



The CountyTM

PRINCE EDWARD COUNTY ✦ ONTARIO

WELCOME

Regional Water Supply Servicing Master Plan

Public Consultation Centre #2

Thursday, April 11th, 2024

6:00 pm to 8:00 pm

Wellington & District Community Centre, 111 Belleville St., Wellington

Key Instructions for this Meeting

1

Please Sign in
Meeting is a “Drop-in” format.

2

Review Display Materials
Our representatives will be pleased to discuss the study, or any questions or concerns that you may have.

3

Complete a Comment Sheet
Drop off your completed Comment Sheet in the Box tonight or return it to the people shown on the Comment Sheet by April 25, 2024

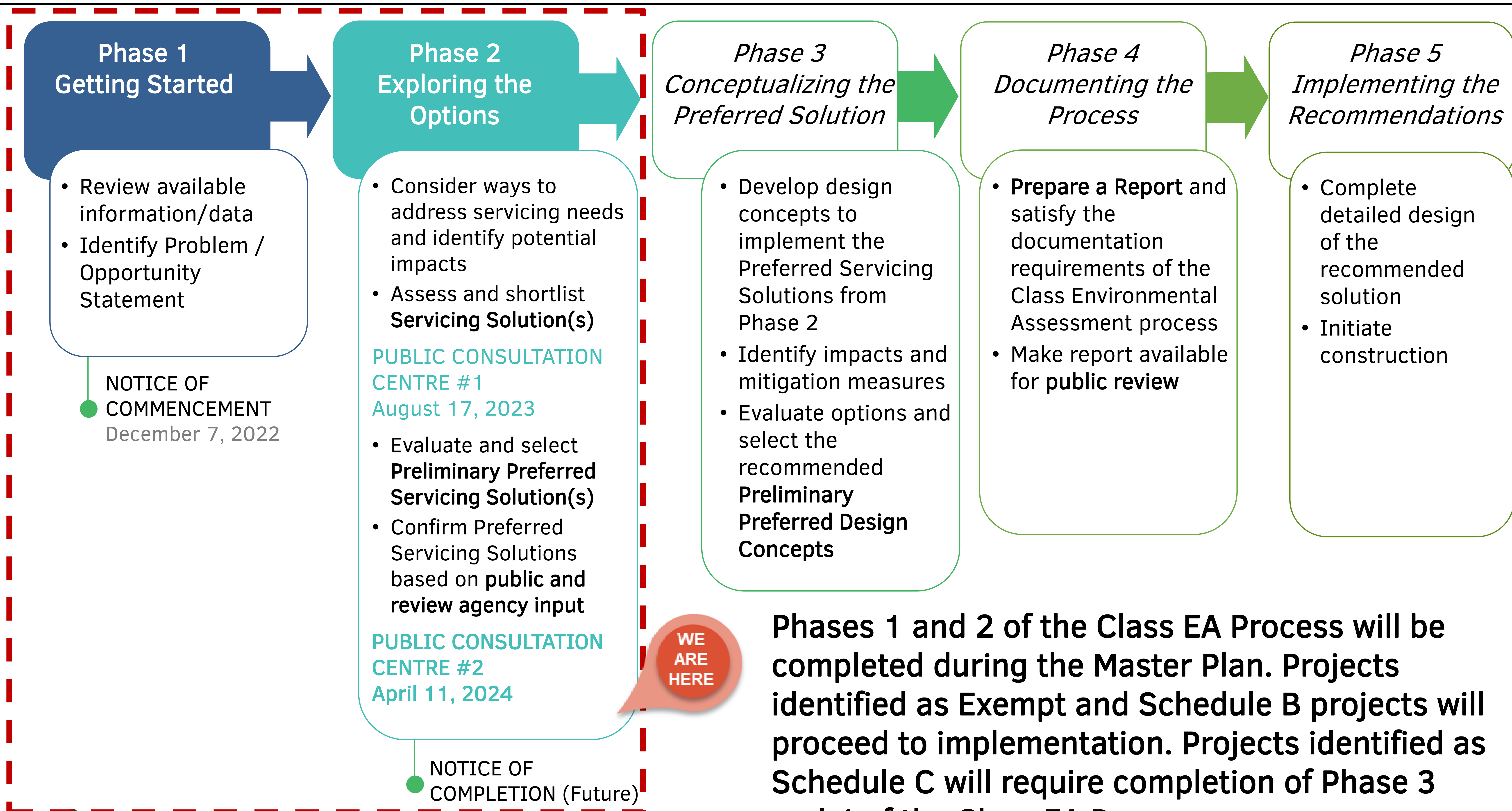
Public Consultation Centre #2 (PCC #2)

Master Plan Context

- Master Plans are long range plans that integrate a high-level review of infrastructure servicing requirements for a broad study area with order of magnitude implementation costs.
- Master Plans identify individual infrastructure projects distributed geographically across the study area, to be implemented gradually over time.
- Master Plans fulfill **Phase 1 and Phase 2 of the Municipal Class Environmental Assessment** planning process.
- The Regional Water Supply Servicing Master Plan is being conducted under **Approach 2 for Master Planning**. The work completed under the Master Plan will fulfill the requirements of Schedule B projects and provide supporting information for Schedule C projects. Recommended Schedule C projects will require additional investigation to fulfill Phases 3 and 4 of the Municipal Class EA process.
- A **Master Plan Report will be prepared** at the end of the study and made available for public review.



