuration (without operating storage), and assuming the existing storage tank is brought online.

5.3.1 Current Configuration

The Cook's Lake DWS currently operates as a direct pumping system without treated water storage. Therefore, the well supply and treatment system needs to have capacity to meet the PHD.

Currently, both wells are needed to meet the PHD. As shown in Table 10, the well firm capacity and the treatment system's rated capacity are insufficient to meet the projected PHD. Operating both wells concurrently will also not meet the projected PHD.

Table 10: Cook's Lake DWS Capacity Assessment – Current Configuration

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	2.3 L/s	PHD: 6.5 L/s	(4.2 L/s)
Treatment	2.3 L/s	PHD: 6.5 L/s	(4.2 L/s)

Notes:
1. Well firm capacity (PTTW) with largest well (well 12-1 or 12-2) out of service
2. Rated capacity (MDWL) of PH 12

5.3.2 With Storage

If the existing water storage tank is brought online and high lift pumps are installed, the supply and treatment system only needs to meet the projected MDD, and the storage tank should provide equalization volume to supply the peak demands.

As shown in Table 11, to sustain the high water consumption in Cook's Lake, an additional well and an increase in the rated capacity of the treatment system will be needed to supply the projected MDD. The existing reservoir is also too small based on MECP Guidelines.

Table 11: Cook's Lake DWS Capacity Assessment – With Equalization Storage

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	200 m^3/day[1]	MDD: 446 m^3/day	(246 m^3/day)
Treatment	200 m^3/day[2]	MDD: 446 m^3/day	(246 m^3/day)
Pumping		PHD: 6.5 L/s	(6.5 L/s)
Storage	100 m^3	153 m^3	(53 m^3)

Notes:
1. Well firm capacity (PTTW) with largest well (well 12-1 or 12-2) out of service
2. Rated capacity (MDWL) of PH 12

5.4 WATER SYSTEM NEEDS SUMMARY

In summary, the Cook's Lake DWS needs the following to serve the existing service area:

- Monitoring water consumption, and installation of water meters.
- Replacement of the small well with a high capacity well to increase firm capacity.
- Increase in the permitted capacity of the large well.
- If water consumption is not reduced, expansion of the reservoir to provide adequate equalization volume, and addition of high lift pumps.
- If water consumption is reduced, the existing reservoir may be sufficient and only high lift pumps need to be added.

Further:

- Consideration of expansion of the DWS and water distribution system to extend the service area to homes that have lake water supplies.

6 Georgian Bay Estates

6.1 WATER SYSTEM DESCRIPTION

The Georgian Bay Estates DWS is a Large Municipal Residential System. It services 255 homes along the Georgian Bay shoreline in the northeast of the township, near the Sawlog Bay DWS. The system consists of the following main components:

- 1 well pump station (PH 19)
- 3 groundwater wells (19-1, 19-4 and 19-5)
- 1 underground reservoir

The DWS is designed to provide water supply for fire protection.

PH 19 was built in 1979. It is located at 2107 Champlain Road. It is supplied by three wells: Well 19-1 is adjacent to the pumphouse, while wells 19-4 and 19-5 are GUIDI wells located at 181 Sawlog Point Road near Georgian Bay. The wells have issues as noted below.

The pumphouse contains three high-lift pumps, one jockey pump, seven pressure tanks, a chlorination system, a polyphosphate sequestering system, a UV disinfection system, and a chlorine contact pipe. The reservoir is underneath the pumphouse. An outdoor natural gas generator set adjacent to the building provides stand-by power.

The township indicated the UV units are nearing the end of their useful life. It was also noted there are issues with the electrical power supply to the pumphouse, resulting in frequent burn-out of the high lift pumps. The township plans to replace the UV units and upgrade the electrical system in 2024.

The configuration of the water distribution system, consisting of a single long trunk watermain extending from the pump house, presents a risk of extended water service interruption in the event of a watermain break. This concern is compounded by the poor installation of the distribution pipes, valves, and service connections with coarse rock bedding instead of granular material.

6.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Georgian Bay Estates water system is anticipated to consist of the development of 94 currently vacant lots. An allowance has been added to account for the conversion to large homes corresponding to a 5% increase in population.

Table 12 summarizes the current and projected water demands.

Table 12: Georgian Bay Estates Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	255	612	541	10
Projected	94	838	769	
With 5% increase in occupancy		868	800	14.2

6.3 CAPACITY ASSESSMENT

The Georgian Bay Estates DWS includes storage and high lift pumps designed to provide equalization of peak hour demands. The well supply and treatment systems need to have the capacity to provide the MDD. The high lift pumping capacity needs to be sufficient to provide the PHD. Table 13 summarizes the system's firm capacity and required capacity to meet the projected water demands.

With all three wells in service, which is allowed under the PTTW, the well supply is sufficient to meet the projected MDD. However, the wells cannot operate at their permitted rates because of issues including a partial well screen collapse, sand production, and an unrecoverable decline in well yield. Further, the firm supply capacity, with the largest well out service, is insufficient to meet the MDD.

The rated treatment and pumping capacities from the MDWL and DWWP indicate PH 19 has adequate capacity for the projected growth in Georgian Bay Estates. There is also a surplus in storage capacity.

Table 13: Georgian Bay Estates DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	524 m^3/day[1]	MDD: 800 m^3/day	(276 m^3/day)
Treatment	950 m^3/day[2]	MDD: 800 m^3/day	150 m^3/day
Distribution Pumping	30 L/s[3]	14.2 L/s	15.8 L/s
Storage	780 m^3	597 m^3	183 m^3

Notes:
1. Well firm capacity (PTTW) with largest well (well 19-1) out of service
2. Rated capacity (MDWL) of PH 19
3 Rated capacity with 2 HLPs (DWWP)

6.4 WATER SYSTEM NEEDS SUMMARY

The Georgian Bay Estates DWS needs are summarized as follows:

- Replacement of the wells due to their condition. Ensure there is redundancy to increase the system resiliency in the event one well must be taken out of service.
- Modify the water distribution system configuration to increase looping to improve resiliency, if possible.

7 Lafontaine

7.1 WATER SYSTEM DESCRIPTION

The Lafontaine DWS is classified as a Large Municipal Residential System as per O.Reg. 170/03. It services 881 homes and businesses in the communities of Lafontaine and Georgian Sands. The system consists of the following main components:

- 4 well pump stations (PH 1, PH 2, PH 14 and PH 23)
- 6 groundwater wells (1-1, 2-1, 2-2, 14-1, 23-1 and 23-4)
- 1 elevated storage tank (R 14)
- 1 booster pumping station (BPS 14) and valve house
- 1 below-ground reservoir (at PH 23)

The distribution system is divided into two pressure zones: a higher elevation pressure zone in Lafontaine, and a lower pressure zone in Georgian Sands. Water can be supplied from the lower zone to the upper zone via BPS 14, but the lower zone cannot be back fed from the upper zone.

The Georgian Sands water system was originally designed to service seasonal residences and small cottages, but now provides year-round service.

7.1.1 Lower Pressure Zone (Georgian Sands)

Pumphouse 2

PH 2, located at 5 Cranbrooke Court, is supplied by wells 2-1 and 2-2, which are located inside the partly below grade structure. In addition to the two wells, the pumphouse contains two pressure tanks, a chlorination system, and a chlorine contact pipe. PH 2 is equipped with a portable generator receptacle and an automatic transfer switch.

Well 2-1 is the highest capacity well in the Lafontaine DWS.

PH 2 has been recently upgraded with stainless-steel piping and cast-iron valves and a flow meter. However, the electrical panels are corroded and need to be replaced.

Pumphouse 1

PH 1, located at 6 Rue de Parc, is supplied by well 1-1, which is located inside the partly below grade structure. Well 1-1 discharges to PH 14.

The township replaced well 1-1 in 2024 due to its age and because parts of the well casing were removed during recent rehabilitation work. The new well is expected to be of the same capacity

as well 1-1. A new stainless-steel electrical cabinet has been installed outside PH 1. It will contain the electrical and control panels for the replacement well.

Pumphouse 14

PH 14, located at 36 Wolfe Trail, is supplied by well 14-1 and well 1-1. Groundwater from well 1-1 is added to reduce the concentration of nitrate from well 14-1. Well 14-1 operates at about half of its rated capacity to manage nitrate levels.

PH 14 consists of a static mixer, two pressure tanks, a chlorination system, a receptacle for a portable generator and an automatic transfer switch.

Elevated Tank and Booster Pumping Station 14

The Lafontaine elevated tank and BPS 14 are located at 595 Lafontaine Road West. Water is supplied to the elevated tank from PH 2 and PH 14. The elevated tank feeds water by gravity to the lower pressure zone (Georgian Sands).

BPS 14 pumps water from the elevated tank to PH 23 in the upper pressure zone (Lafontaine), whenever the PH 23 pumps are in operation. BPS 14 houses two booster pumps, two pressure tanks, and a portable generator and manual transfer switch.

Township staff noted concerns with the volume of the reservoir. They reported it was emptied in about 12 hours during a recent emergency outage at PH 23. The Township noted that the lower zone supply cannot be taken out of service for any extended period.

The township also noted issues with communication of monitoring and alarms.

7.1.2 Upper Pressure Zone (Lafontaine)

Pumphouse 23

PH 23 is located at 169 Rue Eric in Lafontaine. PH 23 is supplied by wells 23-1 and 23-4, in addition to water pumped from the elevated tank by BPS 14 through the valve house, to blend the groundwaters and reduce the nitrate concentrations.

PH 23 consists of a below-ground reservoir, two high lift pumps and a submersible jockey pump, four pressure tanks, a chlorination system, and an outdoor standby generator. The Township noted the presence of corroded piping.

PH 23 is the only supply pumphouse for the community of Lafontaine. The current valve and piping arrangement does not allow for water to be supplied from BPS 14 when PH 23 is offline.

7.2 RAW WATER QUALITY

The groundwater from most wells has elevated or increasing nitrate levels.

- Well 1-1 nitrate concentrations are low and within the ODWS.
- Wells 2-1 and 2-2 have elevated nitrate levels, but within the ODWS.
- Wells 23-1 and 23-4 have elevated nitrate levels, but within the ODWS.
- Well 14-1 has elevated nitrate levels and they are increasing, but within the ODWS.

7.3 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Lafontaine DWS is anticipated to consist of the development of 146 vacant lots (137 in Georgian Sands, and 28 in Lafontaine). As there is a trend for property owners to upgrade their small cottages into larger homes, a 5% allowance has been added to the projected population to account for the conversions.

The water consumption rate in the Lafontaine DWS is among the highest in the township, averaging 491 L/p/day in the past three years.

Table 14 summarizes the existing and projected populations and water demands.

Table 14: Lafontaine Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Lower Zone (Georgian Sands)				
Existing	814	1,954	1,794	43.8
Projected	951	2,288		
With 5% increase in occupancy		2,381	2,130	52.0
Upper Zone (Lafontaine)				
Existing	67	161	201	3.1
Projected	95	228		
With 5% increase in occupancy		236	295	4.5
Total Projections	1,046	2,617	2,504	50.3

7.4 CAPACITY ASSESSMENT

The Lafontaine DWS was assessed by pressure zone.

7.4.1 Lower Pressure Zone (Georgian Sands)

The Lafontaine DWS lower pressure zone includes storage designed to provide equalization of peak hour demands and provide water supply for fire protection. The well supply and treatment systems need to have the capacity to provide the MDD. Table 15 summarizes the supply and treatment capacity assessment. Two scenarios were considered to assess firm capacity:

- The firm well supply, with the largest well (well 2-1) out of service, considering well 14-1 can only operate at half its capacity, is 1508 m^3/day, which is not sufficient to meet the future MDD in Georgian Sands, as shown in Table 15. Further, the
- With well 1-1 out of service, well 14-1 and pH 14 would not be able to contribute since well 1-1 and well 14-1 need to operate together to manage nitrate levels, the groundwater supply capacity of the remaining wells 2-1 and 2-2 would be 1506 m^3/day, which is insufficient. Likewise, the treatment capacity of PH 2 alone is 1506 m^3/day, which is also insufficient.

There is also a shortfall in the storage volume to meet future peak demands and fire flows based on MECP guidelines. Additional storage will need to be considered.

The above analysis was completed considering the 2022 volume of water pumped to the upper pressure zone in Lafontaine, and that the lower zone does not benefit from the upper zone (PH 23) groundwater supply.

Table 15: Lafontaine DWS Lower Pressure Zone Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	1,508 m^3/day[1]	MDD: 2,130 m^3/day	(622 m^3/day)
Treatment	1,506 m^3/day[2]	MDD: 2,130 m^3/day	(624 m^3/day)
Storage	1,293 m^3 [3]	1,521 m^3	(228 m^3)

Notes:
1. Well firm capacity (PTTW) with largest well (well 14-1) out of service
2. Rated capacity (MDWL) of PH 2 (PH 14 offline)
3 Elevated tank storage volume

7.4.2 Upper Pressure Zone (Lafontaine)

The upper pressure zone water system includes an underground reservoir and high lift pumps; therefore, the groundwater supply needs only to meet the MDD, and the reservoir and pumps must be capable of supplying the PHD and fire flows.

Table 16 summarizes the capacity assessment for the upper zone. It considers that the PH 23 supply is supplemented by water pumped from BPS 14 to adjust the water quality. The water supply to the reservoir is adequate to meet the projected water demands in Lafontaine. However, the reservoir does not meet the MECP guidelines for fire protection.

Table 16: Lafontaine DWS Upper Zone Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	1,047 m^3/day[1]	MDD: 489 m^3/day	558 m^3/day
Treatment	1,301 m^3/day[2]	MDD: 489 m^3/day	812 m^3/day
Distribution Pumping	12.5 L/s[3]	PHD: 4.5 L/s	8 L/s
Storage	108 m^3 [3 4]	342 m^3	(234 m^3)

Notes:
1. Well firm capacity (PTTW) with Well 23-1 out of service + Flow from BPS 14
2. Rated capacity (MDWL) of PH 23 + Flow from BPS 14
3 Two high lift pumps in operation. Largest pump off.
4 In-ground tank storage volume

7.5 WATER SYSTEM NEEDS SUMMARY

Based on the above assessment, the Lafontaine DWS needs are as follows:

- In lower zone (Georgian Sands):
  - Additional groundwater supply capacity and associated pumphouse capacity to improve redundancy and operating flexibility. New well supply should have low nitrate levels.
  - Consider the available storage volume in the elevated tank once the well supply capacity has been increased to confirm it meets fire protection needs.
  - Upgrades at BPS 14 to improve communication of monitoring and alarms.
  - Upgrades at PH 2, including replacement of corroded electrical panels.
- In the upper zone (Lafontaine):
  - Additional treated water storage volume to meet the future requirements.
  - Twin the largest pump for redundancy.
  - Upgrades at PH 23 to replace corroded piping.

8 Lefaive

8.1 WATER SYSTEM DESCRIPTION

The Lefaive DWS is a Small Municipal Residential System as per O.Reg. 170/03. It services 69 homes near the Georgian Bay shoreline, between Concession 11 West and Concession 12 West. The DWS consists of the following main components:

- 1 well pump station (PH-3)
- 2 groundwater wells (wells 3-2 and 3-3)

The Lefaive DWS does not provide water supply for fire protection. The system has no storage and there are no hydrants. Distribution system flushing and maintenance is facilitated by five blow-offs.

The original PH 3 building located at 47 Fernanne Drive was demolished in 1992 when the current building was commissioned. PH 3 is supplied by wells 3-2 and 3-3, which are next to the driveway to the pumphouse. Well 3-1 was abandoned in 2002.

The pumphouse contains five pressure tanks, a chlorination system, a chlorine contact pipe, and an outdoor natural gas generator behind the building. The water distribution system consists of old, small diameter, thin-walled watermains, which are scheduled for replacement in 2024 to coincide with road resurfacing.

Raw water quality is good other than elevated levels of hardness, iron, and manganese, which affect the aesthetic quality.

8.2 PROJECTED GROWTH AND WATER DEMANDS

Growth is anticipated to be from the remaining 18 vacant lots. As there is a trend for property owners to upgrade their small cottages into larger homes, a 5% allowance has been added to the projected population. Table 17 summarizes the existing and projected water demands.

Table 17: Lefaive Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	69	166	242	2.1
Projected	87	209	270	2.7
With 5% increase in occupancy		217	275	2.8

8.3 CAPACITY ASSESSMENT

As the Lefaive DWS does not include any storage, the well supply and treatment system needs to have enough capacity to meet the PHD. As shown in Table 18, the firm well supply capacity, without the largest well (well 3-2), and the rated treatment capacity, are sufficient to meet the future PHD.

Table 18: Lefaive DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	3.3 L/s[1]	PHD: 2.8 L/s	0.5 L/s
Treatment	3.6 L/s[2]	PHD: 2.8 L/s	0.8 L/s

Notes:
1. Well firm capacity (PTTW) with largest well (well 3-2) out of service
2. Rated capacity (MDWL) of PH 3

8.4 WATER SYSTEM NEEDS SUMMARY

The Lefaive DWS is in generally good condition and there are no current or future capacity shortfalls.

9 Pennorth

9.1 WATER SYSTEM DESCRIPTION

The Pennorth DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. It services 32 homes near Wahnekewaning Beach on the Georgian Bay shoreline, between Concession 13 West and Concession 14 West. The system consists of:

- 1 well pump station (PH 7)
- 2 groundwater wells (wells 7-1 and 7-2)

The Pennorth DWS is not designed to provide water supply for fire protection. The system has no storage and there are no hydrants. Distribution system flushing and maintenance is facilitated by two blow-offs.

PH 7 was built in 1970 and is located at 6 Lackie Crescent. Wells 7-1 and 7-2 are adjacent to the pumphouse. The pumphouse has three pressure tanks, a chlorination system, and a chlorine contact pipe. The system has an outdoor natural gas generator.

Asbestos is known to be present in the pumphouse walls and ceiling. Some of the pumphouse piping and valves and electrical equipment has been updated, however further upgrades are needed to improve redundancy in the piping.

The configuration of the water distribution system, consisting of a single trunk watermain extending from the pump house, presents a risk of extended water service interruption in the event of a watermain break, emergency, or maintenance.

9.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Pennorth DWS is anticipated to occur from the development of the remaining 7 vacant lots. A 5% allowance has been added to the projected population to account for the conversions from cottages to residences.

Table 19 summarizes the existing and projected water demands.

Table 19: Pennorth Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	32	77	63	1.4
Projected	39	94		
With 5% increase in occupancy		97	79	1.7

9.3 CAPACITY ASSESSMENT

The Pennorth DWS does not include any storage. The well supply and treatment system therefore need to have the capacity to supply the PHD. As shown in Table 20, there is a marginal shortfall in supply and treatment capacity when compared to the estimated PHD, which is estimated using a conservative peaking factor of 7.4 (MECP Guidelines).

Table 20: Pennorth DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	1.6 L/s[1]	PHD: 1.7 L/s	(0.1 L/s)
Treatment	1.6 L/s[2]	PHD: 1.7 L/s	(0.1 L/s)

Notes:
1. Well firm capacity (PTTW) with largest well (well 7-1 or 7-2) out of service
2. Rated capacity (MDWL) of PH 7

9.4 WATER SYSTEM NEEDS SUMMARY

The Pennorth DWS is in generally good condition; however, piping upgrades are needed to improve operational flexibility.

The existing system capacity will likely be sufficient to meet the future projected demands.

10 Perkinsfield

10.1 WATER SYSTEM DESCRIPTION

The Perkinsfield DWS is classified as a Large Municipal Residential System as per O.Reg. 170/03. It services 209 homes and businesses in the hamlet of Perkinsfield. The DWS consists of the following main components:

- 2 well pump stations (PH 22 and PH 26)
- 4 groundwater wells (wells 22-1, 11-2, 26-4 and 26-5)
- 2 storage reservoirs

The Perkinsfield DWS is designed to provide a water supply for fire protection.

It is noted that the water consumption rate in Perkinsfield, at 381 L/p/day, is high.

The distribution system includes some small diameter pipes (50 mm and 100 mm) that do not meet MECP Design Guidelines. Further, there have been complaints of dirty water. A watermain swabbing program was initiated in 2023 to improve water quality in the distribution system.

Pumphouse 22

PH 22 was built in 1985 and is located at 39 Balm Beach Road West. It is supplied by wells 22-1 and 11-2. Well 22-1 and a previously abandoned well are on the pumphouse property, while well 11-2 is at 22 Balm Beach Road West, adjacent to residential homes.

The pumphouse components consist of two high-lift pumps, one jockey pump, four pressure tanks and a chlorination system. A treated water reservoir is underneath the pumphouse. There is no standby power at PH 22.

Although some water piping has been updated, there remains corroded piping to be replaced. There are no air relief valves on the raw water lines from the wells. Well 11-2 was taken out of service in 2023 to investigate sporadic flow rate issues caused by air in the raw water.

Pumphouse 26

PH 26 was built in 1999 and is located at 260 Concession Road 8 East on the site of the water department office. PH 26 is supplied by wells 26-4 and 26-5 at the same location. Well 26-4 has never been put into service. Well 26-5 was scheduled to be rehabilitated in 2023.

The pumphouse contains two high-lift pumps, one jockey pump, two pressure tanks, and a chlorination system. The site has a treated water reservoir and an outdoor diesel generator. There is no lifting system for the high lift pumps and the piping is corroded.

A 200 mm diameter transmission main along Concession Road 9 East and County Road 6 South connects PH 26 to the Perkinsfield water distribution system.

Treated water from the reservoir has elevated THM levels. The reservoir has a mixing valve to keep water from freezing in the winter, but it does not address the high THMs.

10.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in Perkinsfield is anticipated to consist of the development of the remaining 10 vacant lots. A new municipal building, potentially with a library, is proposed to be built in the community. Table 21 summarizes the existing and projected water demands.

The potential commercial development of the airport lands was not included in the estimates of water demands because the water supply strategy has not been determined.

Table 21: Perkinsfield Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	209	502	661	9.1
With Projected Residential	219	526	694	9.6
With Projected Institutional			727	10.6

10.3 CAPACITY ASSESSMENT

The Perkinsfield DWS includes storage designed to provide equalization of peak hour demands and water supply for fire protection. The well supply and treatment systems therefore need to have the capacity to provide the future MDD.

As shown in Table 22, the firm well supply, with the largest well (well 26-5) out of service, has a shortfall of 178 m^3/day compared with the future MDD. The rated treatment capacity of both pumphouses, the high lift pumping capacity, and the treated water storage volume are sufficient for future requirements.

Table 22: Perkinsfield DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	549 m^3/day[1]	MDD: 727 m^3/day	(178 m^3/day)
Treatment	1,482 m^3/day[2]	MDD: 727 m^3/day	770 m^3/day
Distribution Pumping	31 L/s[3]	PHD: 10.6 L/s	20.8 L/s
Storage	730 m^3	346 m^3	384 m^3

Notes:
1. Well firm capacity (PTTW) with largest well (well 26-5) out of service
2. Rated capacity (MDWL) of PH 22 and PH 26
3 Rated capacity with one high lift pump at PH 26 and one high lift pump at PH 22 (DWWP)

10.4 WATER SYSTEM NEEDS SUMMARY

In summary, the needs at the Perkinsfield DWS are as follows:

- Additional groundwater supply capacity to improve redundancy and ensure there is adequate firm capacity. Well 26-4 is available to meet this need.
- Addition of stand-by power at PH 22.
- Upgrades to both pumphouses to address corrosion and other equipment concerns.
- Addition of air relief valves.
- Implementing a solution to reduce THMs at PH 26.
- Replacement of undersized watermains.

11 Rayko

11.1 WATER SYSTEM DESCRIPTION

The Rayko DWS is a Small Municipal Residential System as per O.Reg. 170/03. It services 42 homes near the Georgian Bay shoreline, southeast of the intersection of Concession 6 West and Tiny Beaches Road South. The system consists of the following main components:

- 1 well pump station (PH 6)
- 2 groundwater wells (wells 6-2 and 6-3)

The Rayko DWS is not designed to provide water supply for fire protection. It has no storage and there are no hydrants. Distribution system flushing and maintenance is facilitated by five blow-offs.

PH 6, built in 1970, is located at 539 Concession 6W. It is supplied by wells 6-2 and 6-3 adjacent to the pumphouse building. The pumphouse has three pressure tanks, a chlorination system, a chlorine contact main, and an outdoor natural gas generator. There is an underground reservoir that is not in use.

The pumphouse piping was updated in 2020 with new stainless-steel piping and cast-iron valves and flow meters.

The township noted that overnight water consumption is high due to lawn watering systems. Both wells must run all the time to meet the water demands, which make it difficult to schedule maintenance. However, there is limited space available for additional wells to be constructed.

Complaints of dirty water are common. Effective flushing of the distribution system is a challenge.

11.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Rayko water system is anticipated to be from the development of the remaining 10 vacant lots. Table 23 summarizes the existing and projected water demands.

Table 23: Rayko Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	42	101	76	1.7
Projected	52	125		
With 5% increase in occupancy		130	98	2.2

11.3 CAPACITY ASSESSMENT

The Rayko DWS does not include any storage. The well supply and treatment system need to have enough capacity to provide the PHD.

As shown in Table 24, the firm groundwater supply (with only well 6-2 in service) is insufficient to meet the future PHD. It is known that the Rayko system with both wells in operation has trouble keeping up with the current peak demands. The rated treatment capacity of PH 6 is adequate for the projected PHD.

Table 24: Rayko DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	0.75 L/s[1]	PHD: 2.2 L/s	(1.5 L/s)
Treatment	2.3 L/s[2]	PHD: 2.2 L/s	0.1 L/s

Notes:
1. Well firm capacity (PTTW) with largest well (well 6-3) out of service
2. Rated capacity (MDWL) of PH 6

11.4 WATER SYSTEM NEEDS SUMMARY

The Rayko DWS has the following needs:

- Additional well capacity to increase redundancy and to meet the peak water demands.
- Monitor water consumption and Install water meters.

12 Sawlog Bay

12.1 WATER SYSTEM DESCRIPTION

The Sawlog DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. The system services 51 homes along the Georgian Bay shoreline in the northeast of the township, just south of Georgian Bay Estates.

The system consists of the following main components:

- 1 well pump station (PH 16)
- 2 groundwater wells (wells 16-2 and 16-3)
- 1 below-grade storage reservoir

The Sawlog DWS is not designed to provide water supply for fire protection. There is one hydrant in the system that does not provide sufficient pressure to fill the fire department's tanker trucks. The hydrant and two blow offs are used for distribution system flushing and maintenance.

PH 16 was built in 1976 and is located at 25 Breithaupt Crescent. Wells 16-2 and 16-3 are adjacent to the pumphouse, which houses two high lift pumps, four pressure tanks, a chlorination system, and a polyphosphate sequestering system. A below grade concrete reservoir provides chlorine contact time. An outdoor diesel generator is available for stand-by power.

Updated piping, valves, flow meters and high lift pumps were installed in 2022. There remain issues with the flow control valves to the reservoir. An isolation valve is currently used to throttle flow on the raw water line. The corroded electrical panels need replacement.

The system has operational limitations. The reservoir must be put offline to inspect and clean it, which requires a boil water advisory.

The raw groundwater has elevated iron and manganese concentrations and has a sulfur odor, which is common in wells that draw from a bedrock aquifer. The township noted the raw water quality changes seasonally, which requires adjustment to the chlorine dosage.

12.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Sawlog Bay water system service area is anticipated from the development of the remaining 19 vacant lots. Due to the trend for property owners to upgrade their small cottages into larger homes, a 5% population allowance has been added to account for these conversions.

Table 25 summarizes the existing and projected water demands.

Table 25: Sawlog Bay Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	51	122	110	1.7
Projected	70	168		
With 5% increase in occupancy		174	156	2.4

12.3 CAPACITY ASSESSMENT

The Sawlog Bay DWS has a storage reservoir for chlorine contact time and equalization of peak demands. Therefore, the well supply and treatment system only need to have enough capacity to provide the MDD. The high lift pumps need to be able to provide the PHD.

As shown in Table 26, the firm well supply, with the largest well (well 16-3) out of service is sufficient to meet the projected MDD. The rated treatment capacity is also sufficient. The storage volume is adequate for equalization and emergency, based on MECP Design Guidelines.

Table 26: Sawlog Bay DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	196 m^3/day[1]	MDD: 156 m^3/day	40 m^3/day
Treatment	261 m^3/day[2]	MDD: 156 m^3/day	105 m^3/day
High Lift Pumping	3 L/s[2]	PHD: 2.4 L/s	0.6 L/s
Storage	100 m^3	56 m^3	44 m^3

Notes:
1. Well firm capacity (PTTW) with largest well (well 16-3) out of service
2. Rated capacity (MDWL) of PH 16

12.4 WATER SYSTEM NEEDS SUMMARY

In summary, the Sawlog Bay DWS needs are as follows:

- Additional system redundancy and operational flexibility (chlorine contact pipe) to facilitate maintenance and repairs.
- Process and electrical equipment upgrades.

13 Tee Pee Point

13.1 WATER SYSTEM DESCRIPTION

The Tee Pee Point DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. The system services 94 homes near Penetanguishene Bay in the northeast of the township. The DWS consists of the following main components:

- 1 well pump station (PH 9)
- 2 groundwater wells (wells 9-1 and 9-2)

The Tee Pee Point DWS is not designed to provide water supply for fire protection. It has no storage and one hydrant. Distribution system flushing and maintenance is facilitated by the hydrant and two blow-offs.

PH 9 was built in 1971 and is located at 19 Misty Crescent adjacent to residential lots. Wells 9-1 and 9-2 are adjacent to the pumphouse building.

The pumphouse has four pressure tanks, a chlorination system, a chlorine contact pipe, a polyphosphate sequestering system, and an outdoor natural gas generator.

The township indicated the DWS cannot keep up with the current water demands, and there is insufficient water to effectively flush the distribution system.

The groundwater has elevated levels of sodium, iron, manganese, and organics, and the water has some odour.

The township indicated the well pump automatic controls need to be corrected, and that the corroded electrical panels and some of the pumphouse piping need to be replaced.

13.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Tee Pee Point DWS is anticipated to consist of the development of the remaining 3 vacant lots. Table 27 summarizes the existing and projected water demands.

Table 27: Tee Pee Point Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	94	226	121	3.1
Projected	97	233	125	3.2

13.3 CAPACITY ASSESSMENT

The Tee Pee Point DWS does not include any storage. The well supply and treatment system need to have enough capacity to provide the PHD. As shown in Table 28, the firm well supply capacity and the rated capacity of the pumphouse are both below the estimated projected peak hour demand, which was estimated with a peaking factor of 5.4 as per MECP Design Guidelines.

Table 28: Tee Pee Point DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	2.1 L/s[1]	PHD: 3.2 L/s	(1.1 L/s)
Treatment	2.1 L/s[2]	PHD: 3.2 L/s	(1.1 L/s)

Notes:
1. Well firm capacity (PTTW) with well 9-1 or 9-2 out of service
2. Rated capacity (MDWL) of PH 9

13.4 WATER SYSTEM NEEDS SUMMARY

The needs of the Tee Pee Point DWS are as follows:

- Additional well supply and treatment capacity to meet current and projected water demands and facilitate maintenance and repairs.
- Equipment upgrades in the pumphouse.

14 Thunder Bay

14.1 WATER SYSTEM DESCRIPTION

The Thunder Bay DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. It services 24 homes on the Georgian Bay shoreline in the north part of the township.

The DWS consists of the following main components:

- 1 well pump station (PH 20)
- 2 groundwater wells (wells 20-1 and 20-2)

The Thunder Bay DWS is not designed to provide water supply for fire protection. It has no storage and two hydrants that are used for distribution system flushing and maintenance only.

PH 20, built in 1982, is located at 50 Beatrice Avenue. Well 20-1 and 20-2 are located near the front of the property. The pumphouse, which has been recently upgraded, has eight pressure tanks, a chlorination system, a chlorine contact main, and an outdoor diesel standby generator.

The township indicated that it is known there is asbestos in the ceiling tiles of PH 20.

The configuration of the water distribution system, consisting of a single trunk watermain extending from the pump house, presents a risk of extended water service interruption in the event of a watermain break, emergency, or maintenance.

14.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Thunder Bay is anticipated to be from the development of the remaining 13 vacant lots. Table 29 summarizes the existing and projected water demands.

Table 29: Thunder Bay Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	24	58	80	1.4
Projected	37	89		
With 5% increase in occupancy		92	129	2.3

14.3 CAPACITY ASSESSMENT

The Thunder Bay DWS does not include any storage. The well supply and treatment system need to have enough capacity to provide the PHD. As shown in Table 30, the existing firm capacity is just sufficient to meet the estimated PHD using a peaking factor of 7.4.

Table 30: Thunder Bay DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	2.3 L/s	PHD: 2.3 L/s	0 L/s
Treatment	2.3 L/s	PHD: 2.3 L/s	0.L/s

14.4 WATER SYSTEM NEEDS SUMMARY

The Thundery Bay DWS has just sufficient firm capacity to meet the projected water demands. Water metering would be beneficial to reduce water consumption and thus provide more assurance that the system capacity will remain adequate for the projected growth.