Overview of Activities under the Class EA Process



How is Municipal Drinking Water Delivered in Prince Edward County?

The Municipality owns and operates four (4) independent drinking water systems and two (2) distribution systems, as shown in the map and below:

1. Ameliasburgh Drinking Water System
 - Water source: Roblin Lake
2. Consecon/Carrying Place Water Distribution System
 - Water source: Trent River
 - Treated water supplied by City of Quinte West
3. Peat's Point Drinking Water System
 - Water source: Groundwater well
4. Rossmore/Fenwood Gardens Water Distribution System
 - Water source: Bay of Quinte (Lake Ontario).
 - Treated water supplied by City of Belleville
5. Picton/Bloomfield Drinking Water System
 - Water source: Picton Bay (Lake Ontario)
6. Wellington Drinking Water System
 - Water source: Lake Ontario



Opportunities and Constraints in Current System



CONSTRAINT

- The Municipality currently operates six (6) separate municipal drinking water systems. The large number of municipal drinking water systems, relative to the small customer base in some areas, represent major operational and financial implications.
- Two (2) of these systems rely on external municipalities for treated water. Intermunicipal agreements are in place which set a daily volume allowance and unit price for the Consecon/Carrying Place and Rossmore/Fenwood Gardens water distribution systems.
- Some municipal water systems experience limitations due to aging infrastructure.
- Some municipal raw water intakes are located in areas vulnerable to certain risks, contaminants and fluctuations in water quality.



OPPORTUNITY

- Other ongoing planning projects – **The Picton Master Servicing Plan and the New Wellington Water Treatment Plant Schedule C Class EA Study**, offer an opportunity to maximize synergies between infrastructure projects.
- Infrastructure improvements can be planned to account for additional demands to support new growth (development). New growth responsible for its share of infrastructure project costs.

Problem/Opportunity Statement

Municipal water services in Prince Edward County are provided through six drinking water systems servicing independently the settlement areas in the Urban Centres of Picton, Wellington, and Rossmore, and in the Villages of Bloomfield, Ameliasburgh, Consecon, Carrying Place, and Peat's Point.

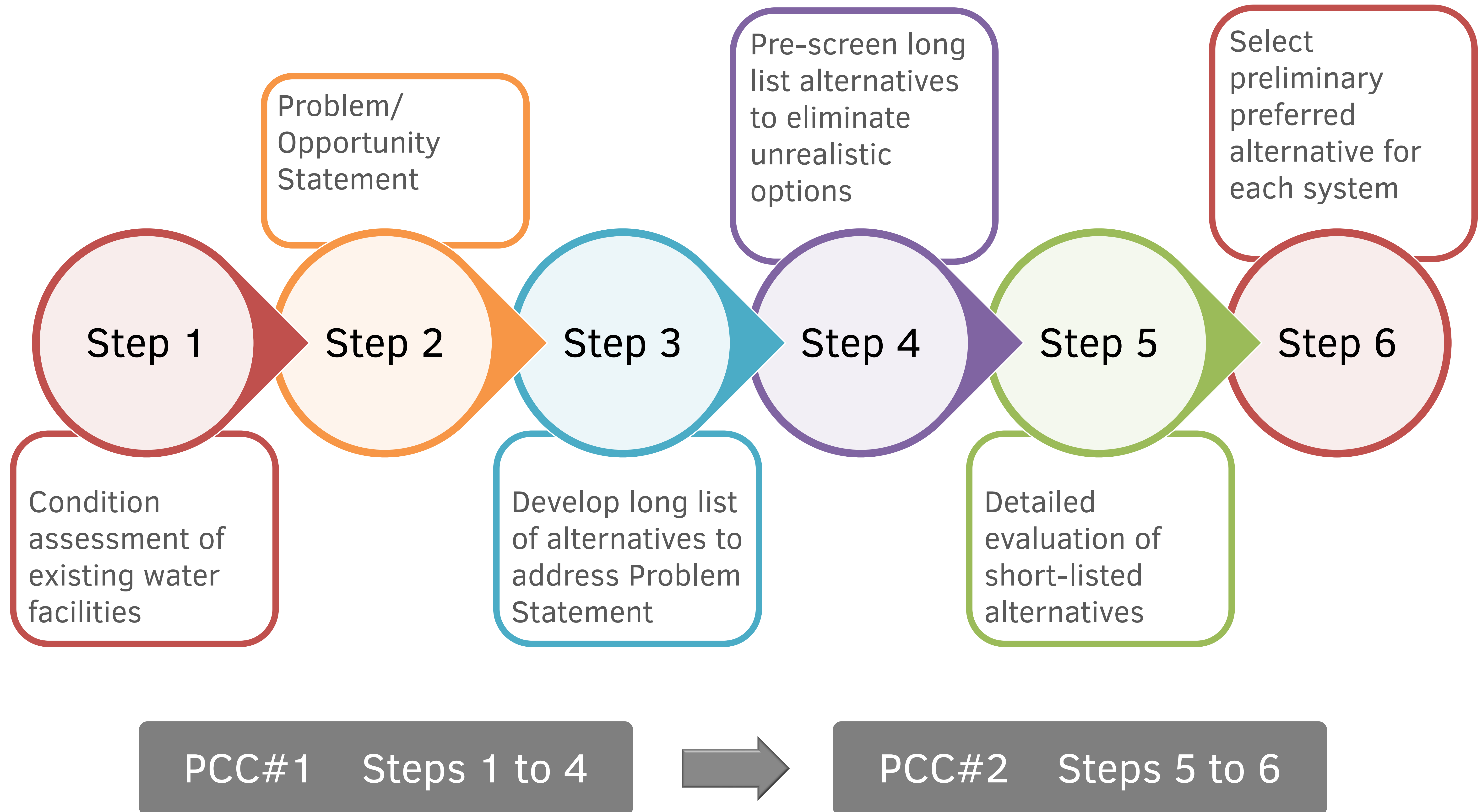
Six independent municipal drinking water systems, relative to the small customer base in some areas, represent major operational and financial implications to the Municipality. In addition, infrastructure upgrades to some systems will be required to alleviate existing limitations of aging infrastructure and to support long term servicing needs.