15 Vanier Woods

15.1 WATER SYSTEM DESCRIPTION

The Vanier Woods DWS is a Small Municipal Residential System as per O.Reg. 170/03. It services 73 homes near Georgian Bay between the Castle Cove and Lafontaine water systems.

Vanier Woods DWS consists of the following main components:

- 1 well pump station (PH 15)
- 2 groundwater wells (wells 15-1 and 15-2)
- 1 below-ground reservoir

The Vanier Woods DWS is not designed to provide water supply for fire protection. There is limited storage and only one hydrant, which does not provide sufficient pressure to fill the fire department's tanker trucks. The hydrant, along with two blow offs, are used for distribution system flushing and maintenance.

PH 15 is located at 25 St Laurent Boulevard. Wells 15-1 and 15-2 are in front of and behind the pumphouse. The pumphouse has two high lift pumps, one jockey pump, two pressure tanks, a chlorination system, a chlorine contact pipe, a below-ground reservoir, and an outdoor natural gas generator. Some of the treated water piping has been recently updated.

15.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in Vanier Woods is anticipated to be from the development of the remaining 30 vacant lots. As there is a trend for property owners to upgrade their small cottages into larger homes, a 5% allowance has been added to account for these conversions. Table 31 presents a summary of the existing and projected water demands.

Table 31: Vanier Woods Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	73	175	128	2.4
Projected	103	247	181	
With 5% increase in occupancy		256	187	3.6

15.3 CAPACITY ASSESSMENT

The Vanier Woods DWS has a treated water reservoir to provide equalization of peak demands. Therefore, the well supply and treatment system need to have enough capacity to provide the MDD. The high lift pumps need to be able to provide the PHD.

As shown in Table 32, the firm groundwater supply, with one well out of service, the rated capacity of the pumphouse, and the firm high lift pumping capacity, are all sufficient to meet the projected water demands. The storage tank is also adequate for domestic water needs.

Table 32: Vanier Woods DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	360 m^3/day[1]	MDD: 187 m^3/day	173 m^3/day
Treatment	360 m^3/day[2]	MDD: 187 m^3/day	173 m^3/day
High Lift Pumping	7.8 L/s[3]	PHD: 3.6 L/s	4.2 L/s
Storage	77 m^3	70 m^3	7 m^3

Notes:
1. Well firm capacity (PTTW) with well 15-1 or 15-2 out of service
2. Rated capacity (MDWL) of PH 15
3 Rated capacity with one high lift pump (DWWP)

15.4 WATER SYSTEM NEEDS SUMMARY

The Vanier Woods DWS is in generally good condition and there are no equipment concerns. It has the required capacity to meet the future water demands.

16 Whippoorwill

16.1 WATER SYSTEM DESCRIPTION

The Whippoorwill DWS is classified as a Small Municipal Residential System as per O.Reg. 170/03. It services 71 homes in a subdivision approximately 3.5 km northeast of Perkinsfield. The DWS consists of the following main components:

- 1 well pump station (PH 21)
- 2 groundwater wells (wells 21-1 and 21-2)
- 1 reservoir

The Whippoorwill DWS includes a water reservoir, watermains and hydrants designed to provide a water supply for fire protection. The distribution system consists of 150 mm and 200 mm diameter watermains.

PH 21 is located at 112 Goldfinch Crescent. Wells 21-1 and 21-2 are in the park across the street from the pumphouse. The pumphouse houses three high lift pumps, one jockey pump, three pressure tanks, a chlorination system, and an indoor diesel generator. The treated water reservoir is below the pumphouse.

The well casings are small and not plumb, making it difficult to remove the pump and level probe during maintenance.

Water quality is good at the Whippoorwill DWS.

16.2 PROJECTED GROWTH AND WATER DEMANDS

No significant growth is anticipated for the Whippoorwill water system other than the development of the 2 remaining vacant lots.

However, the per capita water consumption is the highest in the township at 511 L/p/day based on flow data for the last 3 years. The Township plans to install water meters.

Table 33 summarizes the current and projected population and water demands.

Table 33: Whippoorwill Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	71	170	344	5.4
Projected	73	175	355	5.6

16.3 CAPACITY ASSESSMENT

As the Whippoorwill DWS includes storage for equalization of peak demands, the groundwater supply and treatment system need to have enough capacity to provide the MDD. The high lift pumps need to be able to supply the PHD.

Table 34 summarizes the supply, treatment, pumping, and storage capacity assessment. The firm well supply capacity with one well out of service and the rated treatment capacity of the pumphouse are sufficient to meet the future MDD.

The firm high lift pumping capacity, with the largest pump out of service can satisfy the projected PHD. However, the largest pump, with a rated capacity of 20 L/s is smaller than the minimum fire flow (38 L/s) according to the MECP Design Guidelines. Therefore, the projected MDD plus recommended fire flow can only be met if all pumps are in operation concurrently.

The existing reservoir has the volume to supply a fire flow of 20 L/s for two hours and equalization storage. To supply the recommended fire flow of 38 L/s for two hours and provide equalization and emergency storage, the reservoir should have a volume of 455 m^3.

Table 34: Whippoorwill DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	529.5 m^3/day[1]	MDD: 355 m^3/day	174.5 m^3/day
Treatment	529.5 m^3/day[2]	MDD: 355 m^3/day	174.5 m^3/day
High Lift Pumping	16.6 L/s[3]	MDD + FF[4]: 42.1 L/s	(25.5 L/s)
Storage	203 m^3	455 m^3	(252 m^3)

Notes:
1. Well firm capacity (PTTW) with well 21-1 or 21-2 out of service
2. Rated capacity (MDWL) of PH 21
3 Rated capacity with largest pump out of service (DWWP)
4 Recommended fire flow of 38 L/s

16.4 WATER SYSTEM NEEDS SUMMARY

Needs identified for the Whippoorwill water system are as follows:

- Expand water storage to provide adequate equalization and MECP recommended level of fire protection.
- Expand pumping capacity to supply MECP recommended fire flow and the projected domestic water demands.
- Install water metering to reduce water consumption.

17 Woodland Beach

17.1 WATER SYSTEM DESCRIPTION

The Woodland Beach DWS is a Small Municipal Residential System as per O.Reg. 170/03. It services 37 homes near the Georgian Bay shoreline between Concession 3 West and Concession 4 West.

The system consists of the following main components:

- 1 well pump station (PH 25)
- 2 groundwater wells (wells 25-1 and 25-2)

The Woodland Beach DWS is not designed to provide water supply for fire protection. The distribution system has six hydrants that are used for distribution system flushing and maintenance only.

PH 25 is located at 48 Evergreen Avenue and was commissioned in 1993. Wells 25-1 and 25-2 are adjacent to the pumping station building. The pumphouse has five pressure tanks, a chlorination system, a polyphosphate sequestering system, and an indoor diesel standby generator.

Water quality in the Woodland Beach water system is good. The pumphouse is one of the newest in the township and is in good condition.

17.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Woodland Beach water system is anticipated to be from the development of the remaining 8 vacant lots. Table 35 summarizes the existing and projected population and water demands. It is noted that the per capita water consumption is high at 326 L/p/day.

Table 35: Woodland Beach Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	37	89	130	2.5
Projected	45	108		
With 5% increase in occupancy		112	161	3.1

17.3 CAPACITY ASSESSMENT

As the Woodland Beach DWS does not include any storage, the well supply and treatment system need to have enough capacity to provide the PHD. Table 36 shows that the DWS currently has the capacity required for the projected demands.

Table 36: Woodland Beach DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	3.4 L/s[1]	PHD: 3.1 L/s	0.3 L/s
Treatment	3.4 L/s[2]	PHD: 3.1 L/s	0.3 L/s

Notes:
1. Well firm capacity (PTTW) with well 25-1 or 25-2 out of service
2. Rated capacity (MDWL) of PH 25

17.4 WATER SYSTEM NEEDS SUMMARY

The Woodland Beach DWS is adequate for the projected water demands and there are no significant issues.

18 Wyevale

18.1 WATER SYSTEM DESCRIPTION

The Wyevale DWS is classified as a Large Municipal Residential System as per O.Reg. 170/03. It services 291 homes and businesses in the community of Wyevale. The system consists of the following main components:

- 2 well pump stations (PH17 and PH 29)
- 5 groundwater wells (Wells 17-1, 17-2 and 17-3; Wells 29-1 and 29-2)
- 1 in ground storage reservoir and booster pumping station (BPS 24)

The Wyevale DWS is designed to provide a water supply for fire protection. The distribution system consists primarily of 150 mm diameter watermains but also some 50 mm diameter watermains.

Water consumption in Wyevale is high, at 385 L/p/day. Water meters have recently been installed.

Pumphouse 17

PH 17 was built in 1978 and is located at 27 Howard Avenue. The three wells that supply the pumphouse (wells 17-1, 17-2 and 17-3) are adjacent to the pumphouse building.

PH 17 houses eight pressure tanks, a chlorination system, a polyphosphate sequestering system, and a chlorine contact main. The pumphouse does not have a generator. The township noted that some of the piping needs to be replaced.

Wells 17-1 and 17-3 operate concurrently and alternate with well 17-2.

PH 17 discharges to the water distribution system and fills the Wyevale reservoir.

Pumphouse 29

PH 29 was built in 2003 and is located at 33 Sterling Drive. Wells 29-1 and 29-2 are on the pumphouse site.

PH 29 has two pressure tanks, a chlorination system, a chlorine contact main, and an outdoor natural gas generator for standby power.

PH 29 discharges to the water distribution system and fills the Wyevale reservoir.

Reservoir and Booster Pumping Station 24

The Wyevale reservoir and BPS 24 were commissioned in 1990 and are located at 17 Withall Grove. The reservoir is filled with treated water from PH 17 and PH 29. The booster pumping station houses two high-lift pumps, one jockey pump, and a chlorination system. There is no standby generator at BPS 24. The township noted the presence of mold in the ceiling that needs to be addressed.

The BPS operation is controlled by the reservoir level and by the distribution system pressure, in conjunction with PH 17 and PH 29. The booster pumps operate to maintain pressure in the distribution system and will shut off when minimum reservoir level is reached. The BPS will call on PH 17 and PH 29 to pump into the distribution system and fill the reservoir when the reservoir level drops to a lead set point.

The reservoir typically empties quickly in the evening due to peak water demands.

18.2 PROJECTED GROWTH AND WATER DEMANDS

Growth in the Wyevale water system is anticipated to be from the remaining 21 unconnected lots, which are either currently vacant or on private wells.

Table 36 summarizes the existing and projected water demands associated with this growth.

Table 37: Wyevale Population and Water Demands

	CONNECTIONS	POPULATION	MDD (m^3/d)	ESTIMATED PHD (L/s)
Existing	291	698	865	12.8
Projected	312	749	928	13.8

18.3 CAPACITY ASSESSMENT

The Wyevale DWS includes storage for equalization of peak demands and supply for fire protection. The well supply therefore needs to have enough capacity to provide the MDD, while the high lift pumps, in combination with the well pumps, need to be able to provide the PHD and the MDD plus fire flow.

Table 37 summarizes the supply, treatment, pumping, and storage capacity assessment. The firm well supply, with the largest well (well 29-2) out of service, and the rated capacity of PH 29 plus PH 17, are sufficient to meet the future MDD.

The firm pumping capacity, determined as the BPS with the largest pump out of service, plus the firm well supply capacity, is 42.5 L/s. The projected MDD plus the minimum fire flow of 38 L/s

recommended by MECP Guidelines is 48 L/s. Therefore, the system can meet the PHD but cannot supply the MDD plus a fire flow of 38 L/s.

The water reservoir can provide equalization of peak demands or water for firefighting, but not both.

Table 38: Wyevale DWS Capacity Assessment

	FIRM CAPACITY	REQUIRED CAPACITY	SURPLUS / (SHORTFALL)
Well Supply	1,700 m^3/day[1]	MDD: 865 m^3/day	835 m^3/day
Treatment	1,182 m^3/day[2]	MDD: 865 m^3/day	317 m^3/day
High Lift Pumping	42.5 L/s[3]	PHD: 13.8 L/s MDD + FF[4]: 48 L/s	28.7 L/s (6.2 L/s)
Storage	274 m^3	632 m^3	(358 m^3)

Notes:
1. Well firm capacity (PTTW) with well 29-2 out of service
2. Rated capacity (MDWL) of PH 17 and PH 29
3 BPS rated capacity with largest pump out of service (DWWP) + Firm GW capacity
4 Recommended fire flow of 38 L/s

18.4 WATER SYSTEM NEEDS SUMMARY

The needs of the Wyevale DWS are as follows:

- Insufficient water storage to provide adequate equalization and the MECP recommended level of fire protection.
- Insufficient firm pumping capacity to supply the MECP recommended fire flow in addition to the projected domestic water demands.

19 Problem Statement

The above analysis of the existing DWS provides a list of their individual needs to improve their operation, capacity and/or performance in supplying safe drinking water to their current customers and to potential new customers within their existing service areas.

However, the Township's overall goal is also to improve the availability of safe drinking water for all Township residents. Most of the township's permanent and seasonal residents do not receive municipal water. The township's 16 DWS serve approximately 6,500 residents. This serviced population corresponds to approximately 25% of the estimated total permanent and seasonal population of 25,000, based on population estimates in the Official Plan.

The township conducted a survey of its residents in the fall of 2023 to better understand the residents' satisfaction or wishes with their drinking water supply. The survey, which was completed by 363 residents, 64% of which are on private wells, indicated there is interest in connecting to a municipal water supply system particularly where the current well supply is not satisfactory.

Therefore, the Water Master Plan's must consider both the needs in the DWS service areas and how to improve the drinking water supply to the unserviced areas.

The proposed Problem Statement is as follows:

The Water Master Plan needs to identify the most appropriate solutions to:

- *Increase the resiliency and the redundancy of the municipal DWS' supply, treatment, and pumping facilities to provide the operational flexibility to maintain a safe drinking water supply to existing customers under normal and emergency conditions.*
- *Upgrade, replace or repair facilities and equipment at the municipal DWS to address condition and capacity deficiencies.*
- *Expand or modify the DWS systems to provide the capacity to supply drinking water to the anticipated growth within the service areas to the year 2043, and to increase the level of fire protection.*
- *Reduce excessive water consumption to minimize the need for future expansion of the municipal DWS.*
- *Extend municipal water service to unserviced areas where private water supplies may not provide a safe drinking water source.*

Appendix A:
Water System Demands & Capacity Assessment Calculations

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Bluewater	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Bluewater.

Year	Average Day Demand (ADD) (m^3/day)	Maximum Day Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	256	755	3.0	773	331
2019	215	723	3.4	773	278
2020	252	697	2.8	773	326
2021	207	638	3.1	773	268
2022	245	703	2.9	773	317
3 Year Average / Max	**235**	**703**	**3.1**	**-**	**303**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 322 existing connections and 90 vacant lots:

	Connections	Population	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	322	773	-	235	-	703	4.13	11.2
Vacant lots	90	216	303	66	3.1	202		
Allowance***	0	39	303	12	3.1	36		
Total	412	1,027	-	312	-	941	3.75	13.5

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

303 L/p/day x 3.1 MDF x 2.4 ppu = 2,241 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-08 and QP-06-18:

Pump Station 8

- System type: Direct Pumping
- Rated capacity: 360 m^3/day.
- Population Service Capacity: 385 persons
- Well 8-1 Maximum flow rate of: 360 m^3/day = 4.2 L/s
- Chlorine Contact Pipe: 7.31 m of 1200 mm dia. pipe. Contact time: 8.3 m^3.

Pump Station 18

- System type: Storage & High-lift Pumping
- Rated capacity: 816.5 m^3/day.
- Population Service Capacity: 874 persons

- Well 18-1 Maximum flow rate of: 816.48 m^3/day = 9.45 L/s
- Well 18-2 Maximum flow rate of: 816.48 m^3/day = 9.45 L/s
- Reservoir Volume: 318 m^3.
- One (1) multistage centrifugal jockey high-lift pump. Capacity: 9.5 L/s *From McMahan DWS Class EA, April 2014*
- Two (2) vertical turbine high-lift pumps. Each with capacity: 11.4 L/s

Total Firm Groundwater Supply Capacity

- Supply capacity: 1176.5 m^3/day = 13.62 L/s > 13.5 L/s Projected PHD

4. Required Storage Capacity

- The Bluewater system is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation. Storage capacity is only required for Pump Station 18.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage
  B = Equalization Storage (25% of maximum day demand); and
  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **461** m3 for a total projected population of 1027 .
  - The Equalization Storage (B) is not required as the wells are able to meet the projected peak hour demand.
  - The Emergency Storage (C) is then **115** m3.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water.
- Chlorine Contact Time is based on the MOE Procedure for Disinfection of Drinking Water in Ontario as well as the received QMS Procedures from the Township. For CT Disinfection under normal operating conditions:
  - The system serves a population of 1,027 at an MDD of 0.7 m^3/min.
  - Free Chlorine residual at discharge from Pump Station 18 is 1 mg/L.
  - Based on MOE Procedures Table 7 for a minimum temperature of 5°C, 2-Log inactivation and a pH between 6 and 9, the required CT value is 4.0
  - Assume a baffle factor of 0.5
    T_{10} = 4.0 / 1 mg/L / 0.5 = 8 min
  - Min. required volume **5** m^3.
- Total Treated Water Storage Requirement = 461 + 0 + 115 + 5
  = **581** **m^3**
- There is insufficient spare capacity in the system. The storage will require resizing to accommodate the additional 263 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Castle Cove	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Castle Cove.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	143	391	2.7	403	354
2019	146	367	2.5	403	362
2020	139	470	3.4	403	344
2021	128	379	3.0	403	319
2022	145	328	2.3	403	360
3 Year Average / Max	**138**	**470**	**3.4**	**-**	**341**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 168 existing connections and 98 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	168	403	-	138	-	470	4.5	7.2
Vacant lots	98	235	341	80	3.4	271		
5% Allowance		20		7		23		
Total	266	659	-	225	-	764	4.13	10.7

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

MDD for future residential units is estimated to be:

341 L/p/day x 3.4 MDF x 2.4 ppu = 2,768 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-04, QP-06-13 and QP-06-30:

Pump Station 4

- System type: Direct Pumping
- Rated capacity: 752 m^3/day.
- Population Service Capacity: 652
- Well 4-1 Maximum flow rate of: 962 m^3/day = 11.14 L/s
- Chlorine Contact Pipe: 65 m of 400 mm dia. pipe. Contact time: 8.2 m^3.

Pump Station 13

- System type: Direct Pumping
- Rated capacity: 490 m^3/day.
- Population Service Capacity: 425
- Well 13-1 Maximum flow rate of: 491 m^3/day = 5.683 L/s

- Well 13-2 Maximum flow rate of: 491 m^3/day = 5.683 L/s
- Chlorine Contact Pipe: 102 m of 250 mm dia. pipe. Contact time: 5.0 m^3.

Pump Station 30

- System type: Direct Pumping
- Rated capacity: 214 m^3/day.
- Population Service Capacity: 186
- Well 30-1 Maximum flow rate of: 150 m^3/day = 1.736 L/s
- Well 30-2 Maximum flow rate of: 150 m^3/day = 1.736 L/s
- Chlorine Contact Pipe: 76 m of 300 mm dia. pipe. Contact time: 5.4 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 1282 m^3/day = 14.8 L/s > 10.7 L/s Projected PHD

4. Required Storage Capacity

- The Castle Cove system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells able to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Cooks Lake	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Cooks Lake.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	137	200	1.5	221	621
2019	129	188	1.5	221	582
2020	91	339	3.7	221	412
2021	89	142	1.6	221	403
2022	88	380	4.3	221	397
3 Year Average / Max	**89**	**380**	**4.3**	**-**	**404**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 92 existing connections and 11 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	92	221	-	89	-	380	5.4	5.6
Vacant lots	11	26	404	11	4.3	46		
Allowance***	0	11	404	4	4.3	19		
Total	103	258	-	104	-	446	5.4	6.5

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

404 L/p/day x 4.3 MDF x 2.4 ppu = 4,200 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-12:

Pump Station 12

- System type: Direct Pumping
- Rated capacity: 200 m^3/day.
- Population Service Capacity: 114
- Well 12-1 Maximum flow rate of: 200 m^3/day = 2.315 L/s
- Well 12-2 Maximum flow rate of: 200 m^3/day = 2.315 L/s
- Chlorine Contact Pipe: 68 m of 400 mm dia. pipe. Contact time: 8.5 m^3.
- Reservoir Volume: 100 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 200 m^3/day = 2.315 L/s < 6.5 L/s Projected PHD

4. Required Storage Capacity

- The Cooks Lake system is not designed to provide fire protection. The reservoir for storage capacity is not currently in use. Tiny Township has initiated plans for redesign.
- The system currently acts as a Direct Pumping system type and does not require additional storage. Following the implementation of the new reservoir the system will act as a Storage and High-Lift Pumping type and require additional storage.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.3, treated water storage for systems not providing fire protection is 25% of Maximum Day Demand plus 40% of Average Day Demand.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water. The storage is provided by a chlorine contact pipe before entering the distribution system.
- Total Treated Water Storage Requirement = 0.25 × 446 + 0.40 × 104
  = **153** **m^3**
- There is no spare capacity in the current system. The storage design will require sizing to accomodate the required 147 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Georgian Bay Estates	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Georgian Bay Estates.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	213	539	2.5	612	348
2019	241	563	2.3	612	394
2020	205	499	2.4	612	335
2021	178	526	3.0	612	290
2022	245	541	2.2	612	400
3 Year Average / Max	**209**	**541**	**3.0**	**-**	**342**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 255 existing connections and 94 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	255	612	-	209	-	541	4.13	10.0
Vacant lots	94	226	342	77	3.0	228		
5% Allowance		31		10		31		
Total	349	868	-	297	-	800	4.13	14.2

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

MDD for future residential units is estimated to be:

342 L/p/day x 3.0 MDF x 2.4 ppu = 2,430 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 5, MDWL Issue 5 and QMS QP-06-19:

Pump Station 19

- System type: Storage and High-Lift Pumping
- Rated capacity: 950 m^3/day.
- Well 19-1 Maximum flow rate of: 425.5 m^3/day = 4.925 L/s
- Well 19-2 Maximum flow rate of: 327.3 m^3/day = 3.788 L/s
- Well 19-3 Maximum flow rate of: 196.4 m^3/day = 2.273 L/s
  - Wells are considered GUDI with effective in-situ filtration.
- Reservoir Volume: 780 m^3.
- One (1) multistage centrifugal jockey high-lift pump rated 400 L/min at 46 m TDH.
- Three (3) vertical turbine high-lift pumps each rated 900 L/min at 46 m TDH.

Firm Groundwater Supply Capacity

- Supply capacity: 524 m^3/day = 6.061 L/s < 14.2 L/s Projected PHD

4. Required Storage Capacity

- The Georgian Bay Estates system is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage

  B = Equalization Storage (25% of maximum day demand); and

  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **274** m3 for a total projected population of 868 .
  - The wells are not rated to meet projected peak hour demand, therefore the Equalization Storage (B) is **200** m3.
  - The Emergency Storage (C) is then **118** m3.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water.
- Chlorine Contact Time is based on the MOE Procedure for Disinfection of Drinking Water in Ontario as well as the received QMS Procedures from the Township. For CT Disinfection under normal operating conditions:
  - The system has an MDD of 0.56 m^3/min.
  - Free Chlorine residual at discharge from Pump Station 19 is 1 mg/L.
  - Based on MOE Procedures Table 7 for a minimum temperature of 5°C, 2-Log inactivation and a pH between 6 and 9, the required CT value is 4.0
  - Assume a baffle factor of 0.5

    T_{10} = 4.0 / 1 mg/L / 0.5 = 8 min
  - Min. required volume **4** m^3.
- Total Treated Water Storage Requirement = 274 + 200 + 118 + 4

  = **597** **m^3**
- There is sufficient spare capacity in the system. The existing storage is able to accommodate an additional 183 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	16-Nov-23
SUBJECT	Water Taking Reports Summary - Lafontaine Pressure Zone	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data - Lafontaine Pressure Zone (Upper Pressure Zone)

- From the 2022 Water Taking Reports and BPS flow data for 2022:
  - Populations are based on population density of 2.4 ppu for Lafontaine.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2022	79	201	2.6	161	489

**Assuming there has been no population growth from 2018 to 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 67 existing connections and 28 vacant lots:

	Connections	Population	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	67	161	-	79	-	201	3.4	3.1
Vacant lots	28	67	491	33	2.6	84		
Allowance***		8		4		10		
Total	95	236	-	116	-	295	3.4	4.5

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

491 L/p/day x 2.6 MDF x 2.4 ppu = 3,014 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 6, MDWL Issue 5 and QMS QP-06-02, QP-06-14 and QP-06-23:

Pump Station 23

- System type: Storage & High-lift Pumping
- Rated capacity: 648.0 m^3/day.
- Well 23-1 Maximum flow rate of: 648 m^3/day = 7.50 L/s
- Well 23-4 Maximum flow rate of: 392.8 m^3/day = 4.55 L/s
- Chlorine Contact Pipe: 62 m of 400 mm dia. pipe. Contact time: 7.8 m^3.
- Reservoir Volume: 108 m^3.
- One (1) submersible jockey high-lift pump rated 150 L/min at 43 m TDH.
- One (1) vertical turbine high-lift pump rated 600 L/min at 41 m TDH.
- One (1) vertical turbine high-lift pump rated 2400 L/min at 41 m TDH.

Other System Facilities

- Valve House Station 23
- Booster Pumping Station 14
  - Two (2) vertical inline pumps (duty/standby) rated 454 L/min at 14 m TDH.
  - Supply capacity: 454 L/min = 653.8 m^3/day.
- Elevated Storage Reservoir
  - Reservoir Volume: 1,293 m^3.

Firm Groundwater Supply Capacity (Assumes BPS is out of service)

- Supply capacity: 1,041 m^3/day = 723 L/min = 12.0 L/s > 4.5 L/s Projected PHD
- There is sufficient supply capacity to meet the projected MDD and PHD.

Firm Pumping Capacity (Assumes largest HLP at PH23 is out of service and 1 of 2 pumps in operation at BPS)

- Pumping capacity: 1,204 L/min = 20.1 L/s > 4.5 L/s Projected PHD
- Firm pumping capacity is less than the MECP recommended minimum fire flow rate of 38 L/s.

4. Required Storage Capacity

- The Lafontaine system for the upper Lafontaine pressure zone is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation. Existing storage capacity is available at Pump Station 23 and the elevated storage reservoir.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage

  B = Equalization Storage (25% of maximum day demand); and

  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **274** m3 for a total projected population of 236 .
  - The Equalization Storage (B) is not required as the wells are able to meet peak hour demand.
  - The Emergency Storage (C) is then **68** m3.
  - Chlorine contact time is provided by the contact main at each pumphouse. Reservoir storage volume is not required to provide CT.
- Total Treated Water Storage Requirement = 274 + 0 + 68

  = **342** **m^3**
- There is sufficient storage capacity in the upper pressure zone. There is a surplus storage capacity of: 1,059 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 20, 2023
SUBJECT	Water Taking Reports Summary - Lefaive	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Lefaive.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	33	81	2.5	166	197
2019	44	108	2.5	166	265
2020	29	93	3.2	166	173
2021	33	89	2.7	166	199
2022	39	242	6.2	166	237
3 Year Average / Max	**34**	**242**	**3.2**	**-**	**203**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 69 existing connections and 18 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	69	166	-	34	-	242	5.4	2.1
Vacant lots	18	43	203	9	3.2	28		
Allowance***	0	8	203	2	3.2	5		
Total	87	217	-	44	-	275	5.4	2.8

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

203 L/p/day x 3.2 MDF x 2.4 ppu = 1,575 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-03:

Pump Station 3

- System type: Direct Pumping
- Rated capacity: 309 m^3/day.
- Well 3-2 Maximum flow rate of: 308.7 m^3/day = 3.573 L/s
- Well 3-3 Maximum flow rate of: 280.8 m^3/day = 3.25 L/s
- Chlorine Contact Pipe: 18 m of 500 mm dia. pipe. Contact time: 3.5 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 280.8 m^3/day = 3.25 L/s > 2.8 L/s Projected PHD

4. Required Storage Capacity

- The Lefaive system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells are able to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	August 17, 2023
SUBJECT	Water Taking Reports Summary - Pennorth	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Pennorth.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	14	61	4.4	77	182
2019	12	37	3.2	77	151
2020	13	44	3.3	77	175
2021	17	63	3.7	77	219
2022	17	60	3.5	77	225
3 Year Average / Max	**16**	**63**	**3.7**	**-**	**206**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 32 existing connections and 7 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	32	77	-	15.8	-	63.1	7.4	1.4
Vacant lots	7	17	206	3.5	3.7	13.0		
Allowance***	0	4	206	0.8	3.7	3.0		
Total	39	97	-	20	-	79	7.4	1.7

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

206 L/p/day x 3.7 MDF x 2.4 ppu = 1,853 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-07:

Pump Station 7

- System type: Direct Pumping
- Rated capacity: 135 m^3/day.
- Well 7-1 Maximum flow rate of: 135.0 m^3/day = 1.563 L/s
- Well 7-2 Maximum flow rate of: 135.0 m^3/day = 1.563 L/s
- Chlorine Contact Pipe: 112 m of 150 mm dia. pipe. Contact time: 2.0 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 135 m^3/day = 1.563 L/s < 1.7 L/s Projected PHD

4. Required Storage Capacity

- The Pennorth system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells are not able to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	January 5, 2024
SUBJECT	Water Taking Reports Summary - Perkinsfield	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Perkinsfield.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	164	582	3.5	502	328
2019	183	530	2.9	502	365
2020	183	651	3.6	502	365
2021	192	543	2.8	502	383
2022	198	661	3.3	502	395
3 Year Average / Max	**191**	**661**	**3.6**	**-**	**381**

**Assuming there has been no population growth from 2018 to 2022.*

2. Projected Developments & Infilling

- Residential based on 2022 data of ppu for existing connections and 209 vacant lots.
- New municipal building and library on Concession Rd 9 east of Perkinsfield:

2,709 m2 x 75 L/day per 9.3 m2 floor space = 21,849 L/day = 21.8 m3/day

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	209	502	-	191	-	661	4.13	9.1
Vacant lots	10	24	381	9	3.6	33		
Mun. Building	-	-		22	1.5	33		
Total	219	526	-	222	-	727	4.13	10.6

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

MDD for future residential units is estimated to be:

381 L/p/day x 3.6 MDF x 2.4 ppu = 3,254 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-22 and QP-06-26:

Pump Station 22

- System type: Storage & High-lift Pumping
- Rated capacity: 549.0 m^3/day.
- Well 11-2 Maximum flow rate of: 195.84 m^3/day = 2.267 L/s
- Well 22-1 Maximum flow rate of: 352.8 m^3/day = 4.083 L/s
- Reservoir Volume: 215 m^3.
- One (1) centrifugal jockey high-lift pump rated 3.8 L/s at 42 m TDH.
- Two (2) vertical turbine high-lift pumps each rated 9.0 L/s at 42 m TDH.

Pump Station 26

- System type: Storage & High-lift Pumping
- Rated capacity: 933.0 m^3/day.
- Well 26-4 Maximum flow rate of: 360.0 m^3/day = 4.167 L/s Not in use.
- Well 26-5 Maximum flow rate of: 933.12 m^3/day = 10.8 L/s
- Reservoir Volume: 515 m^3.
- One (1) multistage centrifugal jockey high-lift pump rated 9.5 L/s at 51.1 m TDH.
- Two (2) multistage centrifugal high-lift pumps each rated 22 L/s at 73.1 m TDH.

Total Firm Groundwater Supply Capacity

- Supply capacity: 909 m^3/day = 10.52 L/s > 10.6 L/s Projected PHD
- Well 26-4 is not connected to the system and not in use since being drilled. The supply capacity for all wells currently in use by the system is 549 m^3/day = 6.35 L/s < 10.6 L/s Projected PHD

4. Required Storage Capacity

- The Perkinsfield system is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation. Existing storage capacity is available at both pumping stations.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage
  B = Equalization Storage (25% of maximum day demand); and
  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **274** m3 for a total projected population of 526 .
  - The Equalization Storage (B) is not required as the wells are able to meet peak hour demand assuming Well 26-4 is put into use.
  - The Emergency Storage (C) is then **68** m3.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water.
- Chlorine Contact Time is based on the MOE Procedure for Disinfection of Drinking Water in Ontario as well as the received QMS Procedures from the Township. For CT Disinfection under normal operating conditions:
  - The system has an MDD of 0.50 m^3/min.
  - Free Chlorine residual at discharge from Pump Station 22 is 1 mg/L.
  - Based on MOE Procedures Table 7 for a minimum temperature of 5°C, 2-Log inactivation and a pH between 6 and 9, the required CT value is 4.0
  - Assume a baffle factor of 0.5

    T_{10} = 4.0 / 1 mg/L / 0.5 = 8 min
  - Min. required volume **4** m^3.
- Total Treated Water Storage Requirement = 274 + 0 + 68 + 4
  = **346** **m^3**
- There is sufficient spare capacity in the system. The existing storage can accommodate the additional required 384 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 20, 2023
SUBJECT	Water Taking Reports Summary - Rayko	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Rayko.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	19	102	5.4	101	187.5
2019	20	64	3.2	101	199.8
2020	26	74	2.8	101	258
2021	30	76	2.6	101	294
2022	27	72	2.7	101	264
3 Year Average / Max	**27**	**76**	**2.8**	**-**	**272**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 42 existing connections and 10 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	42	101	-	27	-	75.9	5.4	1.7
Vacant lots	10	24	272	6.5	2.8	18.6		
Allowance***	0	5	272	1.4	2.8	3.9		
Total	52	130	-	35	-	98	5.4	2.2

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

272 L/p/day x 2.8 MDF x 2.4 ppu = 1,858 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-06:

Pump Station 6

- System type: Direct Pumping
- Rated capacity: 194 m^3/day.
- Well 6-2 Maximum flow rate of: 64.8 m^3/day = 0.75 L/s
- Well 6-3 Maximum flow rate of: 129.6 m^3/day = 1.5 L/s
- Chlorine Contact Pipe: 120 m of 150 mm dia. pipe. Contact time: 2.1 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 65 m^3/day = 0.75 L/s < 2.2 L/s Projected PHD

4. Required Storage Capacity

- The Rayko system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The firm groundwater supply has a shortfall and is unable to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 20, 2023
SUBJECT	Water Taking Reports Summary - Sawlog Bay	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Sawlog.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	29	111	3.9	122	235
2019	20	64	3.2	122	165
2020	27	83	3.1	122	218
2021	27	74	2.7	122	221
2022	27	110	4.0	122	224
3 Year Average / Max	**27**	**110**	**4.0**	**-**	**221**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 51 existing connections and 19 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	51	122	-	27	-	110	5.4	1.7
Vacant lots	19	46	221	10	4.0	41		
5% Allowance		6		1		5		
Total	70	174	-	39	-	156	5.4	2.4

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

MDD for future residential units is estimated to be:

221 L/p/day x 4.0 MDF x 2.4 ppu = 2,132 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-16:

Pump Station 16

- System type: Storage & High-lift Pumping
- Rated capacity: 261.0 m^3/day.
- Well 16-2 Maximum flow rate of: 196.128 m^3/day = 2.27 L/s
- Well 16-3 Maximum flow rate of: 260.64 m^3/day = 3.017 L/s
- Reservoir Volume: 100 m^3.
- Two (2) multistage centrifugal high-lift pumps.

Firm Groundwater Supply Capacity

- Supply capacity: 196.1 m^3/day = 2.27 L/s < 2.4 L/s Projected PHD

4. Required Storage Capacity

- The Sawlog system is not designed to provide fire protection. Existing storage capacity is available at Pump Station 16.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.3, treated water storage for systems not providing fire protection is 25% of Maximum Day Demand plus 40% of Average Day Demand.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water.
- Chlorine Contact Time is based on the MOE Procedure for Disinfection of Drinking Water in Ontario as well as the received QMS Procedures from the Township. For CT Disinfection under normal operating conditions:
  - The system has an MDD of 0.11 m^3/min.
  - Free Chlorine residual at discharge from Pump Station 16 is 1 mg/L.
  - Based on MOE Procedures Table 7 for a minimum temperature of 5°C, 2-Log inactivation and a pH between 6 and 9, the required CT value is 4.0
  - Assume a baffle factor of 0.5
    T_{10} = 4.0 / 1 mg/L / 0.5 = 8 min
  - Min. required volume **1** m^3.
- Total Treated Water Storage Requirement = 0.25 × 156 + 0.40 × 39 + 1
  = **56** **m^3**
- There is sufficient spare capacity in the system. The storage is to accommodate an additional 44 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 18, 2023
SUBJECT	Water Taking Reports Summary - Tee Pee Point	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Tee Pee Point.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	45	115	2.6	226	198
2019	43	87	2.0	226	193
2020	51	121	2.4	226	225
2021	50	113	2.2	226	224
2022	46	107	2.3	226	203
3 Year Average / Max	**49**	**121**	**2.4**	**-**	**217**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 94 existing connections and 3 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	94	226	-	49	-	121	5.4	3.1
Vacant lots	3	7	217	2	2.4	4		
Total	97	233	-	51	-	125	5.4	3.2

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

MDD for future residential units is estimated to be:

217 L/p/day x 2.4 MDF x 2.4 ppu = 1,245 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-09:

Pump Station 9

- System type: Direct Pumping
- Rated capacity: 178 m^3/day.
- Well 9-1 Maximum flow rate of: 177.5 m^3/day = 2.054 L/s
- Well 9-2 Maximum flow rate of: 177.5 m^3/day = 2.054 L/s
- Chlorine Contact Pipe: 7.31 m of 1200 mm dia. pipe. Contact time: 8.3 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 177.5 m^3/day = 2.054 L/s < 3.2 L/s Projected PHD

4. Required Storage Capacity

- The Tee Pee Point system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells have a shortfall and is unable to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 20, 2023
SUBJECT	Water Taking Reports Summary - Thunder Bay	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Thunder Bay.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	16	101	6.2	58	285
2019	14	62	4.5	58	240
2020	12	57	4.9	58	201
2021	17	80	4.8	58	291
2022	21	68	3.2	58	372
3 Year Average / Max	**17**	**80**	**4.9**	**-**	**288**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 24 existing connections and 13 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	24	58	-	16.6	-	80	7.4	1.4
Vacant lots	13	31	288	9.0	4.9	44		
Allowance***	0	3	288	0.8	4.9	4		
Total	37	92	-	26	-	129	7.4	2.3

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

288 L/p/day x 4.9 MDF x 2.4 ppu = 3,419 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-20:

Pump Station 20

- System type: Direct Pumping
- Rated capacity: 200 m^3/day.
- Well 20-1 Maximum flow rate of: 203.0 m^3/day = 2.35 L/s
- Well 20-2 Maximum flow rate of: 203.0 m^3/day = 2.35 L/s
- Chlorine Contact Pipe: 120 m of 150 mm dia. pipe. Contact time: 2.1 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 203 m^3/day = 2.35 L/s < 2.3 L/s Projected PHD

4. Required Storage Capacity

- The Thunder Bay system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells have a shortfall and are unable to meet the peak hour demand. However, a reduced peak factor should be considered because the Township indicates that the system has no issues keepin up with the current peak demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Vanier Woods	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Vanier Woods.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	45	121	2.7	175	260
2019	84	206	2.4	175	481
2020	40	118	3.0	175	227
2021	39	128	3.3	175	223
2022	39	110	2.8	175	220
3 Year Average / Max	**39**	**128**	**3.3**	**-**	**223**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 73 existing connections and 30 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	73	175	-	39	-	128	5.4	2.4
Vacant lots	30	72	223	16	3.3	53		
5% Allowance		9		2		6		
Total	103	256	-	57	-	187	5.4	3.6

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-3.*

MDD for future residential units is estimated to be:

223 L/p/day x 3.3 MDF x 2.4 ppu = 1,753 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-15:

Pump Station 15

- System type: Double Pumping System with Reservoir and High-Lift Pumps
- Rated capacity: 360 m^3/day.
- Well 15-1 Maximum flow rate of: 360.0 m^3/day = 4.167 L/s
- Well 15-2 Maximum flow rate of: 360.0 m^3/day = 4.167 L/s
- Chlorine Contact Pipe: 60 m of 300 mm dia. pipe. Contact time: 4.2 m^3.
- Reservoir Volume: 77 m^3.
- One (1) submersible jockey high-lift pump rated 37.9 L/min at 38 TDH.
- Two (2) multistage centrifugal high-lift pumps each rated 468 L/min at 43 m TDH.

Firm Groundwater Supply Capacity

- Supply capacity: 360 m^3/day = 4.167 L/s > 3.6 L/s Projected PHD

4. Required Storage Capacity

- The Vanier Woods system is not designed to provide fire protection.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.3, treated water storage for systems not providing fire protection is 25% of Maximum Day Demand plus 40% of Average Day Demand.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water. The storage is provided by a chlorine contact pipe before entering the reservoir.
- Total Treated Water Storage Requirement = 0.25 × 187 + 0.40 × 57
  = **70** **m^3**
- This leaves a buffer volume of 7 m^3
- The existing treated water storage is sufficient for the projected water demands.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Whippoorwill	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Whippoorwill.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	95	358	3.8	170	559
2019	78	360	4.6	170	457
2020	81	334	4.1	170	474
2021	93	344	3.7	170	546
2022	87	336	3.9	170	512
3 Year Average / Max	**87**	**344**	**4.1**	**-**	**511**

**Assuming there has been no population growth from 2018 to 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 71 existing connections and 2 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	71	170	-	87	-	344	5.4	5.4
Vacant lots	2	5	511	2	4.1	10		
Total	73	175	-	90	-	355	5.4	5.6

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

MDD for future residential units is estimated to be:

511 L/p/day x 4.1 MDF x 2.4 ppu = 5,072 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-21:

Pump Station 21

- System type: Storage & High-lift Pumping
- Rated capacity: 529.5 m^3/day.
- Well 21-1 Maximum flow rate of: 529.5 m^3/day = 6.128 L/s
- Well 21-2 Maximum flow rate of: 529.5 m^3/day = 6.128 L/s
- Reservoir Volume: 203 m^3.
- One (1) submersible jockey high-lift pump rated 83.4 L/min at 38.6 m TDH.
- Two (2) vertical turbine high-lift pumps each rated 500 L/min at 19 m TDH.
- One (1) vertical turbine high-lift pump rated 1,200 L/min at 38.2 m TDH.

Firm Groundwater Supply Capacity

- Supply capacity: 529.5 m^3/day = 6.128 L/s > 5.6 L/s Projected PHD
- There is sufficient well capacity to supply the projected peak hour demand.

4. Required Storage Capacity

- The Whippoorwill system is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation.
- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage

  B = Equalization Storage (25% of maximum day demand); and

  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **274** m3 for a total projected population of 175 .
  - The wells are able to meet the peak hour demand, therefore the Equalization Storage (B) is **89** m3.
  - The Emergency Storage (C) is then **91** m3.
- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water.
- Chlorine Contact Time is based on the MOE Procedure for Disinfection of Drinking Water in Ontario as well as the received QMS Procedures from the Township. For CT Disinfection under normal operating conditions:
  - The system has an MDD of 0.25 m^3/min.
  - Free Chlorine residual at discharge from Pump Station 21 is 1 mg/L.
  - Based on MOE Procedures Table 7 for a minimum temperature of 5°C, 2-Log inactivation and a pH between 6 and 9, the required CT value is 4.0
  - Assume a baffle factor of 0.5

    T_{10} = 4.0 / 1 mg/L / 0.5 = 8 min
  - Min. required volume **2** m^3.
- Total Treated Water Storage Requirement = 274 + 89 + 91 + 2

  = **455** **m^3**
- There is insufficient spare capacity in the system. The storage will require resizing to accommodate the shortfall of 252 m3.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Woodland Beach	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Woodland Beach.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	24	93	3.8	89	274
2019	26	113	4.3	89	297
2020	32	130	4.1	89	361
2021	29	95	3.2	89	332
2022	25	88	3.5	89	285
3 Year Average / Max	**29**	**130**	**4.1**	**-**	**326**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 37 existing connections and 8 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	37	89	-	29	-	130	7.4	2.5
Vacant lots	8	19	326	6	4.1	25		
Allowance***	0	4	326	1	4.1	6		
Total	45	112	-	37	-	161	7.4	3.1

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

***PDF is based on 2008 MECP Design Guidelines for Drinking Water Systems Table 3-1 and 3-3.*

****Allowance includes additional 5% population due to the conversion of seasonal to year-round housing.*

MDD for future residential units is estimated to be:

326 L/p/day x 4.1 MDF x 2.4 ppu = 3,169 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-25:

Pump Station 25

- System type: Direct Pumping
- Rated capacity: 295 m^3/day.
- Well 25-1 Maximum flow rate of: 295.2 m^3/day = 3.417 L/s
- Well 25-2 Maximum flow rate of: 295.2 m^3/day = 3.417 L/s
- Chlorine Contact Pipe: 45 m of 300 mm dia. pipe. Contact time: 3.2 m^3.

Firm Groundwater Supply Capacity

- Supply capacity: 295.2 m^3/day = 3.417 L/s > 3.1 L/s Projected PHD

4. Required Storage Capacity

- The Woodland Beach system is not designed to provide fire protection. There is no reservoir for storage capacity.
- Additional storage is not required for direct pumping systems. The wells have sufficient capacity to meet the projected peak hour demand.

TATHAM ENGINEERING

PROJECT	Water Master Plan, Township of Tiny	FILE	123142
		DATE	July 19, 2023
SUBJECT	Water Taking Reports Summary - Wyevale	NAME	DD / JRC
		PAGE	1 OF 2

1. Summary of Historical Flow Data

- From the 2018-2022 Water Taking Reports:
  - Populations are based on population density of 2.4 ppu for Wyevale.

Year	Average Daily Demand (ADD) (m^3/day)	Maximum Daily Demand (MDD) (m^3/day)	Maximum Day Factor (MDF)	Population*	Average Per Capita Consumption (L/p/day)
2018	283	893	3.2	698	405
2019	249	768	3.1	698	356
2020	259	843	3.3	698	371
2021	298	865	2.9	698	426
2022	250	632	2.5	698	357
3 Year Average / Max	**269**	**865**	**3.3**	**-**	**385**

**Assuming there has been no population growth since 2022.*

2. Projected Developments & Infilling

- From received 2022 data of 2.4 ppu for 291 existing connections and 21 vacant lots:

	Connections	Population**	Average Per Capita Consumption (L/p/day)*	ADD* (m^3/day)	MDF*	MDD (m^3/day)	PDF**	PHD (L/s)
Existing	291	698	-	269	-	865	4.13	12.8
Vacant lots	21	50	385	19	3.3	63		
Total	312	749	-	288	-	928	4.13	13.8

**Per capita consumption, ADD, and MDF are based on the 3-year average/max value.*

MDD for future residential units is estimated to be:

385 L/p/day x 3.3 MDF x 2.4 ppu = 3,005 L/unit/day

3. Existing Capacity of Process and Pumping Components

- From the DWWP Issue 4, MDWL Issue 4 and QMS QP-06-17, QP-06-24 and QP-06-29:

Pump Station 17

- System type: Direct Pumping
- Rated capacity: 527 m^3/day.
- Well 17-1 Maximum flow rate of: 259.0 m^3/day = 3.0 L/s
- Well 17-2 Maximum flow rate of: 527.04 m^3/day = 6.1 L/s
- Well 17-3 Maximum flow rate of: 259.0 m^3/day = 3.0 L/s
- Chlorine Contact Pipe: 110 m of 250 mm dia. pipe. Contact time: 5.4 m^3.

Pump Station 29

- System type: Direct Pumping
- Rated capacity: 655 m^3/day.
- Well 29-1 Maximum flow rate of: 655.2 m^3/day = 7.583 L/s
- Well 29-2 Maximum flow rate of: 982.08 m^3/day = 11.37 L/s

- Chlorine Contact Pipe: 139 m of 250 mm dia. pipe. Contact time: 6.8 m^3.

Booster Pumping Station 24 and Reservoir

- System type: Booster Pumping Station and Reservoir
- Population Service Capacity: 219
- Reservoir Volume: 274 m^3.
- One (1) multistage centrifugal jockey high-lift pump rated 424 L/min at 53.3 m TDH.
- Two (2) centrifugal high-lift pumps rated 948 L/min at 53.3 m TDH.

Total Firm Groundwater Supply Capacity

- Supply capacity: 1700 m^3/day = 19.68 L/s > 13.8 L/s Projected PHD

4. Required Storage Capacity

- The Wyevale system is designed to provide fire protection until the reservoir is depleted after which the Township applies a tanker shuttle operation. Existing storage capacity is only available at Booster Pump Station 24.

- From the 2008 MECP Design Guidelines for Drinking Water Systems Section 8.4.2, treated water storage for systems providing fire protection:

  Total Treated Water Storage Requirement = A + B + C

  Where A = Fire Storage

  B = Equalization Storage (25% of maximum day demand); and

  C = Emergency Storage (25% of A + B)

  - The Design Guidelines Section 8.4.2 Table 8-1 suggests a Fire Storage (A) of **274** m3 for a total projected population of 749 .
  - The Equalization Storage (B) is **232** m3.
  - The Emergency Storage (C) is **126** m3.

- From the MOE Procedures for Disinfection of Drinking Water in Ontario, additional storage is required for chlorine contact time and process water. The storage is provided in Pump Station 17 and 29 by a contact main before entering the distribution system.

- Total Treated Water Storage Requirement = 274 + 232 + 126

  = **632** **m^3**

- There is insufficient spare capacity in the system. The storage will require resizing to accommodate the additional 358 m3.

Appendix B: Consultation Notices, PIC, and Correspondence

TOWNSHIP OF/CANTON DE Tiny

130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
705-526-4204 • www.tiny.ca/news

Public Notice

Water Treatment and Servicing Master Plan Municipal Class Environmental Assessment – Notice of Study Commencement

Date: July 28, 2023

TAKE NOTICE that the Township of Tiny is undertaking a Master Plan Class Environmental Assessment (Master Plan) to identify the preferred approaches and solutions for the supply and treatment of municipal drinking water to existing and future residents. The Master Plan will develop and evaluate options for increasing the resiliency of the township's 16 municipal drinking water systems and for expansion of the systems to accommodate anticipated growth in Tiny.

The Master Plan will be completed in accordance with the Master Plan requirements following Approach No. 1 of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011, 2015 and 2023).

To ensure that anyone interested in this study has the opportunity to get involved and provide input, public consultation will take place over the course of the study, including two Public Information Centres. Visit the project webpage at https://www.tiny.ca/WaterMasterPlan to stay informed. Residents and interested parties can subscribe to the Township of Tiny website's News and Updates webpage (www.tinyconnect.ca) to be informed of updates and notices via email, text, voice mail, or TTY/TDD.

If you have any questions or concerns, and/or would like to be added to the study's direct mailing list, please contact the study representative below:

Jason Covey
Tatham Engineering Limited
Senior Engineer
115 Sandford Fleming Drive, Suite 200
Collingwood, ON, L9Y 5A6
T: 705-444-2565 ext. 2018
E: jcovey@tathameng.com

Comments and information received during this Class EA are collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act (MFIPPA).* All comments will be part of the public record.

For media inquiries, contact:
Jacqueline Brown, Communications Officer
jbrown@tiny.ca • 705-526-4204 ext. 284

123142 Water Master Plan, Township of Tiny
Mailing List
Last updated 2023-07-05

Municipalities	Job Title	Contact Suffix	Contact First Name	Contact Last Name
Township of Tiny - Office of the Chief Administrative Officer	Chief Administrative Officer	Mr.	Robert	Lamb
Township of Tiny - Planning and Development	Senior Planner	Ms.	Sandra	Mattson
Township of Tiny - Council & Committees	Councillor	Mr.	Dave	Brunelle
Township of Tiny - Council & Committees	Councillor	Mr.	Kelly	Helowka
Township of Tiny - Council & Committees	Councillor	Mr.	Steffen	Walma
Tay Township - Operational Services	GM Operational Services/Manager of Engineering Services	Mr.	Shawn	Berriault
Town of Midland - Environment & Infrastructure	Deputy CAO, Executive Director of Environment & Infrastructure	Mr.	Andy	Campbell
Township of Georgian Bay - Office of the Chief Administrative Officer	Chief Administrative Officer	Mr.	Greg	Mariotti
Town of Penetanguishene - Corporate Services Department	Clerk, Deputy CAO	Ms.	Stacy	Cooper
Township of Springwater - Infrastructure & Operational Services Department	General Manager, Infrastructure & Operational Services	Mr.	Mahesh	Ramdeo
Town of Wasaga Beach - Engineering	Manager of Engineering Services	Mr.	Mike	Pincivero
County of Simcoe - Administration Centre	County Clerk	-	-	-
Local Agencies	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Simcoe County District School Board	Manager of Planning	Mr.	Andrew	Keuken
Simcoe Muskoka Catholic District School Board	Controller of Planning, Facilities and Student Transportation	Mr.	Allen	Morrison
Simcoe Muskoka District Health Unit	Medical Officer of Health	Mr.	Charles	Gardner
Severn Sound Environmental Association	Executive Director	Ms.	Julie	Cayley
Provincial Agencies	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Ministry of the Environment, Conservation and Parks - Central Region Office	Regional Director	Dr.	Rachael	Fletcher
Ministry of the Environment, Conservation and Parks - Barrie District Office	District Manager	Mr.	Chris	Hyde
Ministry of the Environment, Conservation and Parks - EA Coordinator	Regional Environmental Planner - Central Region	Ms.	Chunmei	Liu
Ministry of Municipal Affairs and Housing	Manager (acting), Community Planning and Development	Mr.	Erick	Boyd
Ministry of Municipal Affairs and Housing - Provincial Policies and Planning Unit	Senior Planner	Mr.	John M.	Taylor
Ministry of Northern Development, Mines, Natural Resources and Forestry - Midhurst District	District Manager	Mr.	Dan L	Thompson
Ministry of Northern Development, Mines, Natural Resources and Forestry - Midhurst District	District Planner	Mr.	Ken	Mott
Ministry of Transportation - Central Operations Division	Director	Ms.	Becca	Lane
Ministry of Transportation	Project Engineer			
Ministry of Indigenous Affairs - Indigenous Relations and Programs Division	Executive Advisor		Ayn	Cooney
Ministry of Heritage, Sport, Tourism and Culture Industries	Team Lead (A), Heritage	Ms.	Karla	Barbozza
Ministry of Heritage, Sport, Tourism and Culture Industries- Regional and Corporate Services Division, Midhurst Office	Regional Development Advisor	Ms.	Caitlin	Andrews
Ontario Heritage Trust				Sir/Madam
Infrastructure Ontario	President, Real Estate	Mr.	Toni	Rossi
Ministry of Indigenous Relations and Reconciliation - Assistant Deputy Minister's Office - Strategic Policy and Planning Division	Manager		Lareina	Rising
Ministry of Indigenous Relations and Reconciliation	Special Policy Advisor	Ms.	Emma	Jarvis
Ministry of Agriculture, Food and Rural Affairs - Central Region	Land Use Policy & Stewardship	Mr.	David	Marriott
Federal Agencies	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Indigenous Services Canada - Sustainable Infrastructure Planning, Regional	Program Manager	Mr.	Derek	Nadeau
Environment and Climate Change Canada	Manager	Mr.	Rob	Dobos
Environment and Climate Change Canada	Manager, Environmental Assessment Section Environmental Protection Branch – Ontario Region	Mr.	Wes	Plant
Utilities	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Rogers	System Planner	Mr.	Jason	Dwyer
Eastlink	Outside Plant Design	Mr.	Christopher	Henningsen
Enbridge	Advisor, Construction and Project Management	Mr.	Kevin	Schimus
Hydro One	Supervising Planning Technician	Ms.	Sarah	Szymczak
First Nations Groups	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Chippewas of Georgina Island	Chief		Donna	Big Canoe
Beausoleil First Nation	Chief		Joanne	Sandy
Chippewas of Mnjikaning First Nation (Rama)	Chief		Ted	Williams
Chippewas of Mnjikaning First Nation (Rama)	Community Consultation		Ben	Benson
Williams Treaties First Nations	Coordinator/Barrister, Solicitor	Ms.	Karry	Sandy-McKenzie
Huron-Wendat Nation	Grand Chief		Rémy	Vincent
Great Lakes Metis Council	President		Peter	Coture
Saugeen Ojibway Nation Environment Office (SON)	Resources and Infrastructure Manager		Emily	Martin
Métis Nation of Ontario - Gravenhurst Branch				
Alderville First Nations Chief			Dave	Simpson
Curve Lake First Nations	Consultation Liason		Kaitlin	Hill
Georgian Bay Metis Council				
Great Lakes Métis Council	Consultation Assessment Coordinator		James	Wagar
Hiawatha First Nation	Lands and Resource Consultation		Sean	Davison
Historic Saugeen Métis	President		Archie	Indoe
Mississaugas of Scugog Island	Chief		Kelly	Larocca
Other	**Job Title**	**Contact Suffix**	**Contact First Name**	**Contact Last Name**
Deanlea Beach Association			Connie	Wheeler

TOWNSHIP OF/CANTON DE Tiny

130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
705-526-4204 • www.tiny.ca/news

Public Notice

Water Treatment and Servicing Master Plan Municipal Class Environmental Assessment – Notice of Public Information Centre No. 1

Date: August 14, 2023

TAKE NOTICE that the Township of Tiny is undertaking a Master Plan Class Environmental Assessment (Master Plan) to identify the preferred approaches and solutions for the supply and treatment of municipal drinking water to existing and future residents. This assessment will develop and evaluate options for increasing the resiliency of the township's 16 municipal drinking water systems and for expansion of the systems to accommodate anticipated growth in Tiny.

The Master Plan follows the requirements of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment (October 2000, amended in 2007, 2011, 2015, and 2023).

Public Information Centre No. 1

A Public Information Centre (PIC) will be held in-person and virtually to present the drinking water infrastructure needs and concerns. There will be a PowerPoint presentation followed by a question-and-answer period.

Date: Monday August 28, 2023

Time: 6:00 p.m. to 8:00 p.m.

In-person location: Township of Tiny Council Chambers, 130 Balm Beach Road West

Virtual attendees can join the meeting by accessing the Zoom link that will be available on the project webpage at www.tiny.ca/WaterMasterPlan. The presentation will be recorded and posted on the project webpage following the PIC.

Comments will be accepted until September 14, 2023, by email at jcovey@tathameng.com. As well, comments can be submitted during the PIC or by using the online comment form that will be linked on the project webpage. Following this PIC, comments will be reviewed, and alternative solutions will be developed and evaluated based on the information received. A second PIC will be held to present the alternative solutions, if required.

Residents and interested parties can subscribe to the Township of Tiny's notification system online at www.tinyconnect.ca to be informed of updates and notices via email, text, voice mail, or TTY/TDD.

For media inquiries, contact:
Jacqueline Brown, Communications Officer
jbrown@tiny.ca • 705-526-4204 ext. 284

Public Notice

130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
705-526-4204 • www.tiny.ca/news

For more information about the Master Plan development or the PIC, visit Tiny's website at www.tiny.ca/WaterMasterPlan.

If you have any questions or concerns, and/or would like to be added to the study's direct mailing list, please contact the study representative:

Jason Covey
Tatham Engineering Limited
Senior Engineer
115 Sandford Fleming Drive, Suite 200
Collingwood, Ontario, L9Y 5A6
E: jcovey@tathameng.com
T: 705-444-2565 ext. 2018

Comments and information received during this Class EA are collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. All comments will be part of the public record.

For media inquiries, contact:
Jacqueline Brown, Communications Officer
jbrown@tiny.ca • 705-526-4204 ext. 284

TOWNSHIP OF/CANTON DE Tiny

WATER TREATMENT & SERVICING MASTER PLAN PIC #1

TATHAM ENGINEERING

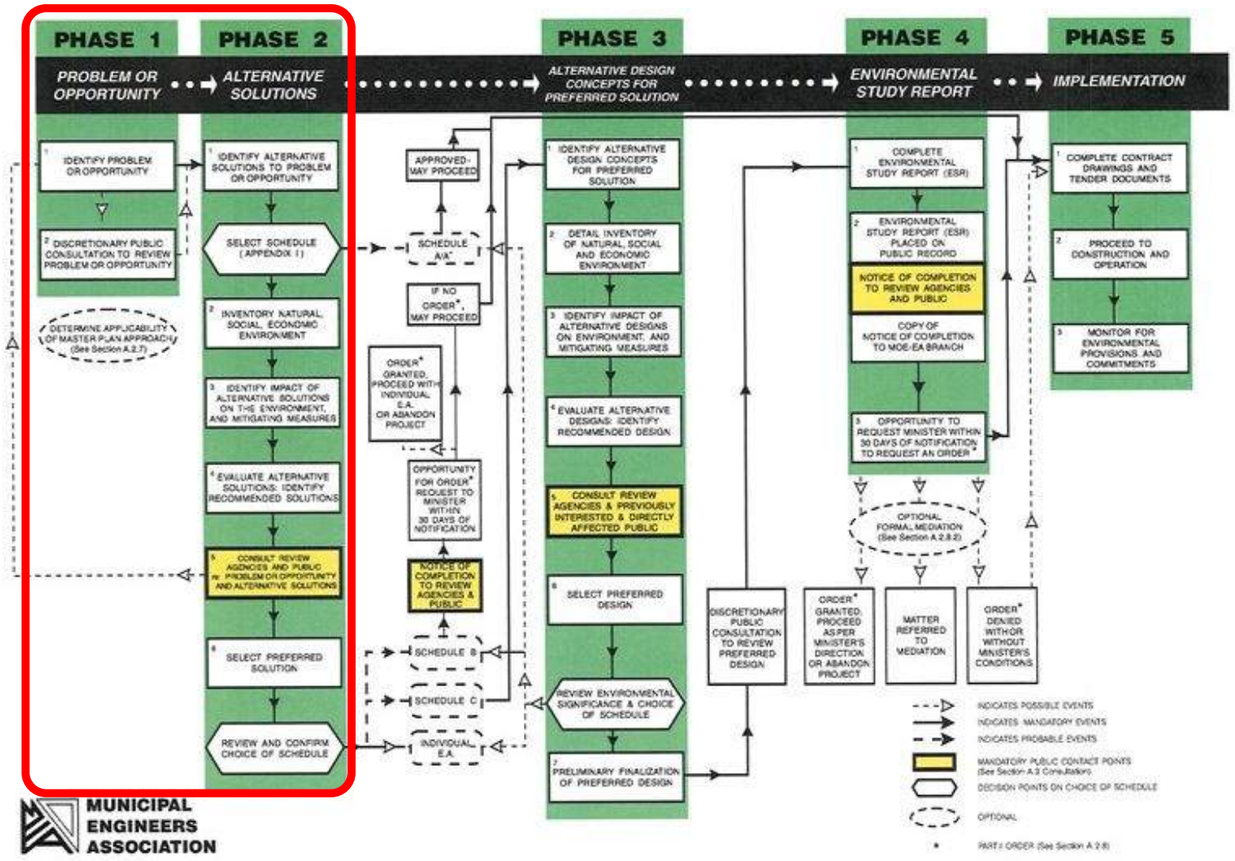
August 28, 2023

STUDY OBJECTIVES

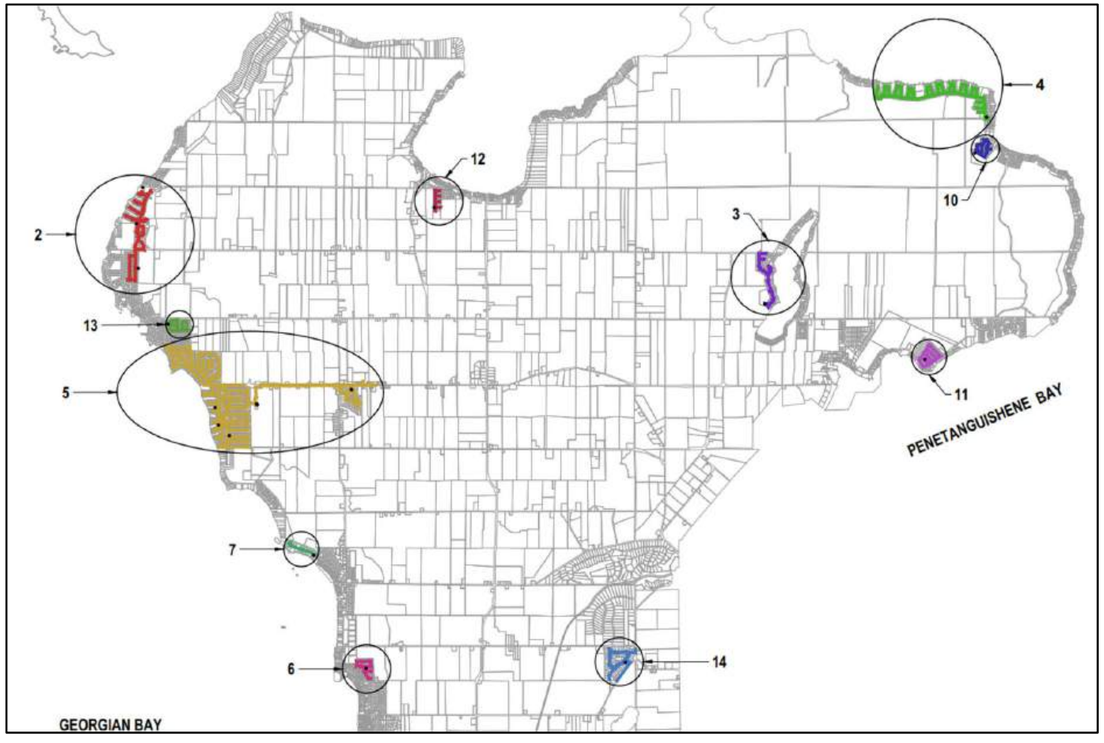
- Long term strategies for supply of municipal drinking water to existing and future residents
- Improve reliability and resiliency of 16 existing municipal water systems
- Consider opportunities for expansion and/or joining of individual water systems
- Plan for the next 20 years