A broader review of the municipal drinking water servicing needs will help establish a long-term comprehensive Regional Water Servicing Strategy, to provide ongoing servicing in a sustainable and financially responsible manner.



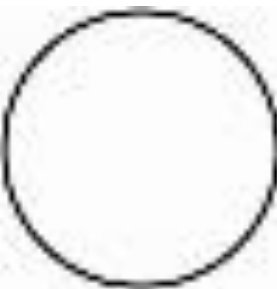

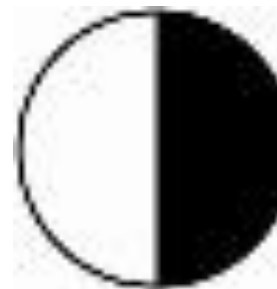


Study Area Limits – Regional Water Supply Servicing Master Plan

Process for Selecting the Preliminary Preferred Water Servicing Strategies







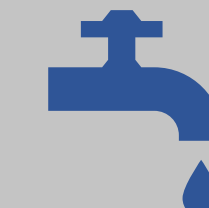

Scoring Approach

Short listed alternatives were assessed relative to each other, and assigned a score based on potential net impact and available mitigation measures. Scores were assigned based on the following scoring approach:

				
Potential impacts are significant, implementation of substantial mitigation measures are required. Risk cannot be eliminated.	Potential impacts are major, implementation of extensive mitigation measures required to reduce/eliminate risks.	Potential impacts are moderate, implementation of many mitigation measures required to reduce/eliminate risks.	Potential impacts are minor and can be easily mitigated through implementation of standard mitigation measures.	Potential impacts are negligible, no mitigation required.



Buildout Population and Water Demand Projections

Municipal System	Existing Conditions			Future (Buildout) Conditions		
	Existing (2021) Serviced Population 	Existing (2021) Maximum Day Demands m ³ /day 	Existing (2021) Peak Hour Demands m ³ /day 	Future (Buildout) Serviced Population* 	Future (Buildout) Maximum Day Demands m ³ /day 	Future (Buildout) Peak Hour Demands m ³ /day 
Ameliasburgh	260	58	160	293	137	206
Consecon/Carrying Place	845	552	830	921	809	1,214
Peats Point	63	19	47	63	30	44
Picton/Bloomfield (Residential + Industrial + Commercial + Institutional)	5,796	3,578	6,843	32,600	22,000	32,400
Rossmore/Fenwood Gardens	1,074	840	1,452	1,400	987	1,480
Wellington (Residential + Industrial + Commercial + Institutional)	2,248	1,282	2,559	14,500	14,000	21,000

**Buildout refers to the development of the entire Secondary Plan settlement boundary. Buildout population projections were calculated based on development densities specified in the Secondary Plans and Official Plan.*