MASTER PLAN CLASS EA

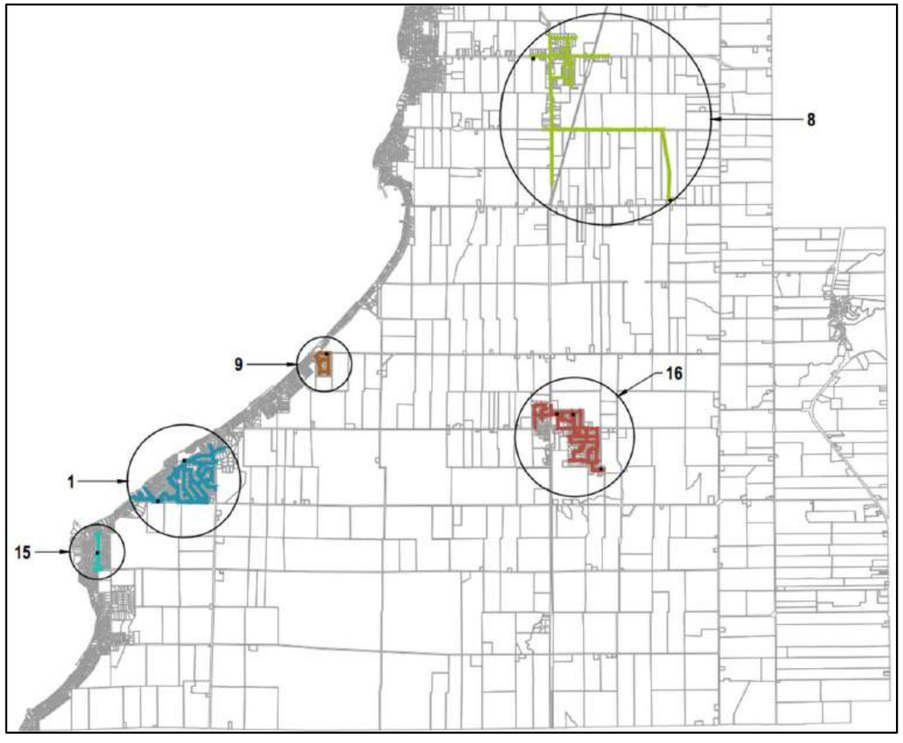
- Municipal Class EA Process
  - Phase 1:
    - Serviced population projections
    - Development of design criteria
    - Treatment and infrastructure needs
  - Phase 2:
    - Develop and evaluate servicing alternatives
    - Recommend solutions
    - Develop Master Plan Report



EXISTING DRINKING WATER SYSTEMS



Northern half of Tiny Township



Southern half of Tiny Township

Legend

1 BLUEWATER
2 CASTLE COVE
3 COOKS LAKE
4 GEORGIAN BAY ESTATES
5 LAFONTAINE
6 LEFAIVE
7 PENNORTH
8 PERKINSFIELD
9 RAYKO
10 SAWLOG BAY
11 TEE PEE POINT
12 THUNDER BAY
13 VANIER WOODS
14 WHIP-POOR-WILL
15 WOODLAND BEACH
16 WYEVALE

TINY POPULATION AND GROWTH*

Water System	Existing Population	Projected Population
BLUEWATER	773	989
CASTLE COVE	403	638
COOKS LAKE	221	247
GEORGIAN BAY ESTATES	612	838
LAFONTAINE	2086	2436
LEFAIVE	166	209
PENNORTH	77	94
PERKINSFIELD	502	526

Water System	Existing Population	Projected Population
RAYKO	101	125
SAWLOG BAY	122	168
TEEPEE POINT	226	233
THUNDER BAY	58	89
VANIER WOODS	175	247
WHIPPOORWILL	170	175
WOODLAND BEACH	89	108
WYEVALE	698	749

*Populations include both year-round and seasonal residents

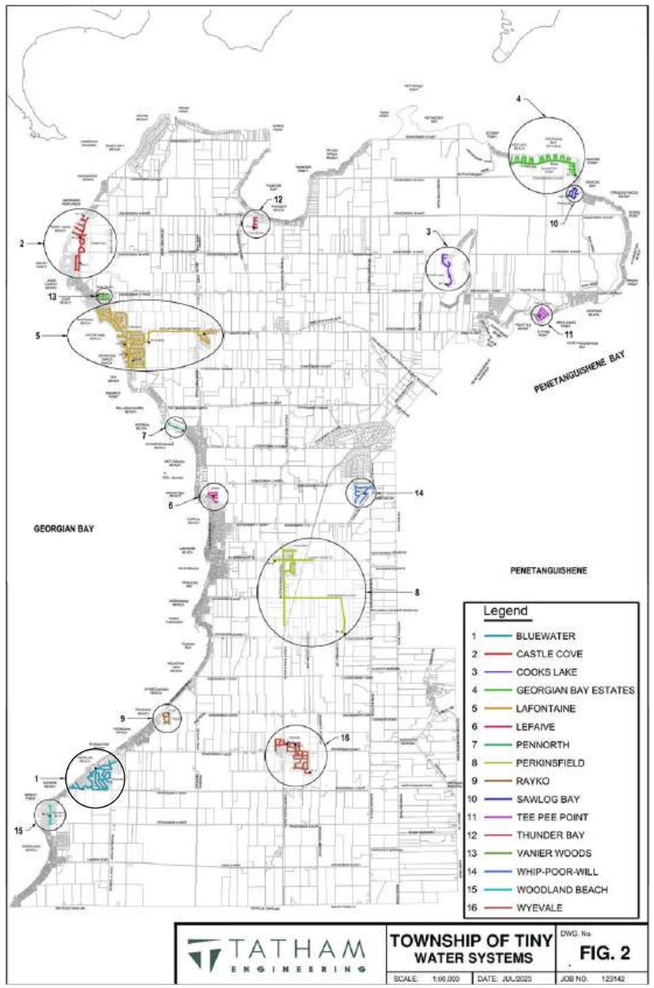
WATER CONSUMPTION IN TINY

Water System	*3-yr Average Per Capita Consumption (L/p/day)	Water System	*3-yr Average Per Capita Consumption (L/p/day)
BLUEWATER	303	RAYKO	272
CASTLE COVE	341	SAWLOG BAY	221
COOKS LAKE	404	TEEPEE POINT	217
GEORGIAN BAY ESTATES	342	THUNDER BAY	288
LAFONTAINE	498	VANIER WOODS	223
LEFAIVE	203	WHIPPOORWILL	513
PENNORTH	206	WOODLAND BEACH	326
PERKINSFIELD	381	WYEVALE	385

*Average daily residential use per capita in Ontario ranged from 208 to 172 L/p/day from 2011 to 2019
https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3810027101

OVERALL ISSUES WITH MUNICIPAL WATER SYSTEMS

- Aging infrastructure:
  - Most water systems were installed 40 to 60 years ago
  - Reduced reliability and functionality of instrumentation and control systems
  - Corrosion of electrical panels and other equipment
  - Small diameter, thin-wall watermains and services require replacement
- Systems designed to provide low or limited fire protection
- Difficult to flush water distribution systems effectively
- Some systems with limited redundancy and operational flexibility
- System resiliency could be improved



BLUEWATER NEEDS & OPPORTUNITIES

- Served by 3 wells, 2 pump houses, PH 8 and PH18 with reservoir
  - PH 18 is the primary water supply
  - PH 8 cannot meet summer demands
- Future needs:
  - Small cottages being replaced with larger homes
  - Service 90 vacant lots
  - Need additional treated water storage
- No water quality concerns
- Equipment concerns:
  - PH 8 has no standby generator
  - PH 18 generator needs new automatic transfer switch

CASTLE COVE NEEDS & OPPORTUNITIES

- Served by 5 wells and 3 pump houses (PH4, PH13 and PH 30)
  - PH 4 recently built (2018); PH 30 (2012)
  - PH 4, PH 13, and PH 30 need to operate together to meet peak water demands
  - No fire protection capacity
- Future needs:
  - Small cottages being replaced with larger homes
  - Service 98 vacant lots
  - Improve redundancy and operational flexibility
- Water quality concerns
  - Elevated and gradually rising nitrate levels in wells 13-1 and 13-2
- Equipment concerns
  - Electrical overloads: need frequent equipment replacement
  - Watermain breaks and distribution system valve failures
- Potential for connection to Vanier Woods and Lafontaine systems

COOK'S LAKE NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 12
  - High water consumption
  - Firm supply capacity insufficient for domestic water demands
  - Existing reservoir unused
  - No fire protection capacity
- Future needs:
  - Service 11 vacant lots
  - Need to upgrade with reservoir and high lift pumps
- Equipment concerns:
  - Small diameter well
  - Well not plumb / misaligned: difficult to remove pump & level probe
  - Frequent well pump failure due to frequent pump starts
  - Distribution system has large range of elevation; pressure drops quickly with pump house offline.

GEORGIAN BAY ESTATES NEEDS & OPPORTUNITIES

- Served by 3 wells and pump house 19 with reservoir
  - All wells need to run concurrently to meet water demand and fill reservoir
- Future needs:
  - Conversion of cottages to year-round homes
  - Service 94 vacant lots
  - Increase groundwater supply
  - Improve redundancy and operational flexibility

- Equipment concerns:
  - 3 small diameter wells
    - One makes sand, one has liner, one has reduced capacity
    - Limited space to construct replacement wells
- Frequent high lift pump motor burn out
- UV units near end of life
- Long trunk watermain
  - Concern with reliability if watermain breaks
- Frequent service connection leaks and breaks

LAFONTAINE NEEDS & OPPORTUNITIES

- Served by 6 wells, 3 pump houses (PH 2, PH 14 and PH 23), and elevated storage tank and booster station
  - High water consumption
  - Well 14-1 capacity reduced by 50%
  - PH 23 is the only supply for the upper zone
  - PH 2 can only be offline for short period of time
- Future needs:
  - Conversion of cottages to year-round homes
  - Service 146 vacant lots
  - Improve redundancy and operational flexibility
  - Need additional treated water storage
- Water quality concerns:
  - Elevated nitrate in Wells 23-1, 23-4 & 14-1
  - Nitrate increasing in Wells 2-1 and 2-2
- Equipment concerns:
  - Corrosion of PH 23 piping
  - Corrosion of PH 2 main electrical disconnect enclosure
  - Leaks in water distribution system
    - Ongoing replacement program
  - Communication of monitoring and alarms at booster station
- Potential for connection to Castle Cove and Vanier Woods systems

LEFAIVE NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 3
  - PH 3 in good condition
  - Firm well capacity sufficient to meet water demands
  - No fire protection capacity
- Future needs:
  - Service 18 vacant lots
  - Can be met with existing system
- No water quality concerns
- Old, thin-walled watermains to be replaced next year.

PENNORTH NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 7
  - Firm well capacity sufficient to meet water demands
  - No fire protection capacity
- Future needs:
  - Service 7 vacant lots
  - Residences with private wells on Township property
  - Increase water system capacity
  - Improve redundancy and operational flexibility
- Equipment concerns:
  - PH 7 has asbestos in walls and ceiling
  - Old piping and valves need to be replaced
- Long trunk watermain
  - Concern with reliability if watermain breaks

PERKINSFIELD NEEDS & OPPORTUNITIES

- Served by 3 wells and 2 pump houses, PH 22 and PH 26, both with reservoirs
  - Well 26-4 not in use
  - High water usage due to lawn watering
  - Current firm groundwater capacity insufficient
- Future needs:
  - Service 10 vacant lots
  - Improve redundancy in groundwater supply
- Water quality concerns:
  - High THMs out of reservoir; mixing valve installed
  - Dirty water complaints, addressed by swabbing program
- Equipment concerns:
  - Lack of lifting system for high lift pumps
  - No standby power at PH 22
  - Corroded piping
  - Need air relief valves on raw water lines from wells

RAYKO NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 6
  - Capacity with both wells is insufficient to meet peak water demands
  - High overnight flows due to lawn watering
  - Reservoir on site is not in use
  - Limited space for additional wells
  - No fire protection capacity
- Future needs:
  - Service 10 vacant lots
  - Increase water supply capacity
- Water quality concerns:
  - Dirty water complaints
- No equipment concerns

SAWLOG BAY NEEDS & OPPORTUNITIES

- Served by 2 wells, pump house 16, and reservoir
  - System capacity sufficient to meet water demands
- Future needs:
  - Conversion of cottages to year-round homes
  - Service 9 vacant lots
  - Improve system redundancy and operational flexibility
- Water quality concerns:
  - Groundwater has high iron and manganese, sulfur odor
- Equipment concerns:
  - Issues with flow control valves and foot valve in reservoir
  - Electrical system is old and corroded

TEEPEE POINT NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 9
  - System capacity is insufficient to meet peak water demands
  - No fire protection capacity
- Future needs:
  - Service 3 vacant lots
  - Increase water system capacity
- Water quality concerns:
  - Groundwater is hard, has high sodium and has iron, manganese, organics and odour
  - Distribution system flushing ineffective
- Equipment concerns:
  - Wells not automatically alternating without PLC
  - Corroded electrical panels
  - Drain lines and piping to be replaced

THUNDER BAY NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 20
  - System capacity is sufficient to meet peak water demands
  - No fire protection capacity
- Future needs:
  - Service 13 vacant lots
  - Increase in water system capacity may be needed to meet future peak water demands
- Equipment concerns:
  - PH 20 has asbestos in ceiling tiles
  - Long trunk watermain
    - Concern with reliability if watermain breaks

VANIER WOODS NEEDS & OPPORTUNITIES

- Served by 2 wells, pump house 15 with reservoir
  - System capacity sufficient to meet water demands
  - No fire protection capacity
- Future needs:
  - Cottages being replaced with larger homes
  - Serve 30 vacant lots
  - Can be met with existing system
- No water quality concerns
- No equipment concerns
  - Recent upgrades to some treated water piping
- Potential for connection to Castle Cove and Lafontaine systems

WHIPPOORWILL NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 21 with reservoir
  - High water consumption
  - System can meet the domestic water demands
  - Limited fire protection capacity
- Future needs:
  - Service 2 vacant lots
  - Install water meters
- No water quality concerns
- Equipment concerns:
  - Wells not plumb / misaligned: difficult to remove pump & level probe

WOODLAND BEACH NEEDS & OPPORTUNITIES

- Served by 2 wells and pump house 25
  - System capacity sufficient to meet domestic water demands
  - No fire protection capacity
- Future needs:
  - Service 8 vacant lots
- No water quality concerns
- No equipment concerns

WYEVALE NEEDS & OPPORTUNITIES

- Served by 5 wells, 2 pump houses (PH17 and PH 29), a reservoir and booster station
  - High water consumption
  - Water meters recently installed
  - Need both PHs to meet maximum day demand
- Future needs:
  - Serve 21 vacant lots or unserviced lots
  - Need additional treated water storage
- Equipment concerns:
  - No backup power at PH 17 and at reservoir
  - Mold in the ceiling at reservoir
  - Piping upgrades at PH 17

NEXT STEPS IN MASTER PLAN STUDY

Phase 1

- Review all input received from public, review agencies, and stakeholders
- Revise issues and needs
- Phase 1 Report - September 2023

Phase 2

- Develop and assess alternatives
- PIC No. 2 - December 2023
- Finalize assessment and recommendations
- Master Plan Report - February 2024
- Notice of Completion of Master Plan
- Public review period

THANK YOU FOR YOUR INPUT

Jason Covey
115 Sandford Fleming Drive
Suite 200
Collingwood, Ontario, L9Y 5A6
Tel: 705-444-2565 ext. 2018
Email: jcovey@tathameng.com

TOWNSHIP OF/CANTON DE Tiny

TATHAM ENGINEERING

TINY TOWNSHIP WATER TREATMENT AND SERVICING MASTER PLAN
CLASS ENVIRONMENTAL ASSESSMENT

PUBLIC INFORMATION CENTRE No. 1 – AUGUST 28, 2023

SIGN-IN SHEET

#	NAME	COMPANY	ADDRESS	PHONE #	EMAIL
1	Lyn Meschino	Resident	[redacted]		
2	Tad Phelps	Resident			
3	Chester Battisig	"			
4	Jim Simpson	RESIDENT			
5	Sue Silversides	Resident			
6	ANDRÉ PEPIN	TOWN OF MIDLAND			
7					
8					
9					
10					
11					
12					

TINY TOWNSHIP WATER TREATMENT AND SERVICING MASTER PLAN
CLASS ENVIRONMENTAL ASSESSMENT

PUBLIC INFORMATION CENTRE No. 1 – AUGUST 28, 2023

#	NAME	COMPANY	ADDRESS	PHONE #	EMAIL
13	Jessie Gadard	Resident	[redacted]		
14	Ray Stewart	Res.			
15	Pam Fulford	Res			
16	Cyndi Brown	Resident			
17	Jaymie Brown	Resident			
18	ROMAN CZYRSA	Resident			
19	DAVE BRUNELLE	RESIDENT			
20					
21					
22					
23					
24					
25					

Jason Covey

From: Jason Covey
Sent: Thursday, July 6, 2023 2:28 PM
To: Drew Deduro
Cc: Collingwood File
Subject: FW: Water Main Service (123142)

Hi Drew - Please add Gary Marchand to the Tiny WMP mailing list (email address below). He is a local property owner.

Jason

-----Original Message-----
From: Jean-François Robitaille, P.Eng. <jrobitaille@tiny.ca>
Sent: Wednesday, July 5, 2023 6:57 PM
To: Gary Marchand [redacted]
Cc: Jason Covey <jcovey@tathameng.com>
Subject: RE: Water Main Service

Hi Gary,
The Township is actually doing a Water Master Plan this year. Part of this plan is to see what interest there is from the public for municipal water in areas that aren't currently connected. There will be surveys and meetings later this summer asking for public input. I've copied your email and info to the project manager for that study.

Regards,
Jean-François Robitaille, P.Eng.
Engineering Manager
Public Works Department
The Corporation of the Township of Tiny
130 Balm Beach Road West, Tiny, Ontario, L0L 2J0 jrobitaille@tiny.ca
705.526.4204 ext. 238
EN: This email message and any attachments are intended only for the named recipient(s) above and may contain information that is privileged, confidential and/or exempt from disclosure under the Municipal Freedom of Information and Protection of Privacy Act. If you have received this message in error, please notify the sender immediately and delete this email message from your computer. | FR: Cette communication et tout document en annexe sont uniquement à l'intention du destinataire mentionné ci-dessus et peuvent contenir des renseignments de nature privilégiée, confidentielle ou exempte de la divulgation en vertu de la Loi sur l'accès à l'information municipale et la protection de la vie privée. Si vous avez reçu ce message par inadvertance, veuillez en aviser immédiatement l'expéditeur et supprimer ce message de votre ordinateur.
-----Original Message-----
From: Gary Marchand [redacted]
Sent: July 5, 2023 5:14 PM
To: Jean-François Robitaille, P.Eng. <jrobitaille@tiny.ca>
Subject: Water Main Service

Hello Sir: Can you please advise if and when township water service will be available to cottages along TinyBeaches road north. This is gone on far to long and having been a cottage rat Balm Beach for 45 years it really needs to change.
Are there any plans to move forward with town water services availability?
I would like to know who speak with to see why this is not on any business plan or project.

If you can provide me with a name to direct this request to it would be greatly appreciated.

Thank-you
Gary Marchand
Sent from my iPad

Jason Covey

From: Jason Covey
Sent: Friday, August 25, 2023 11:40 AM
To: Gary Marchand
Cc: Rebecca Raymond, C.E.T.; Jean-François Robitaille, P.Eng.
Subject: RE: Township of Tiny - Water Master Plan - Notice of Public Information Centre No. 1 (Tatham File No 123142)

Hi Gary,

Thanks for your email and for your interest in the study.

I believe you previously provided your cottage location as in Balm Beach on Tiny Beaches Road North – do I have that information correct? If so, the closest municipal water system would be the Perkinsfield water system, approximately 2 to 3 km away. Are you currently on a private well?

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Gary Marchand [redacted]
Sent: Sunday, August 20, 2023 8:12 PM
To: Paulette Trefry <ptrefry@tathameng.com>
Cc: Jason Covey <jcovey@tathameng.com>
Subject: Re: Township of Tiny - Water Master Plan - Notice of Public Information Centre No. 1 (Tatham File No 123142)

Thank you for your email as , I really would like to discuss my concerns regarding water service to the cottage . I hope you understand that this a very priority to myself and my family. I need to know the wheels are motion to get this done. My concern is for health and safety regarding fire protection and hygiene.
Please contact me directly for updates and other related matters.
Thank you
Gary Marchand
[redacted]

Sent from my iPad

On Aug 14, 2023, at 11:18 AM, Paulette Trefry <ptrefry@tathameng.com> wrote:

> Please find attached Notice of Public Information Centre No. 1.
>
> Please contact Jason Covey if you have any questions or require additional information.
>
> Thank you.

<resize_september2022_f48697d7-56ec-47fd-a71f-8c52537560a2.jpg>

Paulette Trefry
Senior Administrative Assistant

ptrefry@tathameng.com **T** 705-645-7756 x2088
8 Barron Drive, Bracebridge, Ontario P1L 0H3

tathameng.com <linkedinemailsignature-march2023-01_c089bbdd-004b-4faf-9f6b-cd45e91498cc.png> <instagramemailsignature-march2023-01_b5a095b2-91ef-4380-b089-c29f83e2ec58.png> <facebookemailsignature-march2023-01_a1cd4b13-d557-47d7-a9e2-5fbd383de1a3.png>

<6_1ace3c6b-cecb-4070-849f-0f80a769a8d7.png>

<08-14-2023 - Public Notice - WMP Class EA – Notice of PIC No. 1 - Final.pdf>

Jason Covey

From: Paulette Trefry
Sent: Thursday, July 13, 2023 2:58 PM
To: Collingwood File
Subject: FW: Township of Tiny - Water Treatment and Servicing Master Plan - Notice of Study Commencement (Tatham File No. 123142)
Attachments: MECP Aknwlgnt of NOC - MEA Class EA - Tiny Water Treatment and Servicing Master Plan.pdf; Supporting Attachment - Proponent's Intro to Delegation of Procedural Aspects of Consultation with Aboriginal Communities.pdf; Supporting Attachment - Species at Risk Proponents Guide to Preliminary Screening (May 2019).pdf

From: Liu, Chunmei (MECP) <Chunmei.Liu@ontario.ca>
Sent: Thursday, July 13, 2023 2:43 PM
To: Paulette Trefry <ptrefry@tathameng.com>; Collingwood File <file@tathameng.com>; Jason Covey <jcovey@tathameng.com>
Cc: Battarino, Gavin (MECP) <Gavin.Battarino@ontario.ca>; Hyde, Chris (MECP) <Chris.Hyde@ontario.ca>; Broeckel, Sheri (MECP) <Sheri.Broeckel@ontario.ca>; EA Notices to CRegion (MECP) <eanotification.cregion@ontario.ca>
Subject: RE: Township of Tiny - Water Treatment and Servicing Master Plan - Notice of Study Commencement (Tatham File No. 123142)

Dear Project Team,

Please find attached the information and MECP acknowledge letter sharing with you. If your project team have any questions regarding the information shared, please let us know.

Thank you,

Chunmei Liu (she/her) | Regional Environmental Planner
Environmental Assessments Branch, Ontario Ministry of the Environment, Conservation and Parks |7th Flr, 135 St Clair Ave W, Toronto, ON M4V 1P5 | Chunmei.Liu@ontario.ca | 437-249-3102

From: Liu, Chunmei (MECP)
Sent: July-12-23 11:36 AM
To: Paulette Trefry <ptrefry@tathameng.com>; Collingwood File <file@tathameng.com>
Cc: Jason Covey <jcovey@tathameng.com>
Subject: RE: Township of Tiny - Water Treatment and Servicing Master Plan - Notice of Study Commencement (Tatham File No. 123142)

Thank you for sharing the Notice of Study Commencement for this project. The ministry have a general email account for providing the Class EA notices. I have attached the introduction letter for reference. In the future, please send them through the ministry's general email account.

I'll respond you when relevant information is available.

Warm regards,

Chunmei Liu (she/her) | Regional Environmental Planner
Environmental Assessments Branch, Ontario Ministry of the Environment, Conservation and Parks |7th Flr, 135 St Clair Ave W, Toronto, ON M4V 1P5 | Chunmei.Liu@ontario.ca | 437-249-3102

We want to hear from you. How was my service? You can provide feedback at 1-888-745-8888 or ontario.ca/inspectionfeedback
Nous attendons vos commentaires. Qu'avez-vous pensé de mon service? Vous pouvez nous faire part de vos commentaires au 1-888-745-8888 ou à ontario.ca/retroactioninspection

---

From: Paulette Trefry <ptrefry@tathameng.com>
Sent: July-12-23 10:39 AM
To: Collingwood File <file@tathameng.com>
Cc: Jason Covey <jcovey@tathameng.com>
Subject: Township of Tiny - Water Treatment and Servicing Master Plan - Notice of Study Commencement (Tatham File No. 123142)

Please see attached the Notice of Study Commencement with regards to the Township of Tiny Water Treatment and Servicing Plan.

Please contact Jason Covey should you have any questions or concerns.

Thank you.

TATHAM ENGINEERING
Paulette Trefry
Senior Administrative Assistant

ptrefry@tathameng.com **T** 705-645-7756 x2088
8 Barron Drive, Bracebridge, Ontario P1L 0H3

tathameng.com

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

Instructions for Providing Class EA Notices to the Ministry of the Environment, Conservation and Parks

The following protocol for providing Class EA notifications to the Ministry of the Environment, Conservation and Parks is in effect as of **May 1, 2018.** Important information is below. Please read carefully.

You must follow the process described below and submit an electronic version of the Notice and completed Project Information Form to the appropriate Regional EA Notification email address. These email addresses are provided below.

All Notices of Commencement and Completion are to follow this process. Please feel free to pass along this information to your colleagues. Thank you.

Notification Procedure:

The Ministry of the Environment, Conservation and Parks becomes aware of streamlined environmental assessments (e.g., class environmental assessment projects, electricity projects and waste management projects) through notifications by project owners. Notifying the ministry is an important step in the streamlined environmental assessment processes. As part of the ministry's ongoing efforts to improve processes and ensure the ministry has an opportunity to provide input on projects undergoing streamlined environmental assessments, the ministry has established dedicated email accounts in each regional office. These accounts will be used to receive notices as required in your class environmental assessment process along with a new "Project Information Form". As of May 1, 2018, proponents must use this new process.

4 Step Process for Submitting Notices for Streamlined EAs

To submit your notice, you must do the following:

1. **Download and complete the Project Information Form.** (The Form can be found here under "Streamlined EAs". It is an excel spreadsheet with columns that need to be filled out by the proponent. The form has been developed for ease of use (i.e. drop-down pick list for most fields). Instructions on filling out the form are contained in 2 tabs within the form itself).

2. **Create an email. The subject line of your email must include in this order: Project location, Type of streamlined EA, and Project name**

   For example:

   - York Region, MEA Class EA, Elgin Mills Rd East (Bayview to Woodbine)
   - Durham Region, Electricity Screening Process, New Cogeneration Station
   - City of Ottawa, Waste Management Screening Process, Landfill Expansion

3. **Attach the completed Project Information Form (in excel format) and a copy of your project notice (in PDF format) to the email.**

4. **Send by email to the appropriate ministry regional office:**

   Central Region – eanotification.cregion@ontario.ca

   Eastern Region – eanotification.eregion@ontario.ca

   Northern Region – eanotification.nregion@ontario.ca

   South West Region – eanotification.swregion@ontario.ca

   West Central Region – eanotification.wcregion@ontario.ca

Notes:

- The hyperlink to the MECP District Officer Locator website, can be used to assist with determining what ministry region your project is located.
- The minimum requirement is to send project initiation and completion notices (and where applicable, Revised Notice of Completion, Notice of Filing of Addendum, Statement of Completion). All other notices (e.g. Notice of PIC/OH) can be sent to the Regional email address but not required.
- If your project is located in more than one ministry region, you need to submit your notices to all appropriate regions.

Jason Covey

From: Jason Covey
Sent: Friday, August 4, 2023 3:45 PM
To: Vickie Edgeworth-Pitcher
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Tiny Township - Water Treatment and Servicing Master Plan (123142)

Hi Vickie,

Thank you for your email comments below and for your interest in the Water Treatment and Servicing Master Plan study. The Master Plan study will focus on how to ensure the reliable supply of municipal drinking water to both existing and future residents, in and around the communities where municipal drinking water is available or could be made available. If you have any questions or comments related to the study, please feel free to send them my way. Questions related to the building permit application process would likely be best addressed by Township staff.

Best regards,
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Vickie Edgeworth-Pitcher [redacted]
Sent: Friday, July 28, 2023 1:56 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: Thank you

Thank you for this study in order to protect the existing water supply....however I'm very concerned with the explosion of new building happening Tiny. The infrastructure of hospital, police , fire department, schools, parking isn't there to support it.....and the powers that be aren't taking that into consideration when they hand out building permits..... We're a bit concerned....

Jason Covey

From: Jason Covey
Sent: Friday, August 11, 2023 3:43 PM
To: Susan Barbi
Cc: Rebecca Raymond, C.E.T.
Subject: RE: municipal water (123142)

Hi Susan,

It looks like you are just north of Concession Road 8 West and about 3.8 km from the nearest point of the Perkinsfield water system, which is the closest municipal water system to you.

While I don't want to prematurely eliminate any options this early in the study, I'm not aware of any potential opportunities to extend municipal water to your area in the near future. However, I encourage you to continue to follow along with the study's progress and provide input.

Best Regards.
Jason

From: Susan Barbi [redacted]
Sent: Saturday, August 5, 2023 5:28 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: municipal water (123142)

Hi Jason,
Thank you for your reply.
We are at [redacted] Do you think we will be included in this opportunity and if so when?
Thanks,
Susan

From: Jason Covey <jcovey@tathameng.com>
Sent: August 4, 2023 3:59 PM
To: Susan Barbi [redacted]
Cc: Rebecca Raymond, C.E.T. <rraymond@tiny.ca>
Subject: RE: municipal water (123142)

Hi Susan,

Thanks for your questions below. The Water Treatment and Servicing Master Plan will be looking at opportunities for expansion of the Township's existing municipal drinking water systems. Depending on where you are on Tiny Beaches Rd. S., expansion to your area may be considered. However, I could not comment on the time frame for expansion at this point. I have added your email to our mailing list to keep you informed and updated on the study's progress, and so that you receive a copy of the notice of our upcoming Public Information Centre. Please feel free to contact me with any other questions or comments.

Best Regards.
Jason

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Susan Barbi [redacted]
Sent: Saturday, July 29, 2023 4:58 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: municipal water

Hi Jason,
We have a home on Tiny Beaches Rd. S. We are planning to get a drilled well in Sept.
Will these plans regarding municipal water reach our area?
In other words, if we get this drilled well, will it be a useless cost in light of these future plans?
Thanks,
Susan

Jason Covey

From: Jason Covey
Sent: Wednesday, August 16, 2023 4:30 PM
To: Collingwood File
Subject: FW: Webform submission from: Water Master Plan > Content rows (123142)

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, August 15, 2023 8:54 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 08/15/2023 - 08:54

Submitted by: Anonymous

Submitted values are:

Comments & Questions
My comment is that seasonal residents should pay the same as full time residents, they have the service provided to them. Why should the full time residents Carry 75% of the cost? This is why I'm against a metering system. The cost of implementing this and continuing cost afterwards doesn't make sense. Split the cost as we have in the past is much fairer than try to push the cost on us full time residents. Thank you

Jason Covey

From: Jason Covey
Sent: Wednesday, August 16, 2023 4:29 PM
To: Collingwood File
Subject: FW: Webform submission from: Water Master Plan > Content rows (123142)

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, August 15, 2023 11:27 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 08/15/2023 - 11:26

Submitted by: Anonymous

Submitted values are:

Comments & Questions
How do I determine if my property will be impacted or included in the proposal. Is there a map?

Jason Covey

From: Jason Covey
Sent: Tuesday, September 5, 2023 2:26 PM
To: [redacted]
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your comments below. We are aware of the water takings for the purpose of farm irrigation in the Township. The potential impacts to groundwater resources will be considered in relation to current and future water taking from nearby municipal wells.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Wednesday, August 16, 2023 4:58 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Wed, 08/16/2023 - 16:58

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions

Will you be considering the impact on our groundwater supply as a result of the 4-6 large watering wheels on potato fields around Conc 16-19 West. Each wheel is licensed for 1.5 million litres a day! Nestle near London was castigated for trying to take 1.5 million a day for DRINKING! We are allowing 6-10 million litres a day for POTATOES!

Jason Covey

From: Jason Covey
Sent: Friday, August 25, 2023 11:13 AM
To: [redacted]
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi Annice,

Thank you for your comments and questions below. The focus of the Water Treatment and Servicing Master Plan study is the supply of municipal drinking water to township residents. Sewage treatment and disposal in the Township will be a consideration when it comes to assessing potential solutions for expanding or improving the Township's drinking water system. Alternative sewage treatment and disposal solutions are not part of the scope of the study.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Thursday, August 17, 2023 4:43 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Thu, 08/17/2023 - 16:42

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Will your plan address in any way the untreated septage that Tiny continues to spread in our township? If it doesn't, it will be an egregious omission. The common response is to blame the province - will this study be any different? I welcome any response.
Annice Blake, [redacted]

[redacted]

Jason Covey

From: Jason Covey
Sent: Thursday, August 31, 2023 10:22 AM
To: [redacted]
[redacted] Rebecca Raymond, C.E.T.
Subject: RE: Water master plan (123142)

Good Morning,

The Water Treatment and Servicing Master Plan is a high-level study which aims to identify long term strategies for the supply and treatment of municipal drinking water to existing and future residents over the next 20 years. The Master Plan will develop and evaluate options for increasing the resiliency of the township's 16 municipal drinking water systems and for expansion of the systems to accommodate anticipated growth in Tiny. The Master Plan aims to find the preferred solutions to these issues, considering engineering, environmental, social and cultural factors, and consulting with the public, stakeholders, and review agencies.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Sandra Mattson <smattson@tiny.ca>
Sent: Tuesday, August 29, 2023 10:11 AM
[redacted]
Cc: Rebecca Raymond, C.E.T. <rraymond@tiny.ca>; Yubing Fan <yfan@tiny.ca>
Subject: RE: Water master plan

Good Morning,

In response to your inquiry you may wish to view the Township website at this link:
https://www.tiny.ca/WaterMasterPlan

and I have also forwarded your inquiry to our Water Department to respond and assist,

Thank you,

Sandra Mattson
Senior Planner
Planning and Development Department

The Corporation of the Township of Tiny
130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
smattson@tiny.ca 705.526.4204 ext 239

From: O Visco [redacted]
Sent: August 17, 2023 5:07 PM
To: Sandra Mattson <smattson@tiny.ca>
Subject: Water master plan

Please can someone clarify or explain what water master plan is.
Thank you
O. Visco

Jason Covey

From: Jason Covey
Sent: Thursday, August 31, 2023 10:01 AM
To: John Lyons
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi John,

Thanks for your email below. Water level control in Farlain Lake is really a separate issue from drinking water supply. That being said, the effect on lake levels from water taking from any new municipal wells near to Farlain Lake, is something that would be considered should any be considered.

Regards.
Jason

From: John Lyons [redacted]
Sent: Friday, August 25, 2023 3:32 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: Webform submission from: Water Master Plan (123142)

Hi Jason,
Thanks for your response to my questions.
My long term thought is that Tiny Township municipal wells may "dry up" at sometime in the distant future. That being said, long range thinking might take into account the over abundance of water in Farlain Lake. Farlain Lake water levels are at all time highs. They will never go back to the level they were at 20 years ago, unless the water is allowed to flow out of the lake, or is drawn down by some other mechanical means.
John

On Fri, Aug 25, 2023 at 11:16 AM Jason Covey <jcovey@tathameng.com> wrote:

> Hi.
>
> Thank you for your comments and questions below. The focus of the Water Treatment and Servicing Master Plan study is the supply of municipal drinking water to township residents. The management of water levels in Farlain Lake will not be a part of the scope of the study.
>
> Regards.
>
> Jason

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Thursday, August 17, 2023 9:31 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Thu, 08/17/2023 - 21:31

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
What are Tiny Township's plans for DECREASING the amount of water in Farlain Lake? The water level year after year is at an all time high. No longer can we enjoy our sandy beaches. We need an outlet from the lake so the water level can drop significantly. Currently there is none.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Friday, August 25, 2023 11:54 AM
To: [redacted]
[redacted] Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi.

Thanks for your comments below. One of the objectives of the Water Treatment and Servicing Master Plan study is to consider opportunities for extension of the existing municipal drinking water systems to residents that are currently on private wells. We would like to know whether you would be interested in connecting to municipal water and whether you have any concerns about your well. We have a short survey (5 minutes) for residents to complete on the project website: https://www.tiny.ca/WaterMasterPlan

Please let me know if you would like your email to be added to the project mailing list.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, August 21, 2023 2:47 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 08/21/2023 - 14:47

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I am on a well, along with just about everyone I know. I assume this water plan is just for the various villages and towns where there is a municipal system. No need to respond if the answer is yes.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Tuesday, September 5, 2023 3:23 PM
To: Jaymie Brown
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi Jaymie,

Good to meet you also. The PIC #1 recording is up on the project website now:
https://www.tiny.ca/WaterMasterPlan
I have passed on your request for information on the area aquifers to John.

Regards.
Jason

From: Jaymie Brown [redacted]
Sent: Thursday, August 31, 2023 12:49 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi Jason , good to meet you in person on Monday . Lots of good information , I have posted the presentation on FB .
I'll keep watch for the live presentation and Q&A , any idea when that will be forthcoming ? I will encourage people to send in their comments .

Could you please do me a favor , I am very in John's comments that Tiny Township sits on 3 aquifers . Could you please ask him to send me the names and if possible maps of these aquifers . I have been led to believe all these years that it was just one , the Alliston Aquifer .

Thanks a bunch , have a great weekend

Jaymie

From: Jason Covey [mailto:jcovey@tathameng.com]
Sent: August 28, 2023 11:35 AM
To: Jaymie Brown
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Thank you, Jaymie.

Regards.
Jason

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Jaymie Brown [redacted]
Sent: Monday, August 28, 2023 11:27 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: RE: Webform submission from: Water Master Plan (123142)

Thanks Jason , I will post on my Facebook page for those that can't make it .

From: Jason Covey [mailto:jcovey@tathameng.com]
Sent: August 28, 2023 11:04 AM
[redacted]
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Good Morning,

The Zoom link for tonight's meeting is: https://us02web.zoom.us/j/81830007439
This link can also be found on the project website here:https://www.tiny.ca/WaterMasterPlan under Public Input Opportunities, and under Public Information Centre No. 1.

Regards.
Jason

From:no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, August 28, 2023 10:23 AM
To: Jason Covey <jcovey@tathameng.com>;water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 08/28/2023 - 10:23

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
do you have the Zoom Link information for tonight's meeting thanks

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Friday, September 1, 2023 10:13 AM
To: [redacted]
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)
Attachments: 123142 - PIC #1 Presentation - for Tiny Website.pdf

Hi,

Thanks for your interest in the Water Treatment and Servicing Master Plan. Please see attached a pdf copy of the presentation from PIC #1 held on August 28. The presentation materials can also be found on the project website: https://www.tiny.ca/WaterMasterPlan

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, August 28, 2023 9:28 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 08/28/2023 - 21:28

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I was unable to attend the Aug 28 zoom meeting, but am interested in understanding the water issues. Would it be possible to be sent the presentation from the meeting

Water Master Plan [redacted]
[redacted]

Jason Covey

From: no-reply@web-response.com on behalf of Township of Tiny <no-reply@web-response.com>
Sent: Friday, September 1, 2023 11:55 AM
To: Jason Covey; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Follow Up Flag: Follow up
Flag Status: Flagged

Submitted on Fri, 09/01/2023 - 11:55

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I am a believer in user pay. Water Surcharges should be added to new housing construction and enlarging existing cottages to bigger year round homes to help fund the expansion and repairs and impacts on water systems. Growth should help pay for infrastructure, versus general taxes. Possibly should go back to 2019 construction growth and re-tax that growth for water related increased costs. Surcharged Should have been done for years now. I Would support a modest tax increase for everyone to cost share repairs required to existing wells that have serviced the taxpayers over the years. Also on modest fee to hook up welled properties that wish to be added to municipal water.

Water Master Plan Email
[redacted]

Jason Covey

From: no-reply@web-response.com on behalf of Township of Tiny <no-reply@web-response.com>
Sent: Friday, September 1, 2023 12:09 PM
To: Jason Covey; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Follow Up Flag: Follow up
Flag Status: Flagged

Submitted on Fri, 09/01/2023 - 12:08

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Also hoping that funding assistance programs may be available from either Simcoe and/or Ontario province and/or Federal Infrastructure programs

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Wednesday, September 6, 2023 3:50 PM
To: [redacted]
[redacted]
Rebecca Raymond, C.E.T.; Timothy Leitch - Township of Tiny (tleitch@tiny.ca); Jean-François Robitaille, P.Eng.
Subject: Water Master Plan - Comments re Water Infrastructure Funding (123142)
Attachments: Webform submission from: Water Master Plan > Content rows; Webform submission from: Water Master Plan > Content rows

Hi,

We have received the attached comment submissions from you regarding the Township of Tiny's Water Master Plan. Thank you for your comments and for your interest in this study. In consultation with Township staff, we provide the following information regarding funding of water infrastructure costs.

In response to your second comment first, the township will be looking at additional funding for water infrastructure projects from various grants that are offered at all levels of government to assist in any way possible.

Regarding your comments on water billing and taxation:

- Lots that are vacant but within the system have already paid the capital costs and when connecting will pay for the service installation to the dwelling and operational costs.
- Lots that are outside the original system, and where there is system capacity, will need to pay the capital, operations, and installation costs to be connected to the system.
- Water rates are analyzed annually for potential increases needed due to rising costs.
- The township water system budget is for all 16 municipal drinking water systems. Some are large and some are very small so cost by system user is not feasible.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

and signature of the Tatham Engineering project engineer will govern the work of the project. In the event of any dispute concerning an electronic document, the appropriately dated hard copy will be the document used by Tatham Engineering to govern and resolve the dispute.

Jason Covey

From: Jason Covey
Sent: Thursday, August 31, 2023 10:53 AM
To: [redacted]
Cc: Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Good morning Marnie,

Thank you for your comments below and for your interest in the Water Treatment and Servicing Master Plan. [redacted]

One of the objectives of the Master Plan is to consider extension of municipal water to residents who would like to connect, where feasible. While we are still early in the Master Plan, there are currently no plans to extend municipal water to your area in the near future.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Wednesday, August 30, 2023 9:42 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Wed, 08/30/2023 - 09:42

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions

My builder is Mr. BART Chase, building at [redacted]
It should be completed in the spring of 2024 and I wish to know if, at that time I can have water connected to mY new home. It would save the cost to me of digging a well, which would be done if I had not seen on TV that you plan to have water connected in the spring of 2024. Please inform me and Bart Chase. Thank you very much fornthis good news!
Marnie Marsh

Water Master Plan Email

[redacted]

Jason Covey

From: Jason Covey
Sent: Friday, September 15, 2023 11:43 AM
To: [redacted]
[redacted] Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Good Morning,

Thank you for your question below and for your interest in the Tiny Township Water Treatment and Servicing Master Plan. One of the objectives of the study is to consider opportunities to extend municipal water service to residents who are unhappy with their private well supply and who would like to connect to municipal water. However, the intent is not to force private well owners to connect to municipal water if they do not want to.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, September 12, 2023 6:48 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 09/12/2023 - 18:48

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Are we going to be FORCED into giving up our well?

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Friday, September 15, 2023 11:46 AM
To: [redacted]
[redacted] Rebecca Raymond, C.E.T.
Subject: RE: Webform submission from: Water Master Plan (123142)

Good Morning,

Thank you for your comments and for your interest in the Tiny Township Water Treatment and Servicing Master Plan study.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Wednesday, September 13, 2023 9:44 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Wed, 09/13/2023 - 09:44

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions

We commend the township for establishing such a plan. We feel water provision should also be made available in densely populated areas ie Balm Beach where well water safety relies so intensely on the 5 year testing of septics. Also, the subsequent possibility of fire hydrants in these populated areas would be a welcome safety protection.

Water Master Plan Email

[redacted]

Public Notice

130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
705-526-4204 • www.tiny.ca/news

Water Treatment and Servicing Master Plan Municipal Class Environmental Assessment – Notice of Public Information Centre No. 2

Date: May 14, 2024

TAKE NOTICE that the Township of Tiny is undertaking a Master Plan Class Environmental Assessment (Master Plan) to identify the preferred solutions for the supply of municipal drinking water to existing and future residents. The assessment is considering solutions to increase the resiliency of the township's 16 municipal drinking water systems and to accommodate the anticipated growth.

The Master Plan follows the requirements of the Municipal Engineers Association (MEA) Municipal Class Environmental Assessment (as amended in 2023).

Public Information Centre No. 2

Public Information Centre (PIC) No. 2 will be held in-person and virtually to provide an opportunity for the public to review and provide input on the water infrastructure alternative solutions. There will be a presentation followed by a question-and-answer period.

Date: Tuesday, June 4, 2024

Time: 6:00 p.m. to 8:00 p.m.

Location: Township of Tiny Council Chambers, 130 Balm Beach Road West

Virtual attendees can join the meeting by accessing the Zoom link that will be available on the project webpage at www.tiny.ca/WaterMasterPlan. The presentation will be recorded and posted on the project webpage following the PIC.

Comments will be accepted until June 21, 2024, by email at jcovey@tathameng.com. Comments can also be submitted during the PIC or by using the online comment form on the project webpage. Following PIC No. 2, comments will be reviewed, the alternatives for the future direction of the water systems will be evaluated based on the information received, and the preferred solution(s) will be selected.

Residents and interested parties can subscribe to the Township of Tiny's notification system online at www.tinyconnect.ca to obtain updates and notices via email, text, voice message, or TTY/TDD.

For more information about the Master Plan or the PIC, visit Tiny's website at www.tiny.ca/WaterMasterPlan.

For media inquiries, contact:
Jacqueline Brown, Communications Officer
jbrown@tiny.ca • 705-526-4204

Public Notice

130 Balm Beach Road West, Tiny, Ontario, L0L 2J0
705-526-4204 • www.tiny.ca/news

If you have any questions or concerns, and/or would like to be added to the study's direct mailing list, please contact the study representative:

Jason Covey
Tatham Engineering Limited
115 Sandford Fleming Drive, Suite 200
Collingwood, Ontario, L9Y 5A6
E: jcovey@tathameng.com
T: 705-444-2565 ext. 2018

Comments and information received during this Class EA are collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*. All comments will be part of the public record.

For media inquiries, contact:
Jacqueline Brown, Communications Officer
jbrown@tiny.ca • 705-526-4204

TOWNSHIP OF/CANTON DE Tiny

WATER TREATMENT & SERVICING MASTER PLAN PIC #2

TATHAM ENGINEERING

June 4, 2024

WHY PREPARE A MASTER PLAN?

To understand and consider the drinking water needs of the Township

To plan water supply strategies for the next 20 years that meet those needs

To assist in making decisions on water infrastructure that align with Township goals

TOWNSHIP GOALS

- Improve the drinking water supply (quality, quantity and availability)
  - Upgrade for the long-term
  - Address deficits and concerns
  - Extend to more residents, where wanted or needed
  - Meet a higher expected level of service for permanent occupancy
- Improve the existing municipal drinking water systems'
  - Reliability and resiliency
  - Operating efficiency
  - Operation staff safety

- Support:
  - Good asset management
  - Good fiscal management
  - Public health and safety

APPROACH TO UPGRADES

Upgrades to existing systems have been ongoing

More upgrades required. They need to be:

- Prioritized
- Systematic and consistent
- Provide reliable service for long-term
- Easy to operate and maintain
- Ensure health and safety

WATER METERING

Measures the amount of water used by each municipal drinking water connection

Benefits to Customers

- Households can monitor their water usage and implement water conservation to reduce their water consumption

Benefits to Township

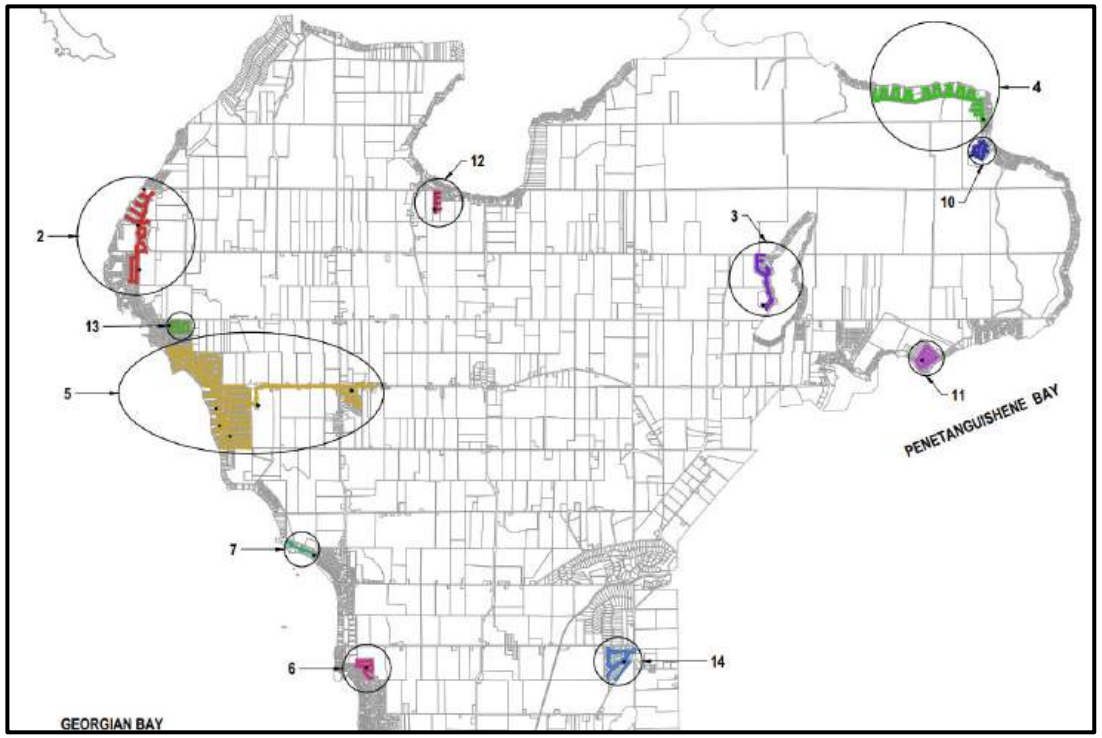
- Can assess extent of leakage in distribution system
- Reduced water usage:
  - Could reduce drinking water flows produced
  - Existing drinking water systems could serve more customers
  - Could delay need for water system expansions

Criteria

Implemented in communities with:

- High water consumption
- Expected watermain leakage

EXISTING DRINKING WATER SYSTEMS



Northern half of Tiny Township

Southern half of Tiny Township

Legend

1 BLUEWATER
2 CASTLE COVE
3 COOKS LAKE
4 GEORGIAN BAY ESTATES
5 LAFONTAINE
6 LEFAIVE
7 PENNORTH
8 PERKINSFIELD
9 RAYKO
10 SAWLOG BAY
11 TEE PEE POINT
12 THUNDER BAY
13 VANIER WOODS
14 WHIP-POOR-WILL
15 WOODLAND BEACH
16 WYEVALE

ASSESSMENT OF ALTERNATIVE SOLUTIONS

Alternative solutions developed for the following areas

- Castle Cove, Vanier Woods and Lafontaine
- Georgian Bay Estates and Sawlog Bay
- Bluewater, Rayko and Woodland Beach
- Perkinsfield, Lefaive and Balm Beach
- Cook's Lake
- Pennorth
- Tee Pee Point
- Whippoorwill
- Wyevale

ASSESSMENT OF ALTERNATIVE SOLUTIONS

Consider for each alternative:

- Does it address identified issues?
- Is sufficient groundwater available?
- Does it improve drinking water quality and/or quantity?
- Does it reduce operating and maintenance requirements?
- Does it improve system reliability and redundancy?
- Does it provide opportunity to expand to un-serviced areas?
- What are the relative project costs?

CASTLE COVE, VANIER WOODS AND LAFONTAINE

Needs and Issues

- Need supply redundancy in Castle Cove and Lafontaine
- Need pumphouse upgrades in Castle Cove and Lafontaine
- Limited fire storage in Lafontaine
- Elevated nitrate levels in Lafontaine and Castle Cove wells
- Vanier Woods in good condition and adequate capacity

Alternative Solutions

1. Connect 3 distribution systems, continue with groundwater supply, upgrade pumphouses
2. Connect 3 distribution systems & supply from a new lake supply WTP
3. Maintain and upgrade 3 water systems

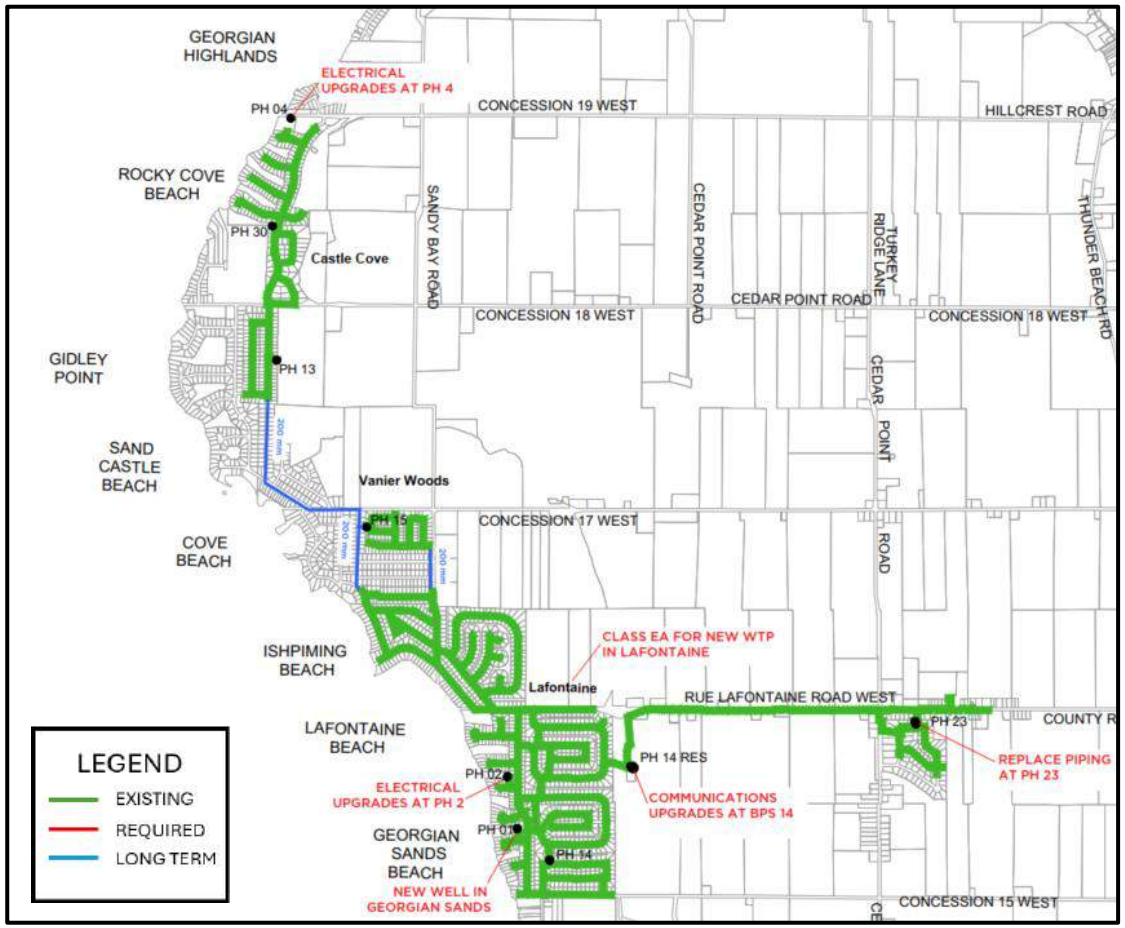
Preliminary Preferred Solutions

Connect 3 distribution systems & supply from a new lake supply WTP

Essential pumphouse upgrades

- Provides good quality and sufficient water supply for existing & un-serviced lots
- Improves system redundancy and reliability
- Addresses essential upgrades
- Reduce overall O&M costs
- Improves fire protection
- High capital costs but more customers

CASTLE COVE, VANIER WOODS AND LAFONTAINE



Required Projects

Short Term

- Class EA & other studies for WTP and intake
- Add well in Georgian Sands
- Essential upgrades at 4 pumphouses
- Estimated project costs: $1.25 M

Long Term

- New WTP and intake from Georgian Bay
- Watermain extensions (700 m) to connect 3 communities
- Lafontaine booster pumping station upgrades
- Decommission groundwater systems when WTP built

GEORGIAN BAY ESTATES AND SAWLOG BAY

Needs and Issues

- Georgian Bay Estates wells in poor condition and low yield
- Georgian Bay Estates watermains need to be replaced
- Need upgrades to Georgian Bay Estates and Sawlog Bay pumphouses
- Limited groundwater availability in area

Alternative Solutions

4. Connect 2 distribution systems, continue with groundwater supply, upgrade pumphouses
5. Maintain and upgrade 2 water systems
6. Connect 2 distribution systems & supply from a new lake supply WTP

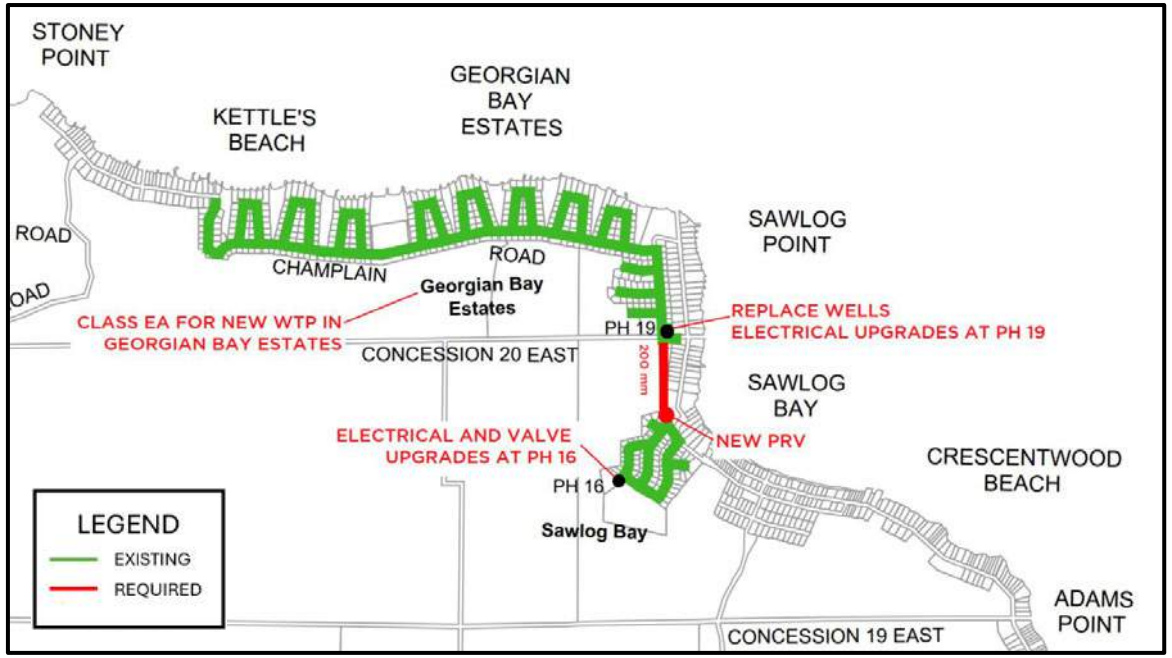
Preliminary Preferred Solutions

Connect 2 distribution systems & supply from a new lake supply WTP

Essential pumphouse upgrades

- Provides good quality and sufficient water supply for existing & un-serviced lots
- Improves system redundancy and reliability
- Addresses essential upgrades
- Reduce overall O&M costs
- Improves fire protection
- High capital costs but more customers

GEORGIAN BAY ESTATES AND SAWLOG BAY



Required Projects

Short Term

- Class EA & other studies for WTP and intake
- Replace wells and watermains in Georgian Bay Estates
- Watermain connection (500 m) between 2 communities
- Essential upgrades at Sawlog Bay pumphouse
- Estimated project costs: $2.3 M

Long Term

- New WTP and intake from Georgian Bay
- Decommission groundwater systems when WTP built

BLUEWATER, RAYKO AND WOODLAND BEACH

Needs and Issues

- Bluewater pumphouses need emergency power upgrades
- Limited fire storage at Bluewater pumphouse 18
- Insufficient well capacity in Rayko to reliably meet high water consumption
- Woodland Beach in good condition and adequate capacity

Alternatives Solutions

7. Upgrade Bluewater pumphouses & increase Rayko groundwater supply
8. Upgrade Bluewater pumphouses & replace Rayko water system with private wells
9. Connect 3 distribution systems & add storage at Bluewater

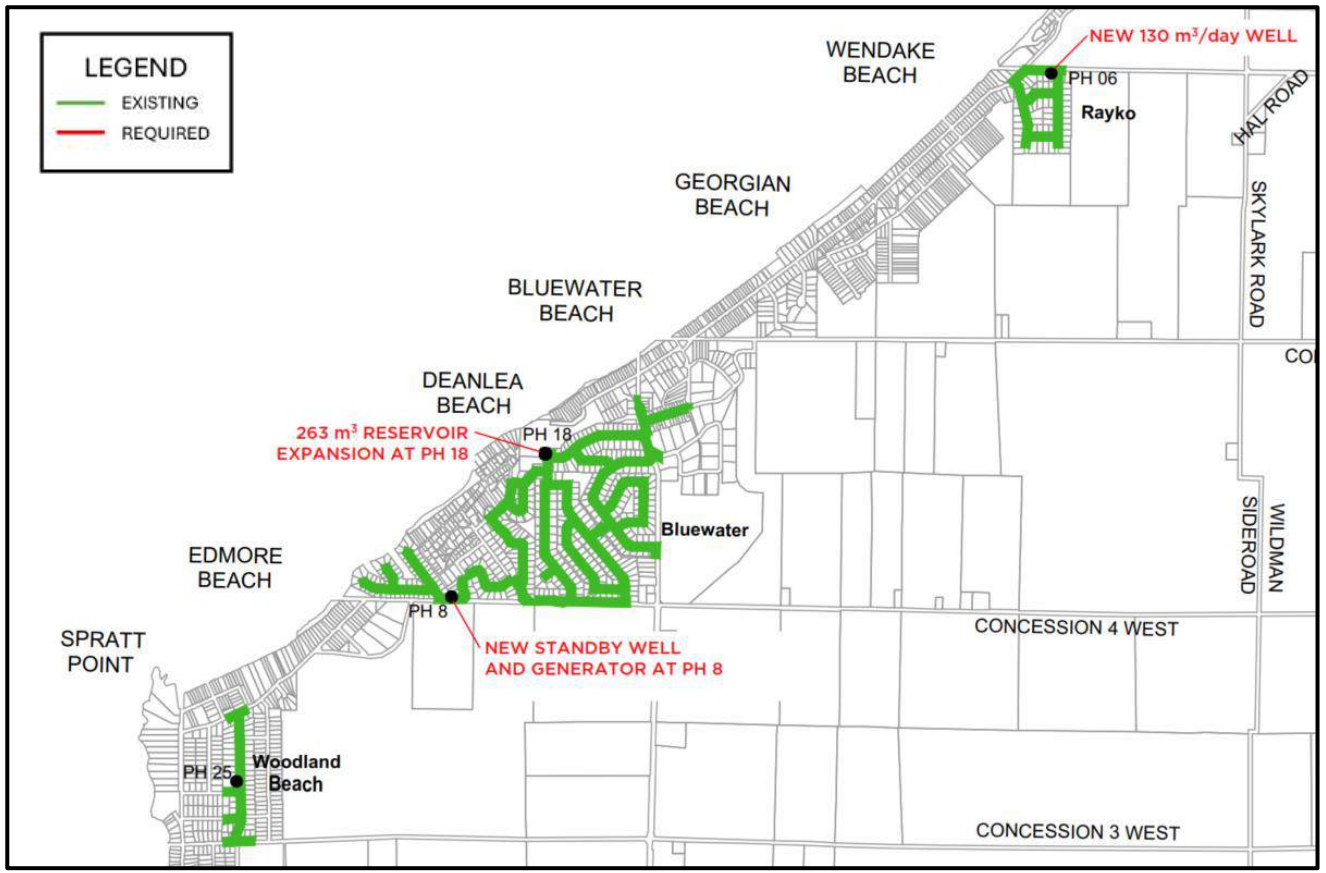
Preliminary Preferred Solution

Upgrade Bluewater Pumphouse

Increase Rayko DWS groundwater supply

- Addresses the supply and redundancy needs
- In the future, if sufficient groundwater is confirmed, could add watermains to connect Bluewater, Rayko and Woodland Beach
- Expect constraints to constructing wells on private properties with existing buildings and septic systems

BLUEWATER, RAYKO AND WOODLAND BEACH



Required Projects

- Expand Bluewater pumphouse 18 water storage tank and standby power upgrades
- Add well and standby generator at Bluewater pumphouse 8
- Add well at Rayko
- Install water meters in Rayko
- Estimated project costs: $1.8 M