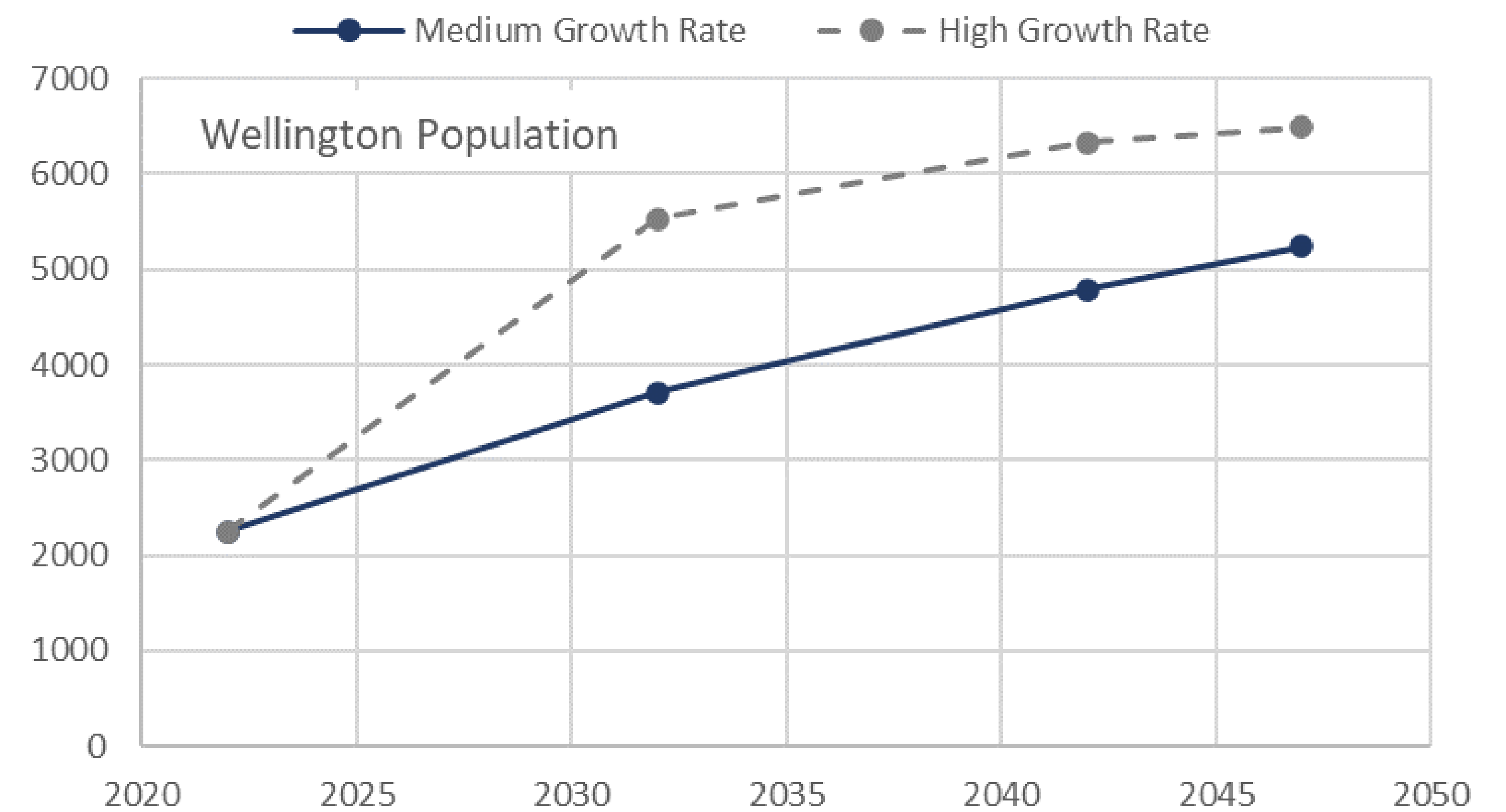
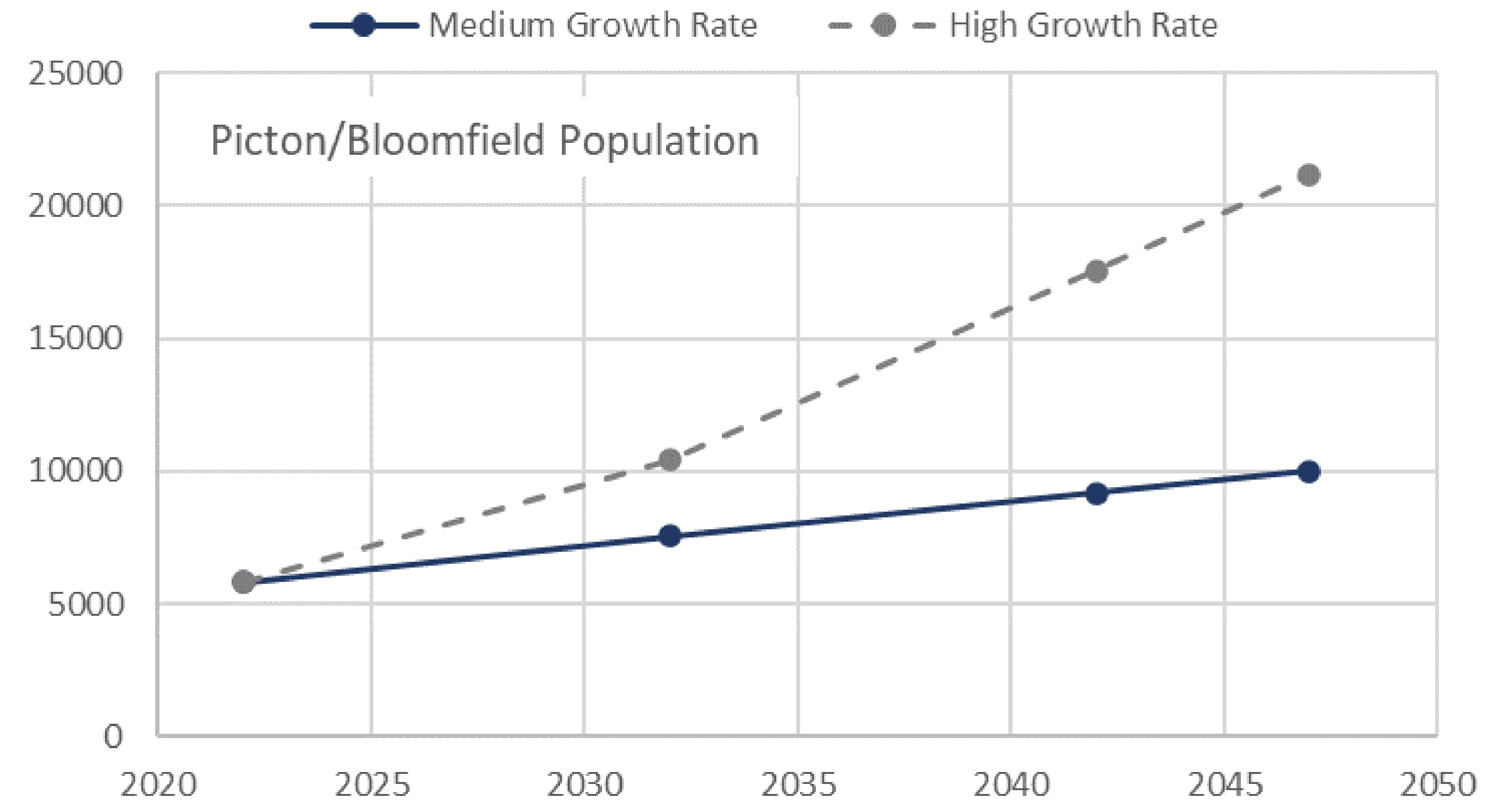
Picton/Bloomfield and Wellington Population Basis