PERKINSFIELD, LEFAIVE AND BALM BEACH

Needs and Issues

- Groundwater supply insufficient in Perkinsfield
- Perkinsfield pumphouse 22 needs emergency power
- Perkinsfield pumphouses require equipment upgrades
- Undersized watermains in Perkinsfield
- Elevated THM levels in Perkinsfield pumphouse 26 reservoir
- Lefaive in good condition and adequate capacity
- Balm Beach, a high-density area, has no municipal water & sanitary service
- Limited groundwater in Balm Beach area

Alternative Solutions

10. Upgrade Perkinsfield & conduct Balm Beach servicing study
11. Increase Perkinsfield groundwater supply & extend watermains to Balm Beach
12. New lake-based WTP for Balm Beach, Perkinsfield and Lefaive

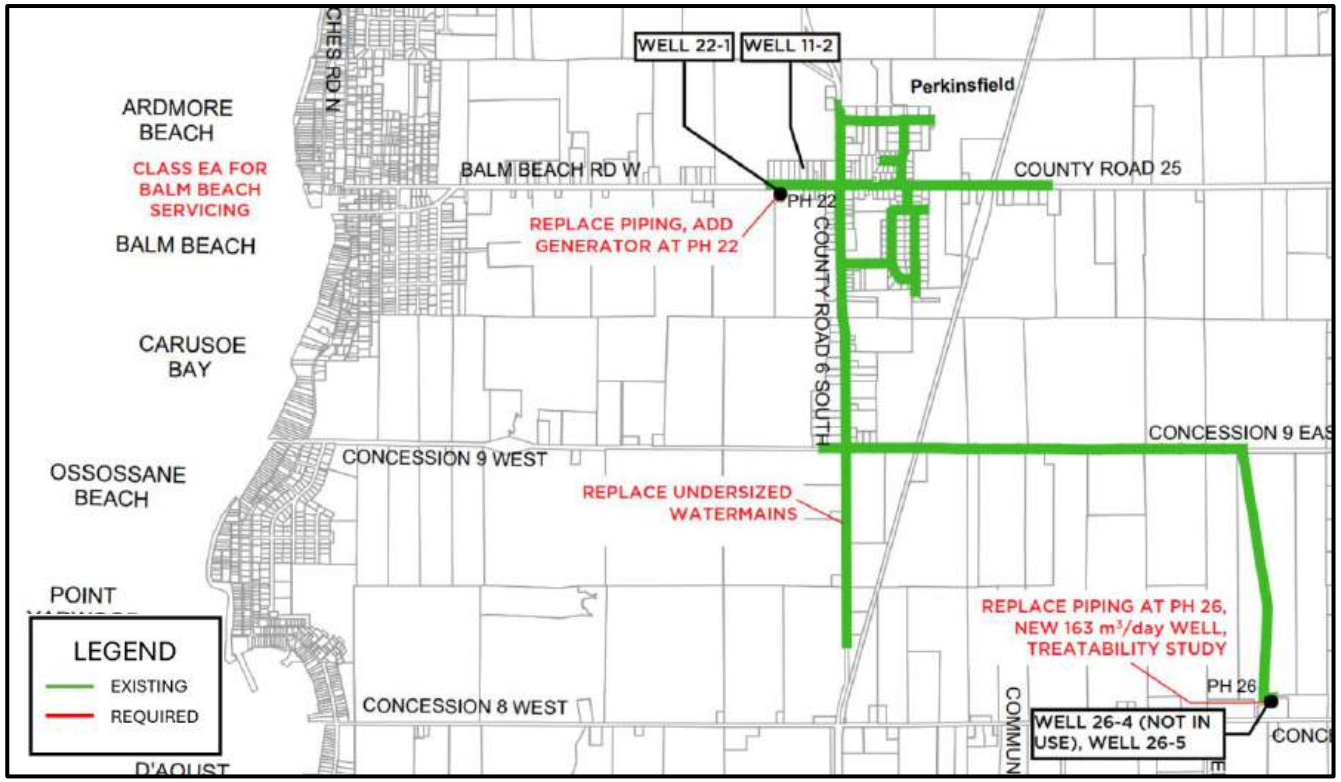
Preliminary Preferred Solutions

Upgrade Perkinsfield water system

Conduct Balm Beach servicing study

- Phased approach
- Addresses the supply, redundancy and equipment needs in Perkinsfield
- Servicing solution for Balm Beach area to be resolved based on comprehensive assessment of water & sanitary needs and options
- Servicing study will assist in resolving extent of water service area for shoreline

PERKINSFIELD, LEFAIVE AND BALM BEACH



Required Projects

- New well in Perkinsfield
- Add emergency generator at Perkinsfield pumphouse 22
- Upgrade Perkinsfield pumphouses
- Replace undersized watermains in Perkinsfield
- Class EA Balm Beach servicing study
- THM treatability study at Perkinsfield reservoir
- Estimated project costs: $3.1 M

COOK'S LAKE

Needs and Issues

- Insufficient groundwater supply and treatment capacity to reliably meet high water consumption
- Existing reservoir is not in use
- Some un-serviced homes on Fairlain Lake use lake water as drinking water source

Alternatives Solutions

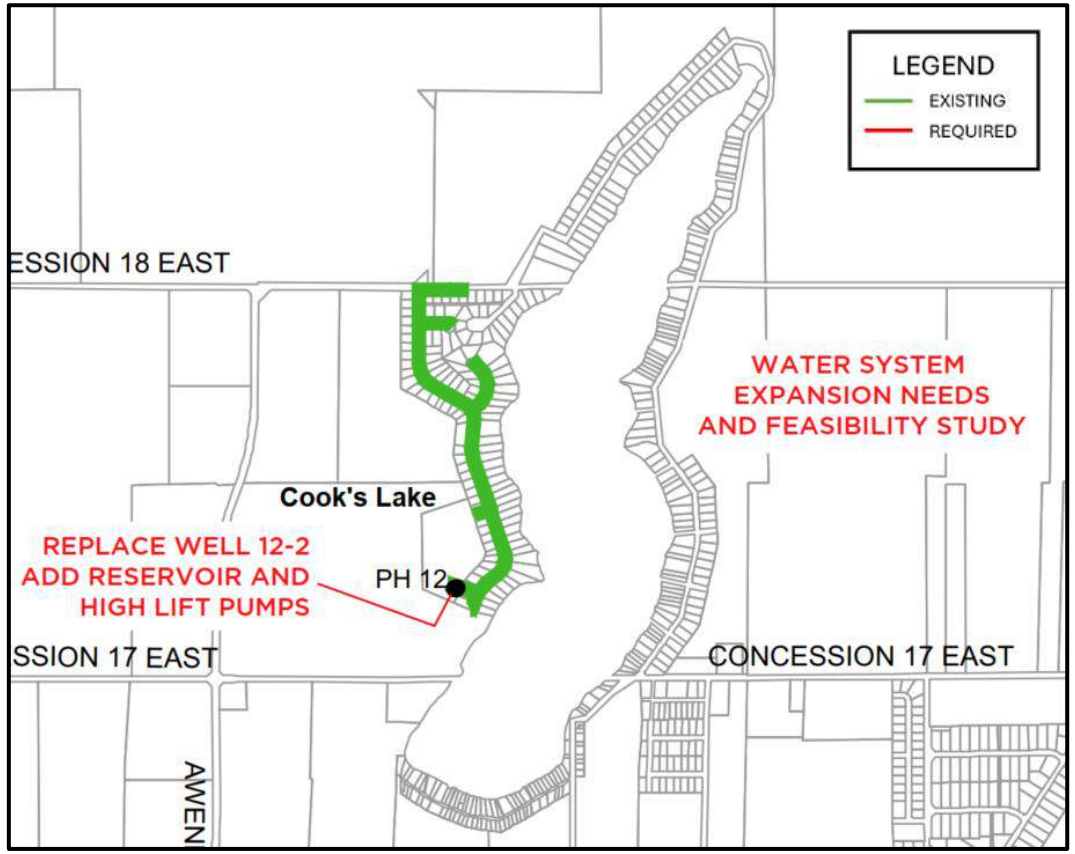
13. Upgrade Cook's Lake water system for existing service area
14. Upgrade and extend Cook's Lake water system to un-serviced areas

Preliminary Preferred Solution

Upgrade Cook's Lake Water System for existing service area

- Addresses the supply, redundancy and equipment needs
- Study is needed to confirm drinking water needs in un-serviced areas around lake

COOK'S LAKE



Required Projects

- Replace Well 12-2 with higher capacity well
- Connect existing reservoir and add high lift pumps
- Install water meters
- Study of needs and feasibility of extending distribution system around lake
- Estimated project costs: $1.3 M

PENNORTH

Needs and Issues

- Pennorth pumphouse needs upgrades for operational flexibility and to remove asbestos
- Capacity is sufficient for projected needs
- Adjacent Wahnekewening Drive is not serviced and has individual wells on Township property

Alternative Solutions

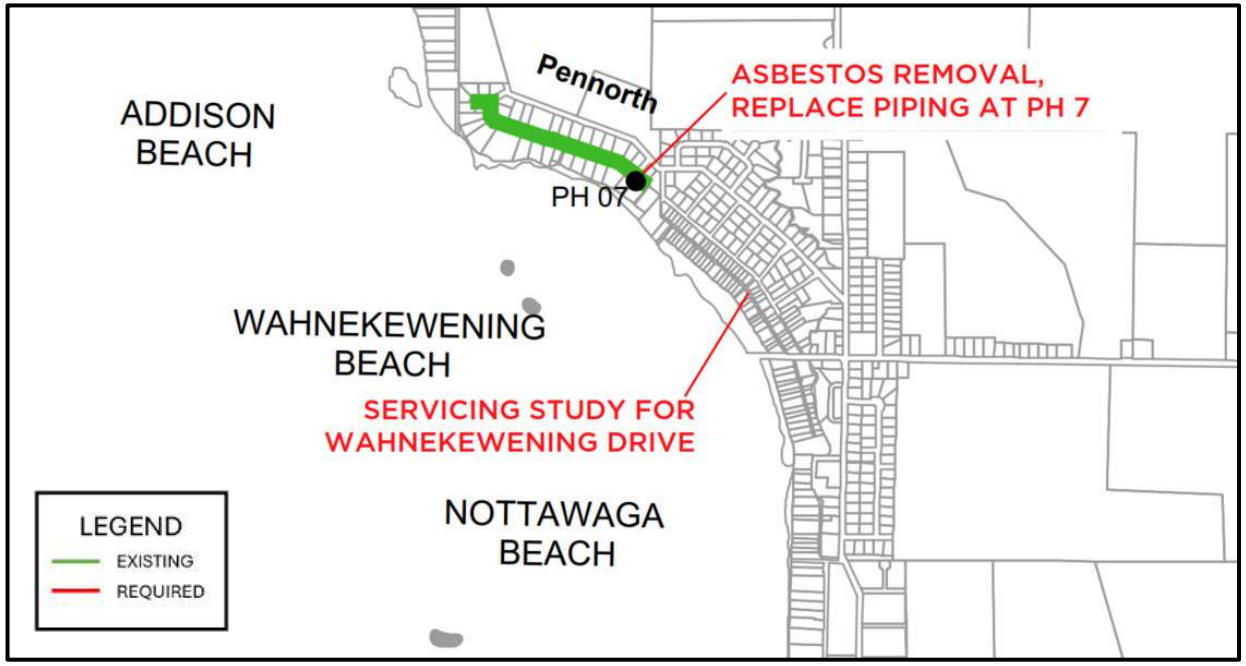
15. Upgrade Pennorth DWS
16. Replace Pennorth DWS with private wells

Preliminary Preferred Solution

Upgrade Pennorth DWS

- Addresses Pennorth's building and equipment needs
- Expect constraints to constructing wells on private properties with existing buildings and septic systems
- Study needed to determine preferred approach to improve water supply to Wahnekewening Drive

PENNORTH



Required Projects

- Upgrade Pennorth pumphouse piping
- Remove asbestos in pumphouse
- Wahnekewening Drive servicing study
- Estimated project costs: $600,000

TEE PEE POINT

Needs and Issues

- Insufficient supply and treatment capacity to reliably meet demands
- Tee Pee Point pumphouse needs equipment upgrades

Alternative Solutions

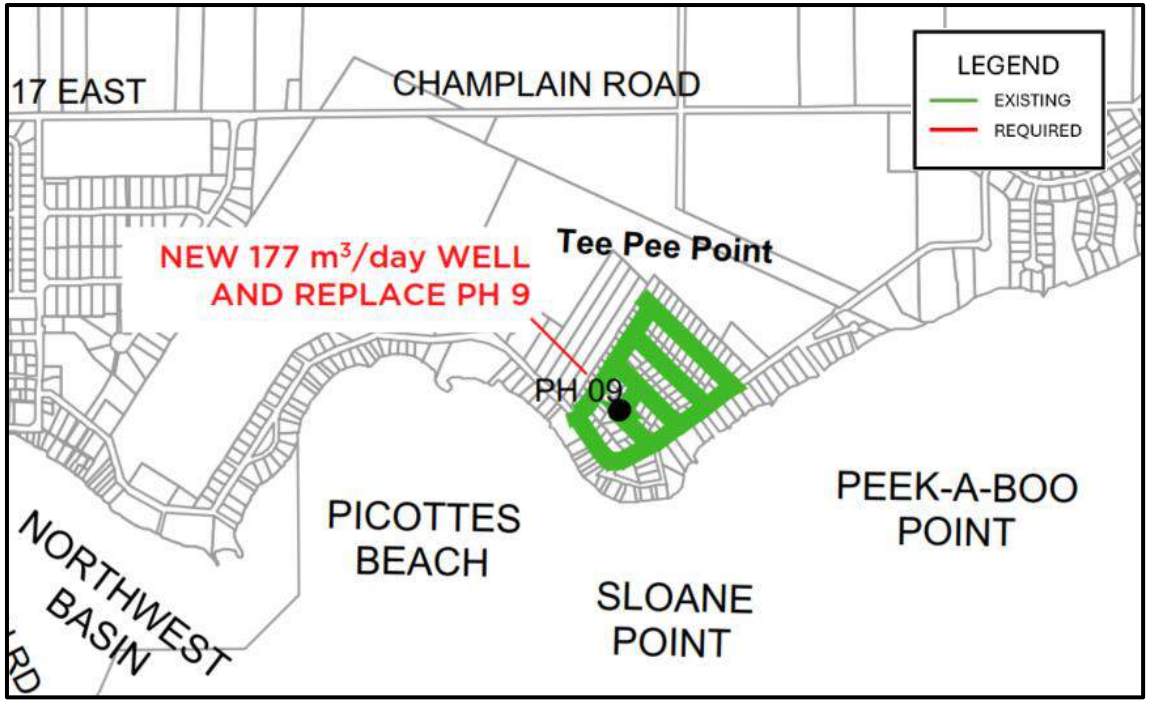
17. Increase well supply and expand the pump house
18. Increase well supply and replace the pump house

Preliminary Preferred Solution

Increase well supply and replace the pump house

- Provides a reliable pumphouse for the long term
- New site required for additional well

TEE PEE POINT



Required Projects

- Study to identify preferred site for new pumphouse and well
- Add well
- Replace pump house
- Estimated project costs: $1.6 M

WHIPPOORWILL

Needs and Issues

- Limited water storage and pumping capacity for fire protection
- High water consumption

Alternative Solutions

19. Add water storage and upsize the high lift pumps
20. Install water meters and keep pumphouse as is

Preliminary Preferred Solution

Install water meters and keep pumphouse as is

- Priority is to address the high water usage
- Lower costs for small number of users

Required Projects

- Install water meters
- Estimated project costs: $100,000

WYEVALE

Needs and Issues

- Limited water storage and pumping capacity for fire protection

Alternative Solutions

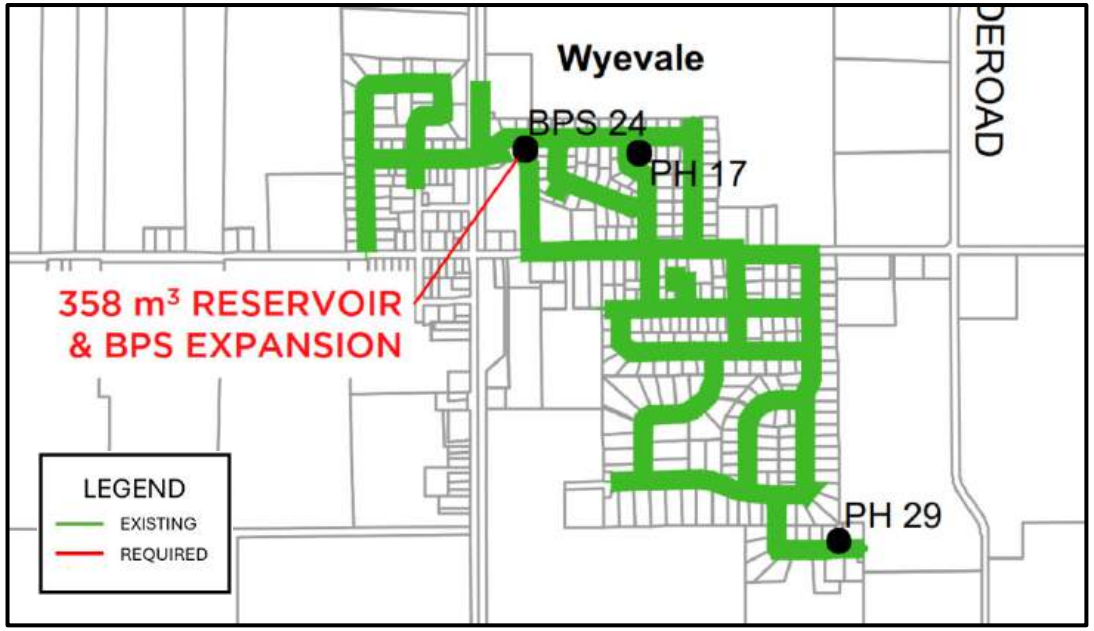
21. Expand Wyevale reservoir and booster pumping station 24
22. Replace Wyevale reservoir and booster pumping station 24
23. Add storage and high lift pumps at pumphouse 29

Preliminary Preferred Solution

Expand Wyevale reservoir and booster pumping station 24

- Addresses the need for improved fire protection
- Lowest cost solution

WYEVALE



Required Projects

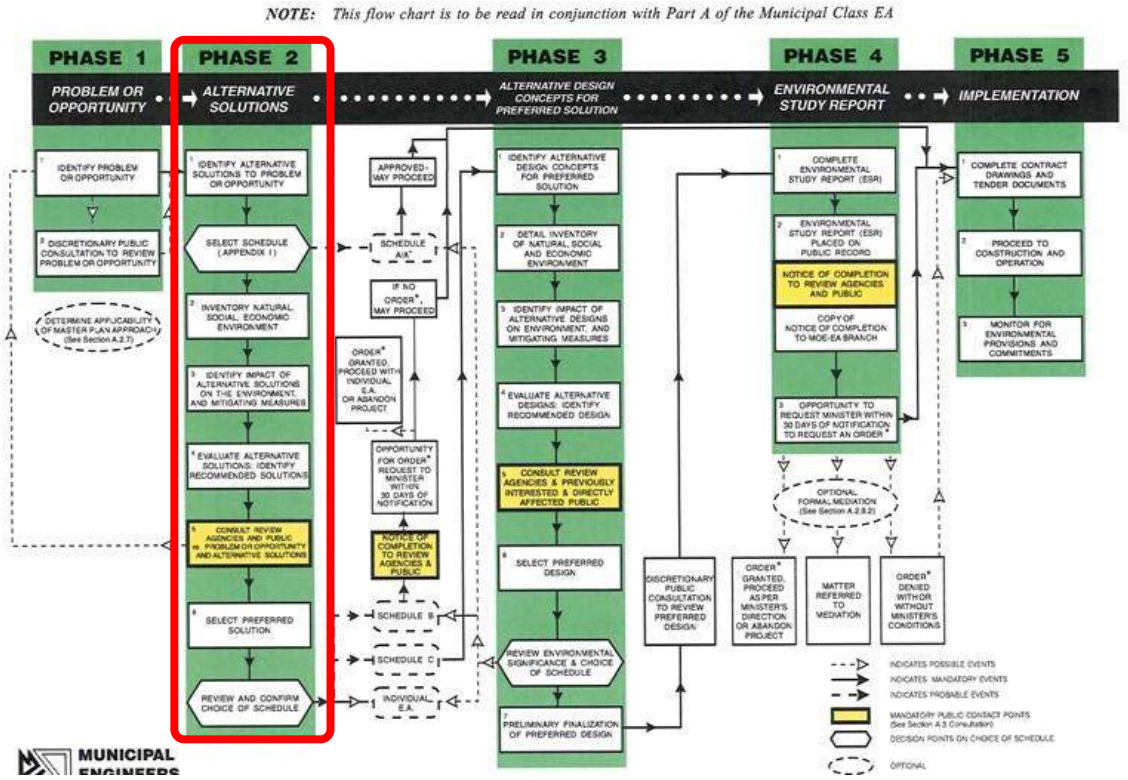
- Expand reservoir and BPS 24
- Project to include adding standby power
- Estimated project costs: $1.8 M

SUMMARY OF PRELIMINARY PREFERRED SOLUTIONS

Drinking Water System	Pumphouse and Watermains	Wells	Studies	Water Meters	Estimated Project Costs (excl. long term projects)
Castle Cove, Vanier Woods, Lafontaine	Upgrades at PH 2, PH 23, BPS 14, PH 4	New well in Georgian Sands	Class EA for WTP & intake		$1.25 M
Georgian Bay Estates, Sawlog Bay	New watermains in Georgian Bay Estates, connecting watermains, upgrades at PH 16	New wells in Georgian Bay Estates	Class EA for WTP & intake		$2.3 M
Bluewater, Rayko, Woodland Beach	Expand PH 18	New wells in Bluewater and Rayko		Install water meters in Rayko	$1.8 M
Perkinsfield, Lefaive and Balm Beach	Upgrades PH 22 and PH 26, replace undersized watermains in Perkinsfield	New well in Perkinsfield	Class EA for servicing Balm Beach Perkinsfield THM treatability study		$3.1 M
Cook's Lake	Upgrades at PH 12	New well	Needs & feasibility study for extending system	Install water meters	$1.3 M
Pennorth	Upgrades at PH 7		Servicing study for Wahnekewening Dr		$600,000
Tee Pee Point	Replace PH 9	New well	Site selection study		$1.6 M
Whippoorwill				Install water meters	$100,000
Wyevale	Expand BPS and reservoir 24				$1.8M

NEXT STEPS IN CLASS EA

- Review and incorporate input and comments received in assessment of alternatives and identify preferred solutions
- Summer 2024:
  - Prepare Draft Master Plan Report
  - Township and MECP review
- Fall 2024:
  - Prepare Final Master Plan Report
  - Issue Notice of Study Completion
  - 30-day public and agency review



YOUR INPUT

Please give us your comments in writing by June 21, 2024

- Online comment form, or
- Paper comment sheet, or
- Send us an email

- PIC presentation available on website: www.tiny.ca/WaterMasterPlan

ANY QUESTIONS?

TINY TOWNSHIP WATER TREATMENT AND SERVICING MASTER PLAN
CLASS ENVIRONMENTAL ASSESSMENT

PUBLIC INFORMATION CENTRE No. 2 – JUNE 4, 2024

SIGN-IN SHEET

#	NAME	COMPANY	ADDRESS	PHONE #	EMAIL
1	DAVID EVANS	Tiny	[redacted]		
2	Jessie Gaylord				
3	Lyn Meschino				
4	Carolyn Handy				
5	Anne				
6	Karen				
7	JOE LOJIC				
8	Cyndi Brown	T			
9	Seggnie Brown				
10	DAVE BRUNELLE	TINY			
11	Sue Silversides	"			
12					

Jason Covey

From: Jason Covey
Sent: Wednesday, June 12, 2024 6:06 PM
To: Susan Barbi
Subject: RE: Master Plan Class Environmental Assessment (123142)

Hi Susan,

The Township does not get involved in private contracts between homeowners and well drillers. If you feel you are not able to resolve the issues with the driller directly, you can reach out to the Wells Help Desk at the Ontario Ministry of the Environment, Conservation and Parks. Their contact information can be found here: https://www.ontario.ca/page/wells-your-property#section-2

Regards.
Jason

From: Susan Barbi [redacted]
Sent: Tuesday, June 11, 2024 6:43 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: Master Plan Class Environmental Assessment (123142)

Hi Jason,
Thank you for the follow-up information.
We have just found another problem. On the contract, it states that we would be getting 10 GPM of water with the drilled well. We just found out that we are only getting 2 GPM. Who is the governing body/person at the Municipality in Tiny, in charge of ensuring that drilling companies are accountable for their work?
If you have any suggestions, I would love to hear them.
Thank you for your interest,
Susan

From: Jason Covey <jcovey@tathameng.com>
Sent: June 10, 2024 10:19 AM
To: Susan Barbi [redacted]
Subject: RE: Master Plan Class Environmental Assessment (123142)

Hi Susan,

I am truly sorry you've had such a difficult time with your well. It sounds like you have been able to resolve some of the issues and hopefully the water sample analysis will be resolved soon. You can also contact the Health Unit directly to get your water tested if you don't get results back soon: https://www.simcoemuskokahealth.org/Topics/SafeWater/drinkingwater/wells/watersample.aspx.

We have heard from some residents that are not happy with their private wells, so this will be noted as an issue in the Master Plan report. Further study will need to be done to consider possible solutions so I would encourage you to continue to follow along with the results of the Master Plan and to stay up to date on further studies. It will be a long-term process, unfortunately.

Regards.
Jason

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Susan Barbi[redacted]
Sent: Friday, May 17, 2024 8:11 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: Master Plan Class Environmental Assessment (123142)

Hi Jason,
Thank you for taking an interest in my problem.
As I mentioned before, we had a sand point well which was fine. We decided to get the drilled well because after closing and winterizing our cottage (with the sand point) and then returning in Mar. to dewinterize, we had a problem with the well freezing and had to wait until April to dewinterize but there was no smell. With the drilled well we were promised more pressure but Drury didn't explain that with the small pipes currently in the house, the pressure would still be the same and the water has a "nail polish "smell. Thankfully The Water Stop put in a carbon filter just yesterday and the smell seems to be gone.

You might wonder why we got the drilled well when our sand point was basically working well. Our neighbour is building his forever home and wanted to change his septic system onto the water side (which I will never understand how the township allowed septic systems on the water side) but his septic system would be too close to our sand point but if we changed to a drilled well, then his septic system would be far enough from our well. We thought since the pressure would be better and everyone told us that drilled wells yield better water, we decided to go ahead. I have to say that we regret our decision to get the drilled well so very, very much.

We are from the city, and we find it unbelievable that we get such conflicting information especially from people who have lived here all their lives.
BTW, we have spoken to two people "in the business of water" in different capacities and both lived with a well, both moved to the city and both have said that the city water is not good and both don't drink the city water and only drink reverse osmosis water and the free water which comes from the spring in Elmvale which I found extremely interesting.

I do live at [redacted]nd I believe it would be of great interest to me and probably to others if a study could be done on wells and the condition of the water they yield according to different areas. I say this because before we decided to get the drilled well, I emailed Gary of The Water Store to ask him if his purification system would deal with any problems due to a drilled well. He assured me that any problem would be solved with his system. When he came to our cottage to find a solution to our "nail polish" smell from the drilled well, I told him that I regretted getting the drilled well and that we were told drilled wells were the best to which he replied, " Sand point wells are better in this area". Of course he forgot that he told me that the drilled well was not a problem. Why didn't he tell me that sand points were better in this area? Of course it's money for him. We gave The Water Store a sample of the drilled well water and it's been almost a month and they still haven't gotten back to me. This is the reason we switched to The Water Stop. BTW, I still have the email to prove Gary's reply.
Sorry for the long response but when I share information, I like to be thorough. I hope this helps.

Kindest regards,
Susan

P.S. I don't know if there's anything you can do to initiate a study, but as I said, I find it absolutely unbelievable that the township has authorized septic systems on the water side. I'm not terribly religious but our water is a true blessing that needs to be protected since our lakes are one of the very few bodies of water that have fresh water (no salt). How long will it be before all these leeching beds start leeching into Georgian Bay? It's truly a disgrace that the township has allowed this to happen. I wonder if they realize how their poor decision will impact our precious water and environment.

From: Jason Covey <jcovey@tathameng.com>
Sent: May 16, 2024 3:42 PM
To: Susan Barbi [redacted]
Subject: RE: Master Plan Class Environmental Assessment (123142)

Hi Susan,

Thanks for your email and for your interest in the master plan.

Sorry to hear about your experience with your drilled well. If you can provide any more details about the nature of the problems with your well, this may be of interest for the master plan study. Based on our previous correspondence, you are located at [redacted]s that correct?

Regards.

Jason

From: Susan Barbi [redacted]
Sent: Tuesday, May 14, 2024 12:35 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: Master Plan Class Environmental Assessment (Master Plan)

Hello,

I would be very happy to have municipal water on my property. We just went through a great expense with the installation of a drilled well which we are very unhappy about. The water is not acceptable to us even though we've gotten a purification system installed. The water was fine with the sand point well but after DRURY installed the well we have been extremely unhappy with it. We've had a couple of companies coming to remedy the problem but so far it seems to be problem that they have not encountered. BTW, if you have any ideas, I would love to hear them or if you have a company that you would like to recommend. We are seniors who after going through the cost of installation, cannot incur further costs on our limited budget.

BTW, even before agreeing to do the drilled well, I asked Gary from the Water Store if his purification system would remedy any problem with the drilled well and he assured me that there would be no problem (to which I still have the email). We are very upset because we are used to dealing with people who stand by their word and now Gary has retired and his son-in-law doesn't seem to want to help us out. We don't know what to do.

In closing, due to this problem, you can see why I would welcome city water at this point.

Regards,

Susan

Jason Covey

From: Jason Covey
Sent: Thursday, May 16, 2024 4:40 PM
To: [redacted]
Cc: Timothy Leitch - Township of Tiny (tleitch@tiny.ca)
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi Randy,

Thanks for your email and for your interest in the master plan. We will add your email to the project mailing list so you can receive future project notifications.

The Township has begun to install water meters in some communities with municipal water. Moving forward, the Township plans to install meters in additional existing water systems on a priority basis and as funding allows at this time. At this time, no plans exist to expand municipal water systems.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, May 14, 2024 12:50 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 05/14/2024 - 12:49

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I am a seasonal property owner @ [redacted], and use my water for approximately 4 weeks a year. Is there plans for meters? My full time neighbours with pools and irrigation systems are using a tremendous amount of water. I would be willing to pay for a meter, as I'm sure others would as well, that are in my position. Fair is fair
Randy Black

Water Master Plan Email
[redacted]

Jason Covey

From: Paul Bell [redacted]
Sent: Tuesday, May 14, 2024 2:20 PM
To: Jason Covey
Subject: Yes!

Yes to water. Yes to plan.

No to new build administration centre.

Rather my tax dollars supported state of the art water quality and septage treatment.

yours,

Paul D. Bell, Ph.D. 🐞
Forest Entomologist
Idler and Flâneur

"Serit arbores, quae
alteri saeclo prosint."

"Qui doset discit."

Jason Covey

From: Catherine Mossman [redacted]
Sent: Thursday, May 16, 2024 4:32 PM
To: Jason Covey
Subject: Re: H20 Master plan question/ concern (123142)

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

Thanks Jason,
we're at [redacted], Tiny
Catherine

On 2024-05-16 16:30, Jason Covey wrote:

> Hi Catherine,
>
> Thank you for your email and for your interest in the master plan. We will add your email to the project mailing list.
>
> The master plan intends to consider extending municipal water in areas where residents want it or need it. If you can provide your property address, this will help us in determining the locations where residents do and don't want municipal water service.
>
> Regards.
> Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Catherine Mossman [redacted]
Sent: Tuesday, May 14, 2024 7:19 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: H20 Master plan question/ concern

Hello, Seeing that a lot of us are on wells in Tiny, and quite happily so; have concerns that we may be forced on to municipal water system, wondering what the plans are for those of us still rural who wish to not be connected.
I plan to attend the mtg virtually.
Thank you,
Catherine Mossman

Jason Covey

From: Jason Covey
Sent: Friday, May 17, 2024 10:02 AM
To: [redacted]
[redacted]
RE: Public Notice - Water Treatment and Servicing Master Plan Municipal Class EA - Notice of Public Information Centre No. 2 - Township of Tiny (123142)

Hi Cathy,

Thanks for your email. You have been removed from the project mailing list.

Regards.
Jason

From: Cathy MARCELLUS [redacted]
Sent: Wednesday, May 15, 2024 11:01 AM
To: Hannah Abel <habel@tathameng.com>
Subject: Re: Public Notice - Water Treatment and Servicing Master Plan Municipal Class EA - Notice of Public Information Centre No. 2 - Township of Tiny (123142)

Why am I getting this email. I did not sign up for anything. I am on my own drilled well and have no need for municipal water.

Please take me off of this email thread.

Regards

Cathy Marcellus
[redacted]

On Wednesday, May 15, 2024 at 09:09:55 a.m. GMT-5, Hannah Abel <habel@tathameng.com> wrote:

Good morning,

Please see attached.

Regards,

TATHAM ENGINEERING

Hannah Abel
Senior Administrative Assistant

habel@tathameng.com **T** 705-325-1753 x2001
10 Diana Drive Unit 7, Orillia, Ontario L3V 8K8

tathameng.com

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 10:54 AM
To: RC
Subject: RE: Water treatment servicing plan (123142)

Hi Robert,

Thanks for your email and for your interest in in the Water Master Plan. We will make note of your interest in a potential future connection to the Tee Pee Point municipal water system. The Master Plan will include recommendations for upgrading the Tee Pee Point water system to ensure the long-term supply of drinking water to this area.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

-----Original Message-----
From: RC [redacted]
Sent: Tuesday, May 21, 2024 5:55 AM
To: Jason Covey <jcovey@tathameng.com>
Subject: Water treatment servicing plan

I understand that there is an upcoming information session about the municipal water systems in place in Tiny Township.
I live at [redacted]y Township and I get my water from my own private well. The municipal water line that is not available to me is right across the road from my house.

I do not need the municipal water today but it would be nice to have the option of connecting to it if my needs change in the future.
Thank you
Robert Crittenden

Jason Covey

From: Gordon, Alison (MNRF) <Alison.Gordon@ontario.ca>
Sent: Tuesday, May 21, 2024 10:12 AM
To: Jason Covey
Subject: Re: Public Notice - Water Treatment and Servicing Master Plan Municipal Class EA - Notice of Public Information Centre No. 2 - Township of Tiny (123142)
Attachments: 2024-05-14 - Public Notice - WMP Class EA Notice of PIC No. 2 - Final.pdf; 2024-05-21 _MNRF_Response.pdf

Hi Jason,

I hope you had a great weekend. The Ministry of Natural Resources and Forestry (MNRF) received the notice of public information centre 2 on May 17, 2024. Thank you for circulating this to our office. Please note that we have not competed a screening of natural heritage or other resource values for the project at this time. This response, however, does provide information to guide you in identifying and assessing natural features and resources as required by applicable policies and legislation, as well as engaging with the Ministry for advice as needed.

If you have any questions or concerns, please feel free to contact me.

Best,
Alison Gordon (She/Her)
Regional Planner | Land Use Planning and Strategic Issues Section
Ministry of Natural Resources and Forestry | Ontario Public Service
(289)380-0540 | alison.gordon@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

As part of providing accessible customer service, please let me know if you have any accommodation needs or require communication supports or alternate formats.

From: Hannah Abel <habel@tathameng.com>
Sent: May 15, 2024 10:09 AM
To: Collingwood File <file@tathameng.com>
Cc: Jason Covey <jcovey@tathameng.com>

Subject: Public Notice - Water Treatment and Servicing Master Plan Municipal Class EA - Notice of Public Information Centre No. 2 - Township of Tiny (123142)

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good morning,

Please see attached.

Regards,

TATHAM ENGINEERING

Hannah Abel
Senior Administrative Assistant

habel@tathameng.com **T** 705-325-1753 x2001
10 Diana Drive Unit 7, Orillia, Ontario L3V 8K8

tathameng.com

Ministry of Natural Resources and Forestry

Land Use Planning and Strategic Issues Section
Southern Region

Regional Operations Division
300 Water Street
Peterborough, ON K9J 3C7
Tel.: 705 761-4839

Ministère des Richesses naturelles et des Forêts

Section de l'aménagement du territoire et desquestions stratégiques
Région du Sud

Division des opérations régionales300, rue Water
Peterborough (ON) K9J 3C7
Tél. : 705 761-4839

Ontario

May 21, 2024

To Jason Covey
Tatham Engineering Limited
115 Sandford Fleming Drive, Suite 200,
Collingwood, ON, L9Y 5A6

SUBJECT: Tiny Township Water Treatment and Servicing Master Plan

The Ministry of Natural Resources and Forestry (MNRF) received the notice of public information centre 2 on May 17, 2024. Thank you for circulating this to our office. Please note that we have not competed a screening of natural heritage or other resource values for the project at this time. This response, however, does provide information to guide you in identifying and assessing natural features and resources as required by applicable policies and legislation, as well as engaging with the Ministry for advice as needed.

Please also note that it is the proponent's responsibility to be aware of, and comply with, all relevant federal or provincial legislation, municipal by-laws or other agency approvals.

Natural Heritage

MNRF's natural heritage and natural resources GIS data layers can be obtained through the Ministry's Land Information Ontario (LIO) website. You may also view natural heritage information online (e.g., Provincially Significant Wetlands, ANSI's, woodlands, etc.) using the Make a Map: Natural Heritage Areas tool.

We recommend that you use the above-noted sources of information during the review of your project proposal.

Natural Hazards

A series of natural hazard technical guides developed by MNRF are available to support municipalities and conservation authorities implement the natural hazard policies in the Provincial Policy Statement (PPS). For example, standards to address flood risks and the potential impacts and costs from riverine flooding are addressed in the *Technical Guide River and Stream Systems: Flooding Hazard Limit (2002)*. We recommend that you consider these technical guides as you assess specific improvement projects that can be undertaken to reduce the risk of flooding.

Petroleum Wells & Oil, Gas and Salt Resources Act

There may be petroleum wells within the proposed project area. Please consult the Ontario Oil, Gas and Salt Resources Library website (www.ogsrlibrary.com) for the best-known data on any wells recorded by MNRF. Please reference the 'Definitions and Terminology Guide' listed in the publications on the library website to better understand the well information available. Any oil and gas wells in your project area are regulated by the *Oil, Gas and Salt Resource Act*, and the supporting regulations and operating standards. If any unanticipated wells are encountered during development of the project, or if the proponent has questions regarding petroleum operations, the proponent should contact the Petroleum Operations Section at POSRecords@ontario.ca or 519-873-4634.

Fish and Wildlife Conservation Act

Please note, that should the project require:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes under the *Fish and Wildlife Conservation Act* will be required.
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), a Wildlife Collector's Authorization under the *Fish and Wildlife Conservation Act* will be required.

Public Lands Act & Lakes and Rivers Improvement Act

Some Projects may be subject to the provisions of the *Public Lands Act* or *Lakes and River Improvement Act*. Please review the information on MNRF's web pages provided below regarding when an approval is, or is not, required. Please note, *Lakes and Rivers Improvement Act* approval from the Ministry is not required for certain activities within the area of jurisdiction of a Conservation Authority. Please see the *Lakes and Rivers Improvement Act* administrative guide for more information and contact your local Conservation Authority where unsure if work is subject to regulation under the *Conservation Authorities Act*.

- For more information about the *Public Lands Act*: https://www.ontario.ca/page/crown-land-work-permits
- For more information about the *Lakes and Rivers Improvement Act*: https://www.ontario.ca/page/lakes-and-rivers-improvement-act-administrative-guide

Provincial Plans

This project may lie within the boundary of one or more Provincial Plans. Provincial plans build upon the policy foundation for regulating land use and development established by the Provincial Policy Statement (PPS). Many provincial plans contain policies specific to infrastructure projects undergoing an Environmental Assessment. The provincial plans themselves should be consulted for the full policies and to understand how they apply to your specific project.

After reviewing the information provided, if you have not identified any of MNRF's interests stated above, there is no need to circulate any subsequent notices to our office. If you have identified any of MNRF's interests and/or may require permit(s) or further technical advice, please direct your specific questions to the undersigned.

If you have any questions or concerns, please feel free to contact me.

Best Regards,

Alison Gordon
Regional Planner, Land Use Planning and Strategic Issues Section,
Southern Region, Regional Operations Division,
Ministry of Natural Resources and Forestry

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 11:42 AM
To: Township of Tiny
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your email and for your interest in the Water Master Plan. We will add your email to the mailing list so that you will receive future project notifications.

Currently, there is no municipal water system near to your cottage, and so, an option to connect to municipal water would not be available in the short term. However, the Master Plan will include recommendations for further study in the short term (in the next 5 years), to consider possible solutions for improving both water and sanitary servicing in the Balm Beach area in the long term.

Please continue to follow along with the Master Plan project as well as future servicing studies for the Balm Beach area for more information as it becomes available.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, May 27, 2024 2:43 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 05/27/2024 - 14:42

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
We have the following comments and questions.
1. We were never made aware of this water master plan, but have signed up for future updates.
2. Is this looking to provide municipal water to existing seasonal cottages? Our cottage is at [redacted]
3. Would the municipal water hook up to existing cottage piping?
4. What is the potential timeframe for implementation and approximate cost to the cottage owner? Are there any upfront costs associated?
Looking forward to your response.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 12:04 PM
To: [redacted]
[redacted] water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your email and for your interest in the Water Master Plan.

Review of aggregate mining approvals is outside the scope of the Master Plan project. No impacts to municipal water supplies are anticipated from aggregate mining activities on French's Hill, as it is not located near to any of the Township's wells or wellhead protection areas.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Sunday, June 2, 2024 6:55 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Sun, 06/02/2024 - 18:54

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
WE REQUIRE A 5 YEAR MORATORIUM ON AGGREGATE MINING ON FRENCH'S HILL. THIS IS SO THAT THE SCIENTISTS CAN DO THEIR IMPORTANT RESEARCH TO LEARN HOW IS IT THAT NATURE CAN MAKE THIS WATER THE PUREST KNOWN TO SCIENCE. WHAT IS NATURE'S PROCESS. IN THAT WAY, THIS PROCESS CAN BE APPLIED WORLD-WIDE IN AREAS WHERE HUMANS/WILDLIFE ARE DESPERATE FOR CLEAN DRINKING WATER. IT IS OUR HUMAN RIGHT. AGGREGATE MINING CAN BE DONE ELSEWHERE. DO NOT ALLOW IT AT FRENCH'S HILL WHERE THE PUREST WATER KNOWN TO SCIENCE IS FLOWING. PEOPLE COME BY THE HUNDREDS TO FILL THEIR JUGS WITH THIS PRISTINE, PRECIOUS WATER. HALT AGGREGATE MINING AT ONCE AT FRENCH'S HILL.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 12:08 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

The Phase 2 PIC was held on June 4, 2024. Completion of the Master Plan report is planned for the fall of 2024. You will receive a notification when the draft report is available for public review.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, June 4, 2024 10:19 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 06/04/2024 - 10:18

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Why does it show the Master Plan complete in April 2024 while the Phase 2 PIC is June 4th 2024?

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 12:24 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your email and for your interest in the Master Plan. We will add your email to the project mailing list.

Providing municipal water to the Balm Beach area is being considered as part of the Master Plan. However, this would be a high cost, long term project and it requires further study. The Master Plan will recommend that a servicing study be completed in the short term (i.e. within the next 5 years) to consider options for both water and sanitary servicing for the Balm Beach area.

I encourage you to continue to follow along with the progress of the Master Plan project. An update on the Master Plan was presented at the PIC held on June 4, 2024. Please feel free to review the presentation slides and the video available on the project website: https://www.tiny.ca/WaterMasterPlan. The next steps in the project include reviewing and incorporating the comments from the public into the assessment of the alternative solutions and preparing the Master Plan report. You will receive email notification when the draft report is available for public review.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, June 4, 2024 2:40 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 06/04/2024 - 14:40

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
We are very excited to hear about the possibility of having municipal water brought to our home. We live at [redacted]. Just wondering, if it is decided you will be offering this to all residents, approximately how long do you estimate it would take to implement this?

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Thursday, June 13, 2024 9:19 AM
To: Stanislava Bucek
Subject: RE: Webform submission from: Water Master Plan (123142)

Good Morning Stani,

You are quite correct. The Woodland Beach water system has enough capacity and no major needs.

The reasons for considering connecting Woodland Beach to the adjacent Bluewater system are twofold. First, it would provide system redundancy so that one pumphouse could be taken offline for maintenance, in either Woodland or Bluewater, without interruption of water service to residents. Secondly, it would provide the opportunity for homes on private wells between Woodland and Bluewater to connect to municipal water.

However, our preliminary analysis suggests that there isn't a need or desire from private well owners in this area to connect to municipal water. Therefore, the preliminary preferred solution is to not connect the water systems. The estimated project costs presented in the PIC are to complete upgrades in the Bluewater and Rayko systems consisting of additional wells, additional storage, and standby generator power.

Regards.
Jason

From: Stanislava Bucek [redacted]
Sent: Wednesday, June 12, 2024 7:29 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: Webform submission from: Water Master Plan (123142)

Thank you sir.
I still do not understand your numbers and calculations.
For the clearer picture could you please put numbers of houses you are serve and vacant lots?
It looks like you are only concentrating on vacant lots.

In presentation #1 you said that Woodlabbeach serves 37 homes, has 8 vacant lots
it has 2 wells, it is a newer one, water quality is good
so why not leave it as it is?

Then in the second presentation you want to connect WoodlandBeach, Rayko and Bluewater with a price of $1.8 millions.

What if with that connection on earth which is mostly sand it is not a good idea at all? What if this connection would not work?
We could end up like in Calgary right now..

Sincerely Stani Bucek

On Wed, Jun 12, 2024 at 5:24 PM Jason Covey <jcovey@tathameng.com> wrote:

Hi,

Thank you for your additional comments.

To address your question regarding new development: one of the goals of the Master Plan is to plan for the small amount of future growth anticipated in the Township in the next 20 years. This growth is anticipated to consist of a small number of vacant building lots and redevelopment of existing lots (i.e. small cottages are being replaced with larger homes). There are no significant new developments being considered in the Township. Should a significant new development be proposed that would require expansion of the municipal water systems, the developer would be required to pay for those expansions, and not existing residents.

Regards.

Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: Stanislava Bucek [redacted]
Sent: Monday, June 10, 2024 5:41 PM
To: Jason Covey <jcovey@tathameng.com>
Subject: Re: Webform submission from: Water Master Plan (123142)

thank you sir,

i think that we all need honesty a truth

I am more worried about this new settlement and new development plan, would there be enough water for all those new developments?

You are already having lots of problems with drinking water in Wyevale and Perkinsfield, re: boil advisory

Also according to statistic Canada,Ontario has average daily very low on the water usage,

https://www150.statcan.gc.ca/n1/daily-quotidien/231114/cg-d001-eng.htm

	2015	2017	2019	20
Ontario	201	184	172	187

so no water meters are need it, especially if you know that majority as retirees on fixed income and installing water meters are very expensive

and many of us would look for water or property "deferral on bills" asking goverment to help us seniors and step in

In my honest opinion I think that your research was just to see

how much attaching water to a " new developments " would cost,

but it is not fair to us taxpayers on fixed income.

https://www.tiny.ca/sites/default/files/2023-10/Township%20of%20Tiny%20Official%20Plan%20-%20October%2012%202023.pdf

Re;"

There are five Settlement Areas within the Township, which are Perkinsfield, Wyevale, Lafontaine, Wyebridge and Toanche. Perkinsfield, Wyevale and Lafontaine have municipal water systems. Lands designated Settlement Area are mapped on Schedule A to this Plan and the Settlement Area boundaries are mapped on all of the Official Plan Schedules and Appendices. The five Settlement Areas are defined as Rural Settlements in the Growth Plan.

WATER RESOURCE MANAGEMENT C.5.1 Introduction C.5.1.1 The majority of the Township's residents obtain drinking water from individual on-site water services. Other residents obtain water from municipally owned or private communal water services. Existing sources of municipal drinking water are to be maintained and protected for future use. C.5.1.2 The Township's residents obtain municipal drinking water from a total of 16 water systems. There are a total of 45 municipal wells located within the Township. It is important to protect both the quality and quantity of drinking water sources in order to protect the supply of water in the Township for current and future residents, businesses and visitors.

RE: ' WATER AND SEWAGE SERVICING D.1.1 Introduction D.1.1.1 The Township does not have full municipal services. The Township hosts 16 water systems throughout the Township, including in the Settlement Areas of Perkinsfield, Wyevale and Lafontaine. There are also water systems within the Shoreline areas of the Township. The Provincial and County of Simcoe policies permit private services outside of Settlement Areas where no municipal or communal services are provided. The existing servicing system is the same both within and outside the Township's Settlement Areas, that being either individual on-site sewage services and individual on-site water services or municipal water with individual on-site sewage systems. D.1.1.2 The Province and the County of Simcoe Official Plan provide policies that state that the preferred method of servicing for Settlement Areas is full municipal services. However, when directing development to rural Settlement Areas (like those in the Township), consideration is to be given to the provision of appropriate service levels and that infrastructure delivery be provided in a cost effective manner. As such, partial services or individual on-site sewage services and individual on-site water services are permitted in some circumstances. D.1.2 Objectives a) To ensure that public health is protected; b) To plan for sewage and water services in a fiscally responsible manner for the Township; c) To protect the natural environment as per the Natural Heritage policies of this Plan, which are found in Sections B.1 (Environmental Protection) and B.2 (Greenlands) of this Plan; d) To protect the municipal drinking water supply as per the Source Water Protection policies of this Plan; e) To identify the preferred means of servicing in the Township; f) To ensure that all servicing options are considered when major new development is proposed.

On Mon, Jun 10, 2024 at 1:14 PM Jason Covey <jcovey@tathameng.com> wrote:

Hi,

Thank you for your comments and for your interest in the Master Plan.

Capital costs for the preliminary preferred solutions were presented at the PIC held on June 4, 2024. Please refer to the slides (page 26) posted on the project website for the details: https://www.tiny.ca/WaterMasterPlan.

The annual Township water budget covers the cost of all planned maintenance, repairs, and upgrades for the year, not just water meter installation. Water meters are being prioritized for water systems with high water consumption rates and where there are anticipated to be leaks in the distribution system. This will help to reduce water consumption and leaks, and thereby potentially delay the expansion of water supplies.

The Township operates 24 water facilities in 16 municipal water systems. Some systems contain multiple pumphouses.

One of the goals of the Master Plan is to consider ways to improve the redundancy and reliability of the Township's existing municipal water systems. This not only provides flexibility for operation and maintenance but will also help to reduce the number of boil water advisories that are needed when completing system repairs.

Review of gravel pit operations in the Township is outside of the scope of the Master Plan study. No impacts to municipal water supplies are anticipated from the French's Hill gravel pit operation as it is not near to any Township wells or wellhead protection areas.

Regards.

Jason

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, June 4, 2024 5:58 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 06/04/2024 - 17:57

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I have a question. How much it would cost ?? You said it is a project for next 20 years. This year you got $1. 900 000 to install water meters into 2 stations. And you would have to install it into 16 stations? Would not be more economical just fix the problem you have with water stations, instead of sell those water meters to all Tiny? Also in the papers to WHO you it said that Tiny township has water 19 stations, what happened to those 3 stations that they are missing from your report? Also why you did not mention in your report Boil water advisories in Tiny Township? Was the contamination of the water related to Gravel Pit Operations in the French's Hill and CHR gravel pit? How many gravel pit now operating in Tiny? How many millions litres of fresh water are used by gravel pits every day compared to user from water stations?

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Monday, June 10, 2024 1:51 PM
To: [redacted]
[redacted] water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your question and for your interest in the Master Plan.

The Master Plan will identify the need to complete a study to consider options for improving water and sanitary servicing in the Balm Beach area. The Ossossane Beach area is near to Balm Beach and is similar, in that, there are a high density of cottages and homes serviced by private wells and septic systems. One of the objectives of the Balm Beach study will be to determine the extent of existing homes for which servicing needs to be improved.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Tuesday, June 4, 2024 6:57 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Tue, 06/04/2024 - 18:57

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Thank you for this presentation. With regards to Ossosane Beach are you able to provide me with an estimated timeframe for when metered water may be available?

Water Master Plan Email
[redacted]

Jason Covey

From: Germaine Muller [redacted]
Sent: Thursday, June 20, 2024 7:45 PM
To: Jason Covey
Cc: water@tiny.ca
Subject: Water Master Plan - June 4th Meeting

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Jason,

Thanks for forwarding this to me.

I guess my initial reaction to the June 4th meeting is WOW! Another Tiny Township underfunded, under addressed costly mess to deal with!! I am stunned and shocked at how bad the situation looks and how much it will cost to fix!

I gather that the 'source' of funds is the Water Reserve, which I assume is the $1,100 we pay a year for municipal water, which is projected at $2.4M for 2024. When compared to the costs outlined on page 27 of $13,850,000 (excluding long term projects), my jaw dropped to the floor! No figure is indicated for the Castle Cove, Vanier Woods and Lafontaine systems, but 'high capital costs' is referred to just not quantified. So I would guess that the $13.85 M is on the low side of expected short term costs. Are the 'studies' referred to in the fourth column on page 27 included in the $13.85M or extras? It's not clear. What do you see as 'short term' – how many years out from 2025 would we be looking at for that piece of the long term plan?

I was appalled to hear about how old and how bad the systems are. Based on the August 2023 presentation, 6479 homes (I believe it means "homes" under the header 'existing population'), with projected growth (add ons to the existing network I also presume) being 7871 reflecting additional planned growth of 1,392 homes to be added to the water system, versus wells. This would result in the Water Reserve having an extra $1.5M a year, thus $3.9M per year in total, at some point in the future when the add ons come on board. The footnote indicates both year-round and seasonal residents. It was noted at the meeting that residences that are not currently on municipal water would not HAVE TO join, but could choose to remain using wells. I wonder if that was factored into the 7,871 growth number.? With no cost ideas for the longer term, this Master Plan could easily turn into a massive, expensive, unrealistic undertaking, yet the status quo is not reasonable or acceptable either. I wonder how Tiny compares to other municipalities that have high percentages of their population not connected to municipal water systems and the shape of their systems. Have comparisons been made and if so, can that information be shared? What is the current percentage water system usage versus wells for Tiny? How many homes are in Tiny? Full time residents versus part time cottagers? The Municipal Fact Sheet from the 2016 Census indicates 9,712 total private dwellings, but it is not clear whether these include seasonal owners as well as year round owners. Updated numbers would be helpful.

I see the cost of water growing to exorbitant numbers, between immediate short term fixes, longer term planning cost implications, and water meters, that many homeowners currently on well water, and who find it acceptable to them, will have little to no incentive to sign on to municipal water. This would no doubt affect the total anticipated funds available for fixes, replacements, re-alignments, connections to new water sources, improvements to quality, sufficiency, reliability, improvements to fire protection, etc. It was made clear at the June 4th meeting that residents would not be obligated to sign on to municipal water. I think this is the wrong way to go and will result in too high a price for existing water customers to bear. In fact, we may prefer to transfer over to a well instead of staying on municipal water! Talk about a rock or a hard place!

Overall, I think a prioritization and costing of the short term fixes and an outline of what is envisaged in the longer term needs to be provided to the Public before the project moves any further along to completion of a Master Plan. I also think more communication is needed with township residents. I don't know what the attendance numbers (online and in person) were for the June 4th meeting, but this looks and sounds like something that needs to be well understood by Tiny's population, as part of the development of a Master Plan. And I don't mean limited on-line electronic messaging as the sole means of communication. Letters should be sent to all taxpayers, detailing the situation, the options and the implications both positive and negative (costs).

I specifically do not support connecting Balm Beach area to Perkinsfield and Lefaive, especially when the number 1 issue for Perkinsfield is groundwater supply insufficient and numerous other serious issues exist without expanding to Balm Beach. There are a lot of homes there, limited groundwater and massive infrastructure cost implications. As a minimum, let's consider walking before we attempt to run!

In closing, as a taxpayer and a municipal water resident, I am just a bit overwhelmed by some of these horror stories and their potential price tags!

Germaine Muller

From: Jason Covey <jcovey@tathameng.com>
Sent: June 10, 2024 1:53 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Please see attached copy of the June 4th PIC slides.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
705-444-2565 x2018, Collingwood, Ontario L9Y 5A6

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Wednesday, June 5, 2024 11:31 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Wed, 06/05/2024 - 11:31

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I can't find June 4th's presentation deck. can you send me a copy at [redacted] thank you

Water Master Plan Email
[redacted]

Jason Covey

From: Melanie Robitaille [redacted]
Sent: Thursday, June 13, 2024 11:37 PM
To: Jason Covey
Subject: Re: Webform submission from: Water Master Plan (123142)

Follow Up Flag: Follow up
Flag Status: Flagged

Good evening Jason,

I've been a resident here for some years now, and the spigots were running, or were open to drip all year round conveniently, up until just before the meters were installed in this area. My question stands, why didn't the town aim to figure out how much water was flowing through those spigots, say here in Perkinsfield - one of the highest usage areas - before they assumed it was all residential usage? Why are the people paying for water being penalized when it's not even clear exactly how much we were using vs what was being drawn at fill up stations, STRs, and overflow spigots?

Please excuse my miscommunication. I realize it's not all taxpayers that pay for the town water and only those that are on the town water system. But again, my question still stands. How does the township expect only 25% of the population in the town to pay for and carry the cost of a growing system? Which brings me to my third point. Local businesses and other residents may be on private wells, but they're all pulling water from the same aquifer source, putting strain on it for their operations, to fill their pools, or run their irrigation systems. Aquifers aren't infinite, and it's been shown before in towns with large bottling companies drawing from these systems that they can be over used by businesses to the local residents' detriment. What, if any groundwater studies are being carried out to learn more about these sources for our town to truly understand what's at work here, not just how much is flowing and are we chlorinating it enough for source water protection? How are we learning from places like Tottenham and Guelph?

Forgive my lack of faith in the MOECP which changes over every time a cabinet shuffles or an election happens, and the SSEA (which is NOT a conservation authority that did at one time have board members who were also on town council) is quite frankly THE smallest outfit I've seen to handle a watershed that spans some half a dozen rural townships and only has 9 monitoring wells (17 if we count the new 8 in the works, but there's no information on when that project will be complete). The town monitors, the town has to drink and live off the water, why isn't the town being more vocal and standing up for the water we

rely upon to drink just as it seems to be so concerned about the waterfront we should be able to access? None of the townships that rely upon this water seem to be.

You did not answer my 5th question. Will these meters be forever, and what is the township's plan for rate increases over time? It's my money that's paying for this system, just like the other 25% of us on this system, and we should have access to this information as stakeholders. It should be a matter of public record.

Thank you for confirming that the new recording is up on the site. I will take a listen and send in any further questions or comments. What is the final deadline for that? Covid has turned once largely cottage country areas into permanent residences, and STR's. The township is also allowing permits for much larger dwellings than that of the past, without any consideration for how that would negatively impact the future of services such as this. Tiny only puts some 2% of its budget toward planning. Matters such as this make it glaringly obvious what a ridiculously small amount that is. If our town "plans" to grow, and do it successfully and sustainably, it's evident we need a better plan.

Thank you kindly for your time and I look forward to hearing back from you at your convenience,

Melanie Robitaille

[redacted]

On Wed, Jun 12, 2024 at 12:37 PM Jason Covey <jcovey@tathameng.com> wrote:

> Hi,
>
> Thank you for your comments and for your interest in the Master Plan. Responses to your comments are as follows:
>
> 1. As part of the regular operation and maintenance of the municipal water systems, distribution system flushing is completed to ensure that the chlorine residuals are maintained and to prevent stagnant water in dead end watermains. Distribution system flushing is not carried out during periods of high demand. It does not impact the water usage rates presented. Water meters will be prioritized for water systems with high average household consumption and to help the Township reduce distribution system leakage due to watermain and service connection deficiencies such as cracks, breaks, and leaking pipe joints.
>
> 2. Costs to operate and maintain the municipal water systems are paid for by the water system users through water rates and not from the general tax base. Residents that are not connected to municipal water do not pay for the water systems.

3. Businesses, including gravel pits, that get their water from private water supplies do not impact the water usage rates of municipal water systems. Businesses that are connected to and get their water from a municipal water system pay the water rates specified by the Township. There are no gravel pits connected to a municipal water supply in the Township.

4. The Township monitors both raw and treated water at each pumphouse for the purpose of meeting regulatory requirements and to inform the day-to-day treatment and operations needs of the drinking water systems. On a broader scale, groundwater levels and quality information are monitored by the Provincial Groundwater Monitoring Network (PGMN), a partnership between the Ministry of Environment, Conservation and Parks, the conservation authorities, and municipalities. The Severn Sound Environmental Association, of which the Township is a member, also participates in the PGMN. Refer to the SSEA website for more information: https://www.severnsound.ca/programs-projects/monitoring/groundwater/

5. Water meter installation will be completed in the Township's water systems using a prioritized approach. Water meters will help the Township to better manage water usage and leakage moving forward in the systems where installed.

6. The PIC slides and video recording are now available on the project website here: https://www.tiny.ca/WaterMasterPlan

Regards.

Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Thursday, June 6, 2024 2:20 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Thu, 06/06/2024 - 14:20

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
1. Our usage across the township is said to be higher than what the provincial average is, and you refer to leaks. How do the township spigots that were left open and running all seasons, 24/7 at the end of many concessions contribute to this. Why were the residents/tax payers penalized with meters, and and the cost to implement this system. When didn't the town aim to figure that out first?

2. How can only 25% of the township and tax payers keep up a system that is obviously growing in demand, but not tax payers?

3. How are businesses like local gravel pits, which have extremely high water taking allowances for gravel washing operations being factored into these usages. What percentage of usage is business vs. residential, and how are businesses that have these higher usages being charged compared to residences?

4. We're told in the first public meeting that there are several aquifers the town is pulling water from, that they're quite sustainable, and that they discharge into nearby streams, etc. When a resident notices a change to or turbidity in nearby tributaries, who or what level of government monitors that? The township monitors the water they pull and treat from the aquifers, but who or what level of government is monitoring the health and well-being of the aquifers themselves?

5. It was said that we wouldn't have these meters forever, but is that truly the case? Why would the township spend so much to monitor each individual residence, only to do away with it, instead of putting tax dollars into alternative water catchment incentives?

6. I wasn't able to attend or zoom on the second public meeting recently. When can we expect the recording of that to be released for viewing?

Water Master Plan Email

[redacted]

Jason Covey

From: Jason Covey
Sent: Wednesday, June 12, 2024 5:43 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thanks for your email and for your interest in the Water Master Plan.

If I understand correctly and based on your location, you are on private well and not connected to a municipal water system, which is the case for most Township residents.

The township's fire department utilizes a shuttle service to bring lake water or water from a nearby municipal water system with a water storage tank, to fight a fire in communities without municipal water. The Township's Whippoorwill pumphouse is about 1 km away from you. In the event of a fire, the fire department would fill be able to fill up their pumper trucks at a hydrant near to this pumphouse.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, June 10, 2024 8:50 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 06/10/2024 - 20:50

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
No water available near my house on whippoorwill drive for fire activity, if my house lights on fire it will burn because no water supply is close enough

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Wednesday, June 12, 2024 5:57 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thanks for your comment and for your interest in the Water Master Plan.

If there are no hydrants in your area, this would mean you are either on a private well or you are connected to a municipal drinking water system that was originally designed for a seasonal occupancy community, that has no treated water storage and was not designed to supply water for fire fighting. Only five of the 16 drinking water systems in the Township (Bluewater, Lafontaine, Perkinsfield, Whippoorwill and Wyevale) are designed to provide some level of fire protection.

The township's fire department utilizes a shuttle service to bring lake water or water from a system with a water storage tank to fight a fire in those communities that do not have a municipal water supply for fire protection. The Township has a tanker shuttle accreditation that can be submitted to your insurance company, found here: https://www.tiny.ca/services/fire-emergency-services/tanker-shuttle-accreditation

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, June 10, 2024 10:34 PM

To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 06/10/2024 - 22:34

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
I don't have any hydrants in my area, it would be nice to have some kind of water reservoir to help lower my insurance.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Thursday, June 13, 2024 4:38 PM
To: [redacted]
[redacted]
water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your comments and for your interest in the Water Master Plan.

Many of the Township's drinking water systems were designed for seasonal occupancy communities, and generally have no treated water storage and were not designed to supply water for fire fighting. The Township's fire department utilizes a shuttle service to bring lake water or water from a network of water storage tanks to fight a fire in those communities. Only five of the 16 DWS (Bluewater, Lafontaine, Perkinsfield, Whippoorwill and Wyevale) are designed to provide some level of fire protection.

The Township Fire Department has tanker shuttle accreditation which can be submitted to your insurance company. Details can be found here: https://www.tiny.ca/services/fire-emergency-services/tanker-shuttle-accreditation

In parallel with the Water Master Plan, the Township is reviewing and considering improvements to its water supply for fire protection network of storage tanks and dry hydrants.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Thursday, June 13, 2024 11:38 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Thu, 06/13/2024 - 11:37

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Firefighter water supplies should be expanded throughout the municipality. There is no municipal water system in my area thus there is no firefighting water supply available and it must be trucked in from a great distance.
Expanding current water systems nearby that currently have no reservoir capacity would greatly improve the safety of my family and the other residents in our area, it would also reduce our fire insurance rates.

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Friday, June 21, 2024 4:15 PM
To: [redacted]
[redacted] water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your question and for your interest in the Water Master Plan.

Currently, there are no specific plans to extend the Lefaive municipal drinking water system to connect residents on Lefaive Road. The Master Plan will propose further study to consider the needs and possible solutions to providing improved water and sewer servicing in the Balm Beach area. If there is an interest from residents on Lefaive Road to receive municipal water, it would be helpful to have any related comments you can provide.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Suite 200, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, June 17, 2024 11:09 AM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 06/17/2024 - 11:08

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Is there any plan to add Lefaive Road residents to the Lefaive municipal well in the future?