Picton/Bloomfield and Wellington are the larger urban areas designated for growth in both the Official and Secondary Plans.

The planning horizon for this master plan study was 2047 and in accordance with the high growth rate scenarios developed by Watson and Associates in 2023.

The water treatment facilities and associated infrastructure needs were evaluated and selected to meet the projected 2047 water demands and have the ability to be expanded in the future (Initial infrastructure projects).

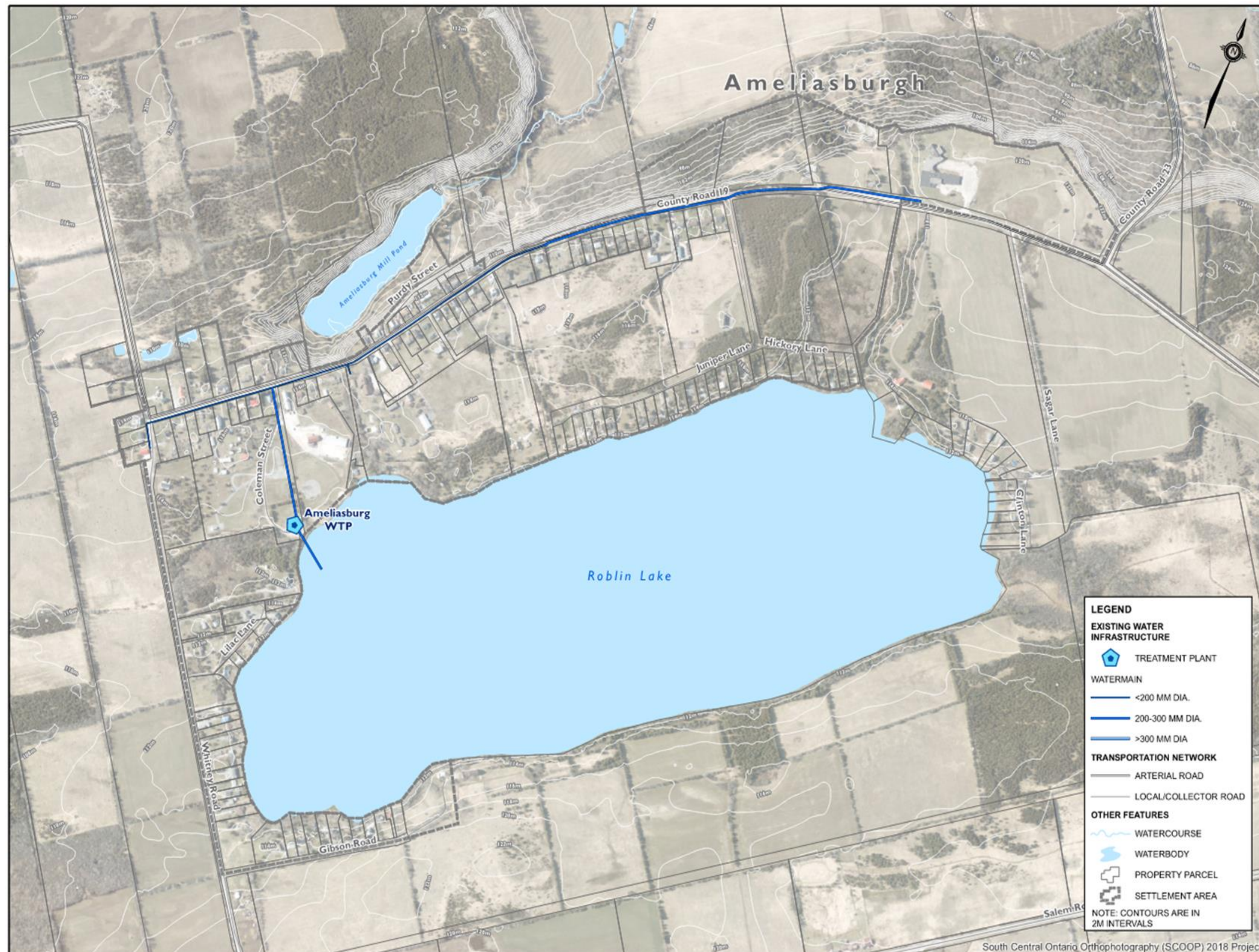
Consideration for a longer planning period of more than 75 years was given for in ground and in water works to maximize construction efficiencies, minimize long term construction costs and reduce future overall disruptions.



System #1 – Ameliasburgh Drinking Water System

Key Infrastructure:

- Water intake sourcing raw water from Roblin Lake, supply capacity: 360 m³/d
- Water treatment plant with rated capacity: 360 m³/d
- Distribution watermains – Fire protection by tanker truck



- Current system has sufficient capacity to meet current and future water demands
- Existing treatment system is effective to operate
- Available land within existing site for a system expansion, including storage facilities.
- Roblin Lake is a source water protected feature. The lake is in an upland area with no tributaries draining to it.



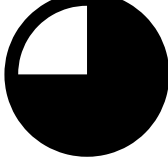
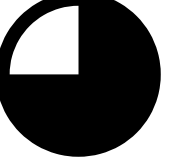
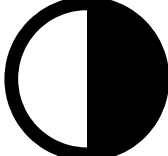
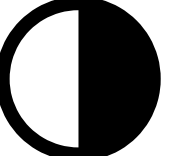

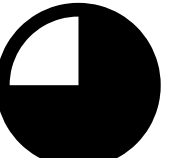
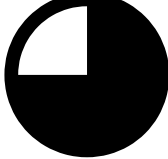
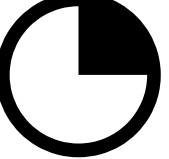

CONSTRAINT

- Existing system has annual water use restrictions due to operational needs
- Low water levels experienced during drought
- Aging treatment process equipment
- Remote location of serviced area limits potential interconnection to other areas.
- No existing water storage for fire flows or pump control.

Shortlisted Alternative Servicing Strategies:

1. Do Nothing
2. Expand/Upgrade/Retrofit existing water system
 - Construct additional water storage for fire protection and security of supply.

System #1 – Ameliasburgh, Evaluation Results

Evaluation Criteria	Alternative 1: Do Nothing Standard routine maintenance with no major upgrades	Rating	Alternative 2: Expand/Upgrade/Retrofit existing water system Construct additional water storage for fire protection and security of supply.	Rating
Social	<ul style="list-style-type: none"> Minimal noise, odour, and traffic construction impacts to residents as minor capital upgrades within the existing facility are proposed No additional noise, odour, or traffic impacts to residents anticipated during operation. No impacts to archaeological or cultural heritage resources. 		<ul style="list-style-type: none"> Moderate noise, odour, and traffic construction impacts to residents for construction of water storage facility. No additional noise, odour, or traffic impacts to residents anticipated during operation. 	
Technical	<ul style="list-style-type: none"> Existing system has sufficient supply and treatment capacity to meet projected buildout demands. Existing system meets all treated water quality objectives. Operational/maintenance upgrades to the existing plant will be completed as part of the standard capital project implementation program. The lack of treated water storage creates some concerns with the security of the system; however, the system has not experienced any issues with security of supply. 		<ul style="list-style-type: none"> Provision of water storage will increase system security and fire protection, but is not required for compliance. Construction complexity of water storage is relatively small. Provision of a new building reduces challenges in maintaining existing plant in service during construction. Constructability challenges with connection to existing intake pipe can be mitigated through staging. New treatment system will continue to meet all treated water quality objectives. 	
Natural Environment	<ul style="list-style-type: none"> Minimal impacts to undisturbed/naturalized areas, carbon footprint, air emissions, source water quality/protection, or soil quality anticipated from this option. 		<ul style="list-style-type: none"> Moderate impacts to undisturbed/naturalized areas, carbon footprint and air emissions anticipated during construction of water storage facility. Minimal impacts to source water quality/protection or soil quality anticipated from this option. 	
Financial	<ul style="list-style-type: none"> Minor capital upgrades and operation and maintenance investment to maintain working order of facility to buildout. Total Capital Cost: \$0 Annual Operation & Maintenance Costs: \$269,000 20-Year Net Present Value: \$4.7 M 		<ul style="list-style-type: none"> Requires completion of Schedule B Class EA study Highest capital, operational, and Net Present Value costs, compared to other short-listed option. Total Capital Cost: \$1.4 M Annual Operation & Maintenance Costs: \$339,000 20-Year Net Present Value: \$7.0 M 	
Overall	Preliminary Preferred Alternative		Alternative Not Recommended	X

System #2 – Consecon/Carrying Place Water Distribution System

Key Infrastructure:

- Water intake sourcing raw water from Trent River. Intermunicipal agreement with City of Quinte West – Maximum Daily Treated Water Allocation: 1,262 m³/d
- Carrying Place Booster Pumping Station
- Consecon Elevated Tank
- Distribution watermains – Fire protection by watermain



- Current system has sufficient capacity to meet current and future water demands
- Current operational practices are simple
- Bay of Quinte is a source water protected feature.