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Tuesday, June 18, 2024 4:53 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123060)

Hi,

Thank you for your comment and for your interest in the Water Master Plan.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, June 17, 2024 4:23 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 06/17/2024 - 16:23

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Firefighter water supplies should be expanded throughout the municipality

Water Master Plan Email
[redacted]

Jason Covey

From: Jason Covey
Sent: Tuesday, June 18, 2024 4:59 PM
To: [redacted]
Cc: water@tiny.ca
Subject: RE: Webform submission from: Water Master Plan (123142)

Hi,

Thank you for your comments and for your interest in the Water Master Plan.

Many of the Township's drinking water systems were designed for seasonal occupancy communities, and generally have no treated water storage and were not designed to supply water for fire fighting. The Township's fire department utilizes a shuttle service to bring lake water or water from a network of water storage tanks to fight a fire in those communities. Only five of the 16 Drinking Water Systems (Bluewater, Lafontaine, Perkinsfield, Whippoorwill and Wyevale) are designed to provide some level of fire protection.

The Township Fire Department has tanker shuttle accreditation which can be submitted to your insurance company. Details can be found here: https://www.tiny.ca/services/fire-emergency-services/tanker-shuttle-accreditation

In parallel with the Water Master Plan, the Township is reviewing and considering improvements to its water supply for fire protection network of storage tanks and dry hydrants.

Regards.
Jason

TATHAM ENGINEERING

Jason Covey P.Eng.
Senior Engineer

jcovey@tathameng.com **T** 705-444-2565 x2018 **C** 705-888-0186
115 Sandford Fleming Drive, Collingwood, Ontario L9Y 5A6

tathameng.com

From: no-reply@web-response.com <no-reply@web-response.com>
Sent: Monday, June 17, 2024 4:21 PM
To: Jason Covey <jcovey@tathameng.com>; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Mon, 06/17/2024 - 16:21

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
There is no municipal water system in my area thus there is no firefighting water supply available and it must be trucked in from a great distance. Expanding current water systems nearby that currently have no reservoir capacity would greatly improve the safety of my family and the other residents in our area, it would also reduce our fire insurance rates.

Water Master Plan Email
[redacted]

Jason Covey

From: no-reply@web-response.com on behalf of Township of Tiny <no-reply@web-response.com>
Sent: Wednesday, June 19, 2024 10:03 AM
To: Jason Covey; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Wed, 06/19/2024 - 10:02

Submitted by: Anonymous

Submitted values are:

Water Master Plan Comments & Questions
Breakdown of areas: Lumping Lefaive with Balm Beach and Perkinsfield is a large stretch when the only item for Lefaive would be metering.
It is inconceivable that a WTP for Balm Beach/Perkinsfield/Lefaive is anything but a plan to urbanize the entire Township out of Georgian Bay.

Water Master Plan Email
[redacted]

Jason Covey

From: Jessie Garland [redacted]
Sent: Monday, June 24, 2024 2:36 PM
To: Jason Covey
Cc: L. M.; Anna Nowaczyk; Kelly Clements; Ken Venables; Sue Browne; Tim Leitch
Subject: Tiny Water Treatment & Servicing Master Plan

The report completed by Tatham Engineering and presented to the public on June 4, 2024 identified all the issues at the township's pump houses. However, our concern is that the burden of paying for all the upgrades will fall upon the 25% of residents who are using the municipal system. These costs are substantial and unless more residents join the municipal system or the cost is distributed among all the Tiny residents, our taxes will rise significantly and render our properties unaffordable.

Regards,
Jessie Garland,
President, Bluewater Dunes Ratepayers Corporation
cc. BDRC board

Jason Covey

From: no-reply@web-response.com on behalf of Township of Tiny <no-reply@web-response.com>
Sent: Friday, June 28, 2024 9:07 PM
To: Jason Covey; water@tiny.ca
Subject: Webform submission from: Water Master Plan > Content rows

Submitted on Fri, 06/28/2024 - 21:06

Submitted by: Anonymous

Submitted values are:

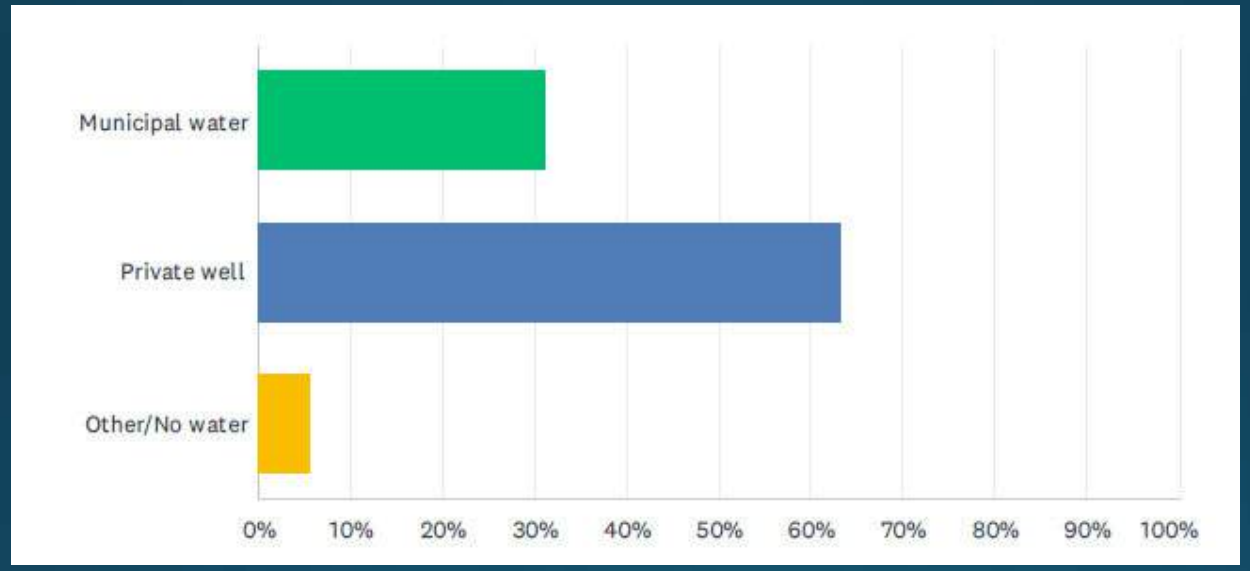
Water Master Plan Comments & Questions
My area, and many of the surrounding areas in Tiny, do not have a municipal water system and thus Firefighters need to truck water in from a ways away. This is a safety concern for my family and others in the area and also increases our fire insurance rates. Expanding water systems that currently have no reservoir capacity would bring a lot more peace of mind.

Water Master Plan Email
[redacted]

Appendix C:
Township Survey

Water Master Plan Survey Results

Where do you get your drinking water from?

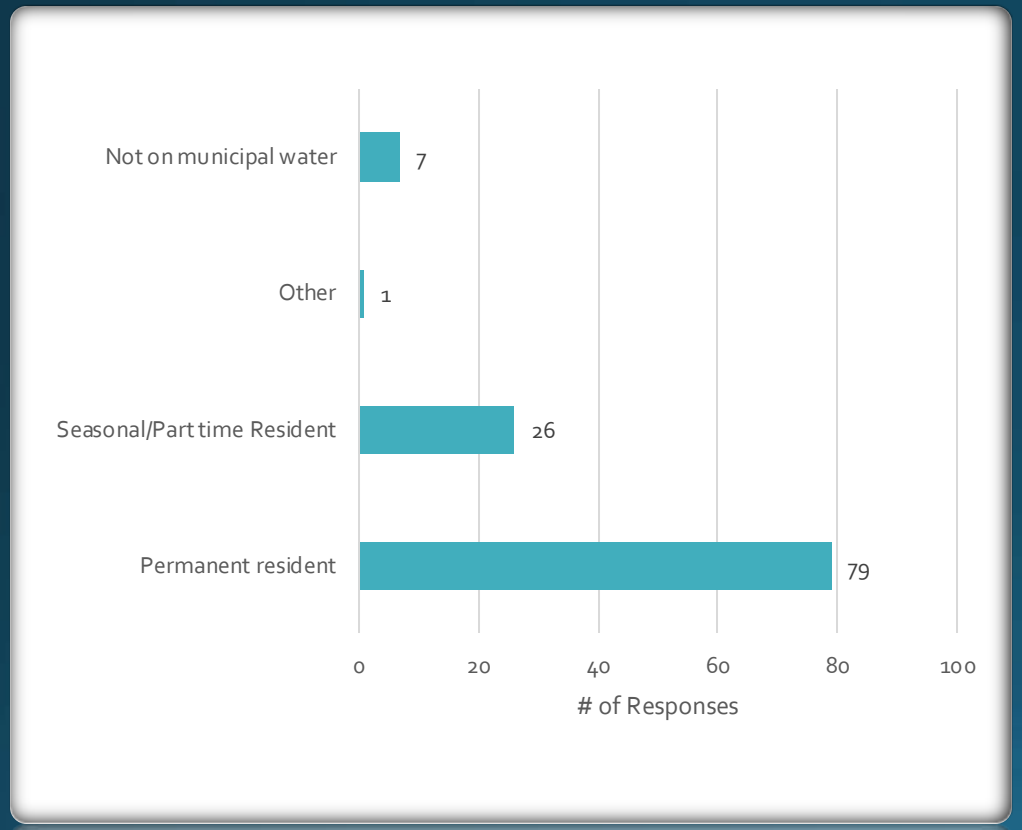


ANSWER CHOICES	RESPONSES	
Municipal water	31.13%	113
Private well	63.36%	230
Other/No water	5.51%	20
TOTAL		363

Where do you get your drinking water - Other

- The residents that responded other get their drinking water from:
  - Bottled water or fill up at filling stations
  - From a filter box in the lake that is then pumped and filtered in the cottage with a UV system

Municipal Water – Residence status



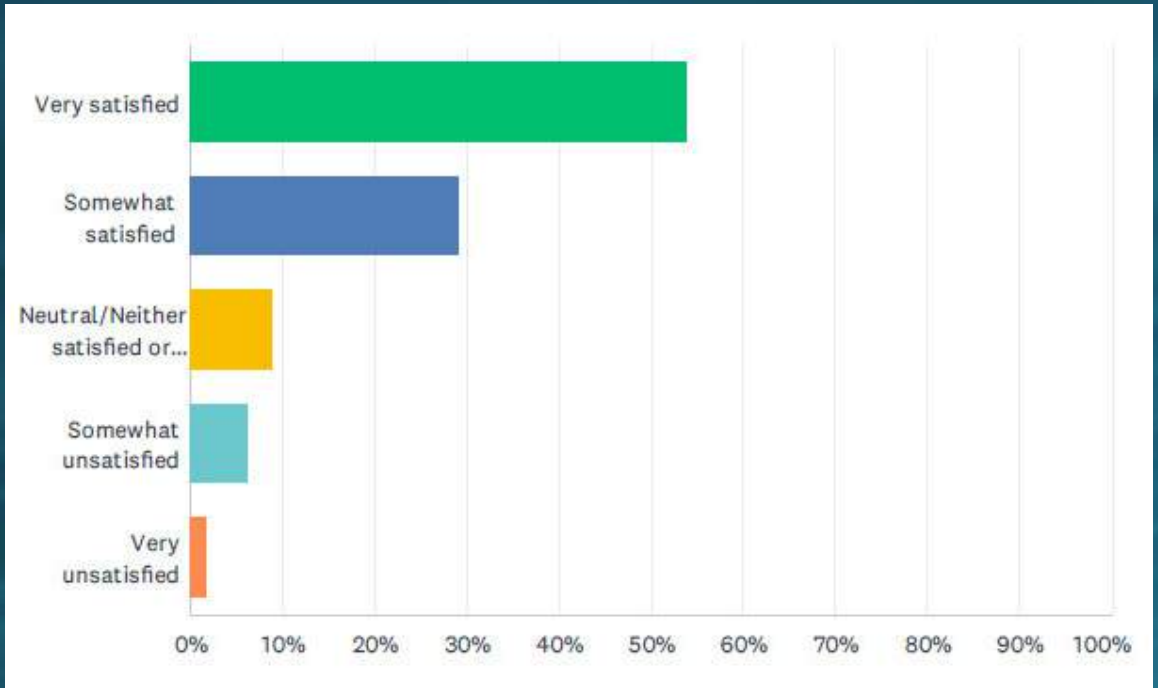
- 26 Responses – Seasonal/Partime
  - Bluewater, Cooks Lake, Georgian Bay Estates, Lafontaine, Lefaive
- 79 Responses – Permanent
- 1 Response - Other
- 7 Responses – Seasonal residences that use the public taps

Municipal Water Satisfaction

Somewhat unsatisfied and very unsatisfied

- Castle Cove – 1 response
  - The water often smells like chlorine and tastes awful. The resident would like to have the ability to put in a well instead of being forced to have municipal water
- Lafontaine – 2 responses
  - Nitrates continue to be high. Regardless of the report indicating it is safe to drink, we are not confident or comfortable with it.
  - At certain times of the year the tap water smells. The water is inconsistent with the taste. The water is hard. (The resident says they are happy they have municipal water, I cannot complain too much)
- Lefaive – 1 response
  - We are season residents but pay an annual fee. They would prefer to pay based on use.

Municipal Water Satisfaction



ANSWER CHOICES	RESPONSES	
Very satisfied	53.98%	61
Somewhat satisfied	29.20%	33
Neutral/Neither satisfied or unsatisfied	8.85%	10
Somewhat unsatisfied	6.19%	7
Very unsatisfied	1.77%	2
TOTAL		113

Bluewater – 12 responses
Castle Cove – 6 responses
Cooks Lake – 3 responses
Georgian Bay Estates – 2 responses
Lafontaine – 30 responses

Lefaive – 23 responses
Perkinsfield – 5 responses
Rayko – 1 response
Sawlog Bay – 4 responses
Vanier Woods -2 responses

Whip-poor-will – 3 responses
Wyevale – 15 responses
Not on municipal water – 7 responses

Municipal Water Satisfaction

Somewhat unsatisfied and very unsatisfied

- Perkinsfield – 2 responses
  - Often water has an orange, dirty look to it, when this occurs and they run the water for a bit, there is sand at the bottom of the tub.
  - There is a pink mold in standing water. Not drinkable
- Wyevale – 1 response
  - Changes to charging residents for their water is communist. Stop charging for water use and trying to control our lives. We live beside Georgian Bay
- NOT ON MUNICIPAL WATER – 2 responses
  - Resident unsatisfied with Perkinsfield fill up station. It is not user friendly. It should be covered from rain and snow for year round use.
  - Taxes are too high & services too few

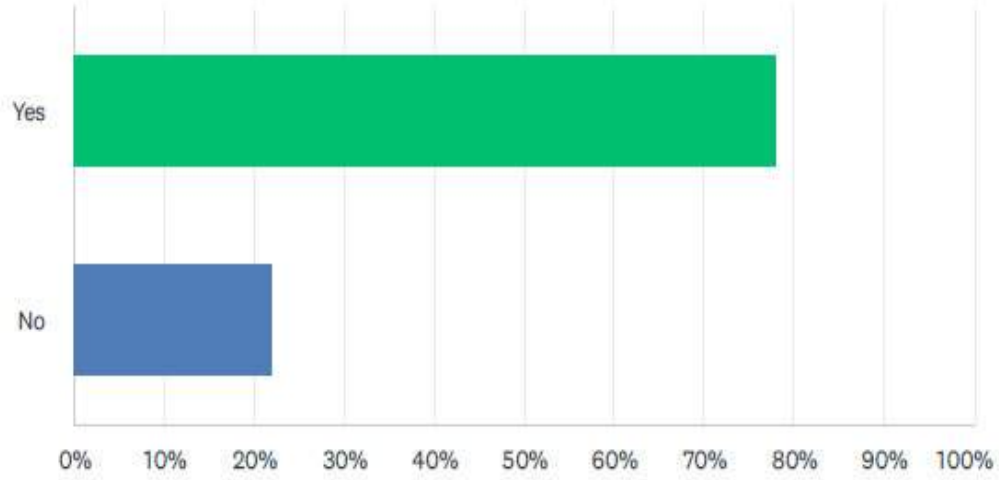
Wells – Residence Status

Other:

- Year round, part time
- Occasional resident throughout the year
- Moving to permanent resident
- Live here half the year
- Mostly permanent
- Most weekends all year long
- 5 days a week, every week

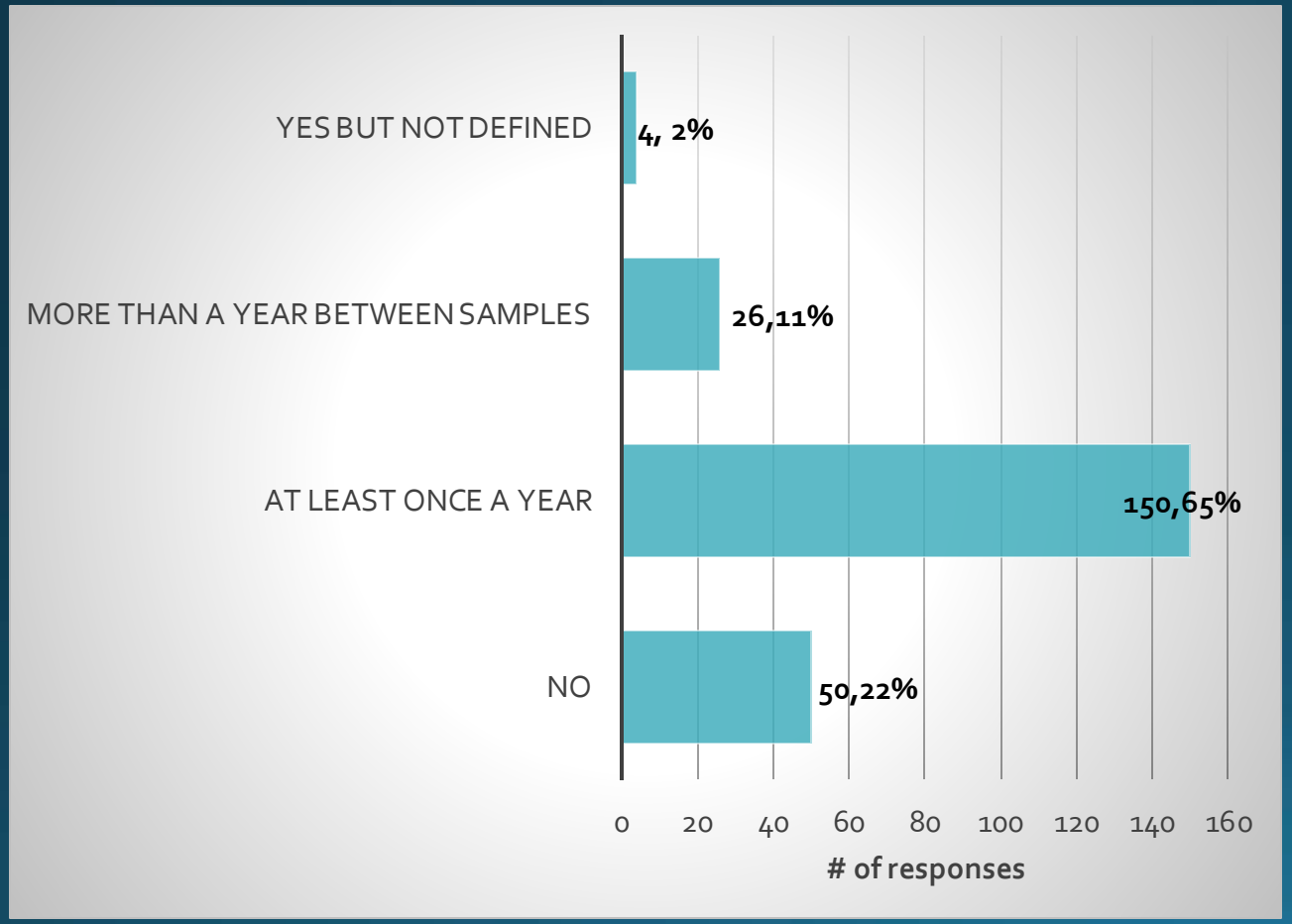
Residents with Wells

- Do you test the water from your well?



ANSWER CHOICES	RESPONSES	
Yes	78.02%	181
No	21.98%	51
TOTAL		232

Frequency of testing



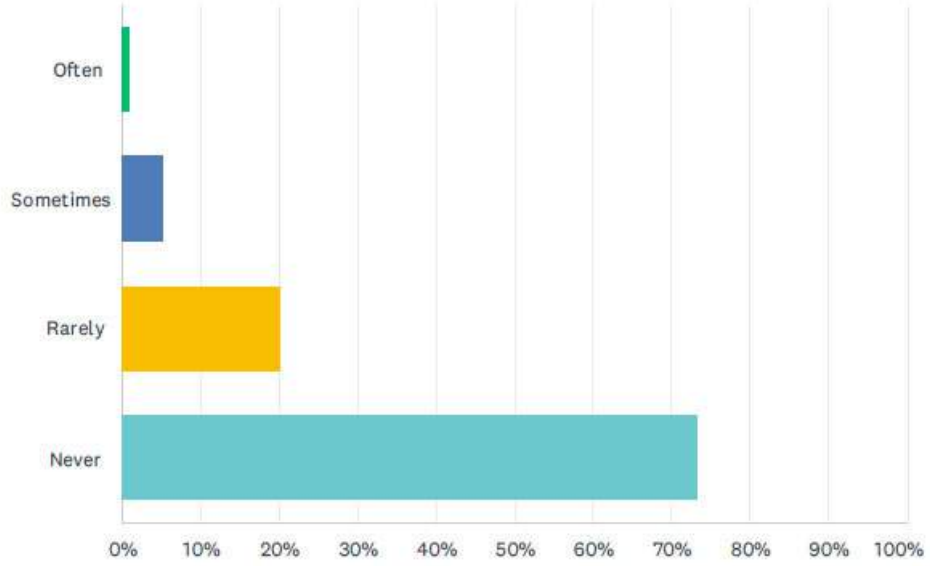
Out of 232 residents that responded, 22% of residents do not test their well at all. While 65% sample their wells at least once a year and 11% sample every two years or longer. In total 78% of residents test their well at some point.

Why are residents not testing their wells?

- They don't drink it, they only use it for washing etc.
- They are not sure how or where to test it. Not convenient to get the test done
- Their sample results have not changed so they decided to stop testing
- They have a filter and UV system to clean the water
- Haven't felt a need

For residents who do not test their well, very few still drink the water. Some residents do not drink their water because it doesn't taste/smell good and it's not tested.

Do you ever run out of well water?



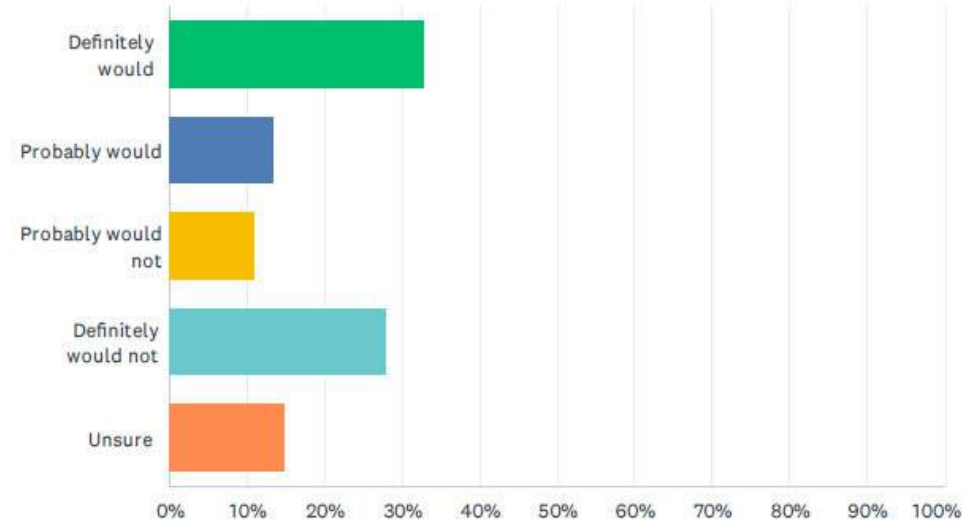
ANSWER CHOICES	RESPONSES	
Often	0.90%	2
Sometimes	5.41%	12
Rarely	20.27%	45
Never	73.42%	163
TOTAL		222

Areas where residents often and sometimes run out of water

Other concerns about personal wells

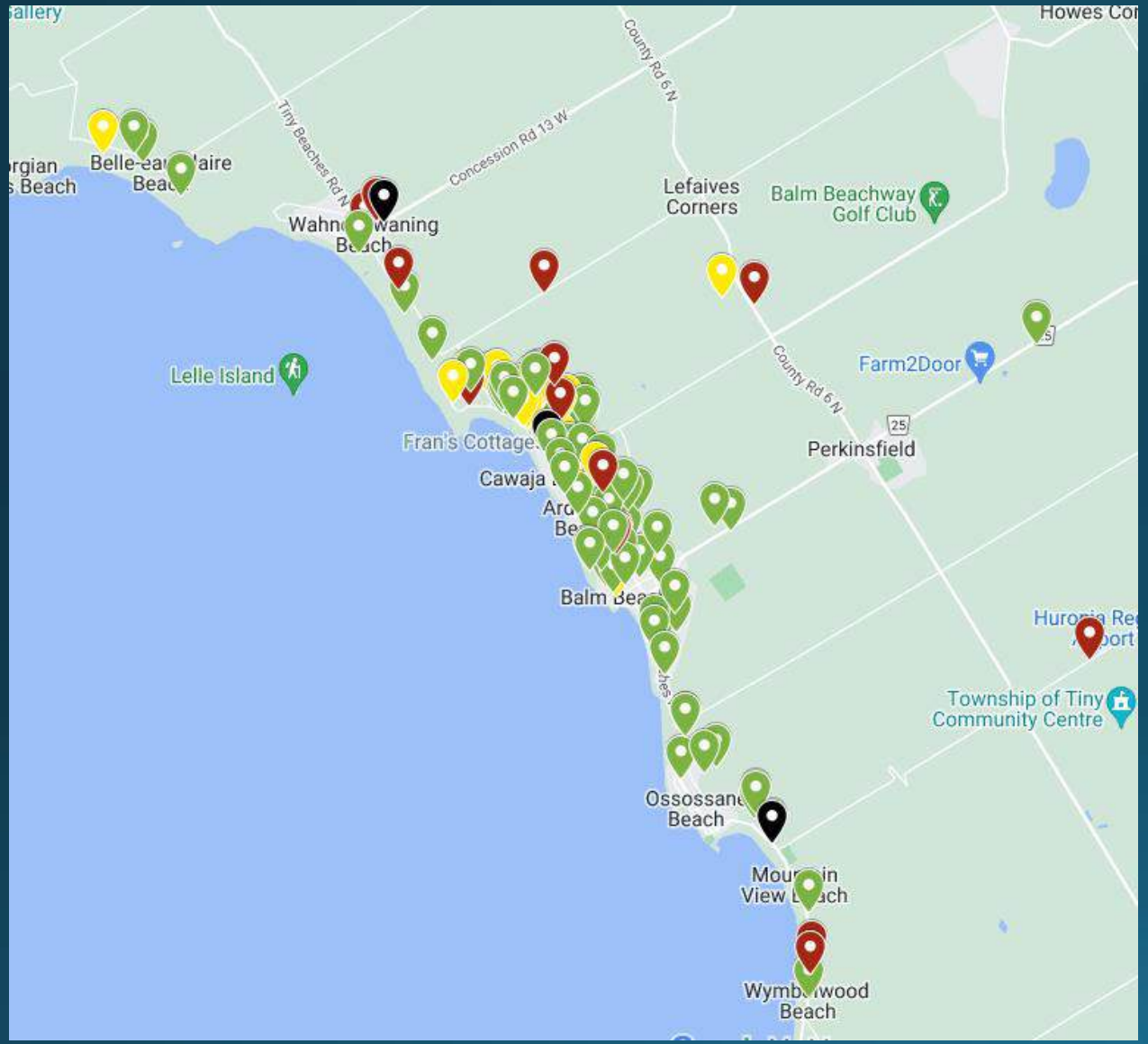
- Concern about neighbors septic failed and it causes installation of UV and RO system to guard against ecoli
- Neighbor dug a new well and blocked out use of the acquifer that fed both properties
- No longer meets safe drinking/potable standards
- Age and future maintenance
- May not be deep enough
- Well was inspected by severn sound and it does not have clay around it and it is leaching surface contaminants so I have installed a water purification system
- Chemical contaminant which Simcoe County Health unit does not check for
- Not enough water, hand dug, shallow, too much iron, worried about running out of water
- Water has a lot of dissolved salts and dissolved iron.
- Dug wells
- Run off from Pauze Dump site

If municipal water was available, would you want to connect to it?



ANSWER CHOICES	RESPONSES	
Definitely would	32.88%	73
Probably would	13.51%	30
Probably would not	10.81%	24
Definitely would not	27.93%	62
Unsure	14.86%	33
TOTAL		222

Red – Definitely would not or probably would not
Green – Definitely would or probably would not
Yellow - Unsure



Red – Definitely would not or probably would not
Green – Definitely would or probably would not
Yellow - Unsure

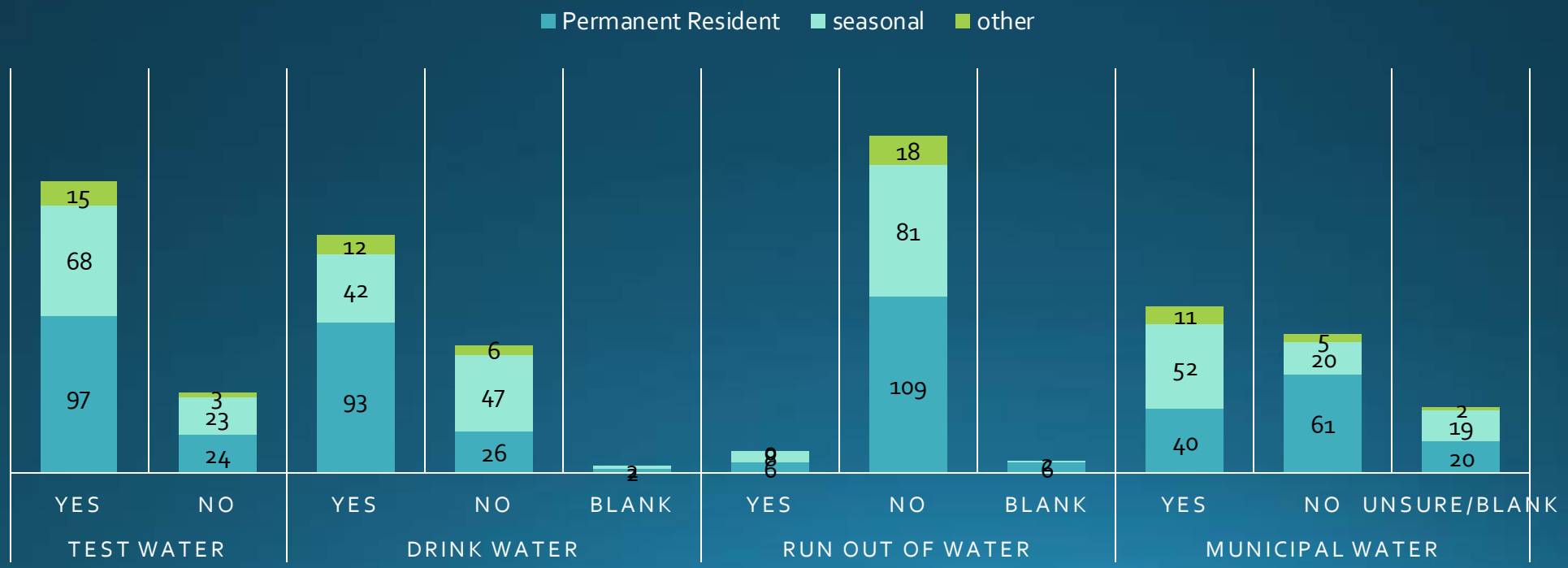
Red – Definitely would not or probably would not
Green – Definitely would or probably would not
Yellow - Unsure

Why residents do not want to connect

- Cost
- Seasonal residents
- Don’t want to pay for water services
- Not a fan of chlorine
- Many residents do not trust municipal water.
- Residents don’t want water restrictions

Breakdown of Well residents and Responses

	Test Water		Drink Water			Run out of water			Municipal Water Available, would you connect?		
	Yes	No	Yes	No	Blank	Yes	No	Blank	Yes	No	Unsure/Blank
Permanent	97	24	93	26	2	6	109	6	40	61	20
Seasonal	68	23	42	27	2	8	81	2	52	20	19
Other	15	3	12	6	0	0	18	0	11	5	2



In conclusion

- Most residents on municipal drinking water are satisfied with its quality and service.
- Based on survey results, over 65% of residents test their wells. The public would like more communication about well sampling.
- The area that has the highest want to municipal water is the Balm beach area