CONSTRAINT

- Remote location of serviced area limits potential interconnection to other areas.
- Dependency from other municipality for price and daily volume of treated water (agreement expiry 2027).
- Intake is relatively vulnerable
- Disinfection by-products have been historically within the regulatory limits but nearing higher end of the acceptable range. Current enhanced flushing program reduces potential risks from water quality deterioration.

Shortlisted Alternative Servicing Strategies:

1. Do Nothing
 - No other scenarios were shortlisted for Consecon/Carrying Place.
 - There was no need or justification for any other servicing alternatives. Do Nothing was deemed the preferred alternative.

System #2 – Consecon/Carrying Place, Screening Results

	Alternative Servicing Strategy	Pre-Screening Assessment	Shortlisted?
1	<p>Do Nothing Standard routine maintenance with no major upgrades</p>	<ul style="list-style-type: none"> Existing intermunicipal agreement with Quinte West has sufficient allocated capacity to meet projected buildout demands No complexity with implementation Continuous reliance on other municipality for price and daily volume of water Planned operational/maintenance activities to be carried out as part of the municipal capital project implementation program No capital investment beyond planned maintenance activities 	Yes
2	<p>Expand/Upgrade/Retrofit existing water system System upgrade/retrofit to improve operations and management activities without increasing system rated capacity</p>	<ul style="list-style-type: none"> No need or justification to warrant an expansion/upgrade or retrofit of the existing system to meet current or projected future demands 	No
3	<p>Provide a new water system – use individual wells Decommission existing system and use individual private groundwater wells</p>	<ul style="list-style-type: none"> Contrary to the municipalities Official Plan where municipal water services are preferred for new growth in Consecon/Carrying Place Challenges in transfer/acceptance of responsibility to private property owners Use of existing infrastructure, currently in good condition, is minimized The large number of individual private wells required render option ineffective for technical complexity and water quantity Dependant on Ministry of Environment, Conservation and Parks (MECP) approval. Need to complete extensive hydrogeological study to confirm viability and long-term sustainability of private wells 	No
4a	<p>Connect to Ameliasburgh Wellington Drinking Water System 10 km interconnection transmission main</p>	<ul style="list-style-type: none"> A major system expansion/retrofit of the Ameliasburgh system will be necessary to meet the combined future demands Some concerns with water age, water quality deterioration in long transmission pipe Significant capital cost (approx. \$14.3 Million, excluding pumping and storage) relative to other available options 	No
4b	<p>Connect to Wellington Drinking Water System 17 km interconnection transmission main</p>	<ul style="list-style-type: none"> Opportunity to provide servicing through the new Wellington water treatment plant and eliminating reliance on another municipality Concerns with water age, water quality deterioration in long transmission pipe. Water storage can be provided to address concerns with security of supply caused by a possible break in the long transmission main Significant capital cost relative to other available options (approx. \$13.8 Million, excluding pumping and storage) 	No

System #3 – Peats Point Drinking Water System

Key Infrastructure:

- Groundwater production GUDI well (Groundwater Under the Direct Influence of Surface Water), supply capacity: 80 m³/d
- Water treatment plant with rated capacity: 80 m³/d
- Distribution watermains – Fire protection by tanker truck
- Total of 21 residents connected to system



- Current system has sufficient capacity to meet current and future water demands
- Existing treatment system is effective
- Opportunity to assess other servicing alternatives for current small customer base
- Proximity to Rossmore distribution system for a potential interconnection - Possibility to connect private residences along Massassauga Road with interconnecting pipe



CONSTRAINT

- Current operational practices are complex (relative to system size), and treatment costs are significant considering small customer base
- Existing system has annual water use restrictions
- No existing water storage for fire flows or pump control
- A potential interconnection to Rossmore creates dependency on external municipality

Shortlisted Alternative Servicing Strategies:

1. Do Nothing
2. Provide a New water system
 - Construct individual wells for residents to own and operate.
3. Obtain water from another municipal source
 - Construct an interconnection to Rossmore

System #3 – Peats Point Drinking Water System, Evaluation Results

Evaluation Criteria	Alternative 1: Do Nothing Standard routine maintenance with no major upgrades	Rating	Alternative 2: Provide a new water system Construct individual wells for residents	Rating	Alternative 3: Obtain water from another municipal source Connect to Rossmore Water System	Rating
Social	<ul style="list-style-type: none"> No impacts associated with truck traffic, noise, or odours. No steps taken to reduce high water costs 		<ul style="list-style-type: none"> Handover of water system to individual homes will require consultation with homeowners through the decentralization process. 		<ul style="list-style-type: none"> Moderate impact associated with increased truck traffic and noise during construction of watermain. Additional water connections along proposed route may need to be mandatory to justify high cost. This may receive objection from private owners. 	
Technical	<ul style="list-style-type: none"> Existing treatment process is not complex and would be retained. No growth is anticipated in the serviced area, and existing DWS has sufficient capacity to meet current and future demands. Operations staff are required to visit site regularly to perform checks & maintenance. The distribution system is known to be in need of replacement with upgraded pipe materials 		<ul style="list-style-type: none"> Individual wells may be difficult to transition to from a regulatory perspective and will require additional studies O&M responsibility transitioned to private owners. Raw water source needs testing to confirm suitability of and treatment requirements for groundwater. 		<ul style="list-style-type: none"> Source water comes from City of Belleville via Rossmore, making Peats Point reliant on an external municipality for water. O&M requirements would be lowered relative to operating a treatment plant. There may be need for an official plan amendment to source water from City of Belleville. City of Belleville may refuse to increase water servicing area. 	
Natural Environment	<ul style="list-style-type: none"> No increased impact on natural environment as the existing system does not have any notable impact. Onsite diesel generator requires monthly tests producing GHG emissions 		<ul style="list-style-type: none"> Individual wells may result in increased emissions from increased power consumption from individual pumps. 		<ul style="list-style-type: none"> GHG emissions from construction will be significant relative to serviced population. 	
Financial	<ul style="list-style-type: none"> Minor capital upgrades and operation and maintenance investment to maintain working order of facility to buildout. <ul style="list-style-type: none"> Total Capital Cost: \$0 Annual Operation & Maintenance Costs: \$100,000 20-Year Net Present Value: \$1.6 M 		<ul style="list-style-type: none"> Installation of individual wells involves significant capital costs but no subsequent O&M costs. The anticipated payback period of for the installation of individual wells is 19 years. <ul style="list-style-type: none"> Total Capital Cost: \$1.2 M Annual Operation & Maintenance Costs: \$0 20-Year Net Present Value: \$1.2 M 		<ul style="list-style-type: none"> The watermain from Rossmore also requires the construction of associated capital works The current water rate from the City of Belleville may increase in the future changing the economic model <ul style="list-style-type: none"> Total Capital Cost: \$3.2 M Annual Operation & Maintenance Costs: \$(34,000) 20-Year Net Present Value: \$2.7 M 	
Overall	Alternative Not Recommended	X	Preliminary Preferred Alternative		Alternative Not Recommended	X

System #3 – Peats Point Drinking Water System Next Steps



The existing Peats Point system has operational and potential risks that could impact the supply of treated water:

- Treatment system is aging and in need of life-cycle upgrades
- Distribution system is aging and will need replacement



The preliminary preferred alternative is intended to reduce risk within the small network while providing a long-term financially sustainable strategy for providing water in Peats Point. Additional planning requirements for decentralization to be confirmed with the Ministry of Environment, Conservation and Parks (MECP). Proposed next steps are as follows:

- Confirm water quality and quantity in the area through a Hydrogeological Study, review results with MECP and engage with residents
 - *Risk that capital costs required to complete the necessary hydrogeological and supporting studies do not guarantee suitable water quality or guarantee MECP approval to decentralize the facility*
- Install new individual wells and remove municipal system (pending approval of first step)

System #4 – Rossmore/Fenwood Gardens Water Distribution System

Key Infrastructure:

- Water intake sourcing raw water from Bay of Quinte. Intermunicipal agreement with City of Belleville – Maximum Daily Treated Water Allocation: 2,250 m³/d
- Distribution watermains – Fire protection by watermain



- Current system has sufficient capacity to meet current and future water demands
- Current operational practices are simple
- Bay of Quinte is a source water protected feature.



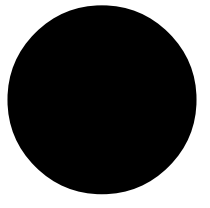
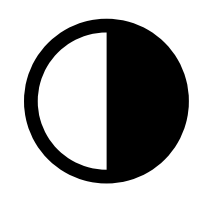
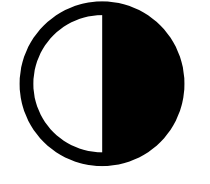
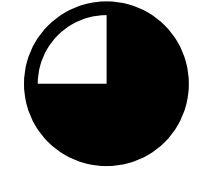
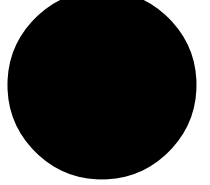
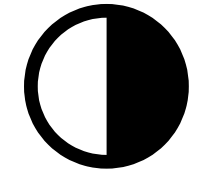
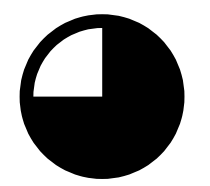
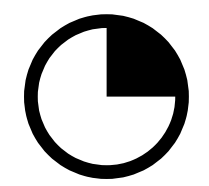

CONSTRAINT

- Remote location of serviced area limits potential interconnection to other areas.
- Dependency from other municipality for price and daily volume of treated water (agreement expiry 2032)
- Intake vulnerability is relatively moderate due to its distance from shore and depth. The Belleville intake has some historical concerns with water quality (e.g., total phosphorus, taste, and odour) – also reflected in the intake vulnerability.

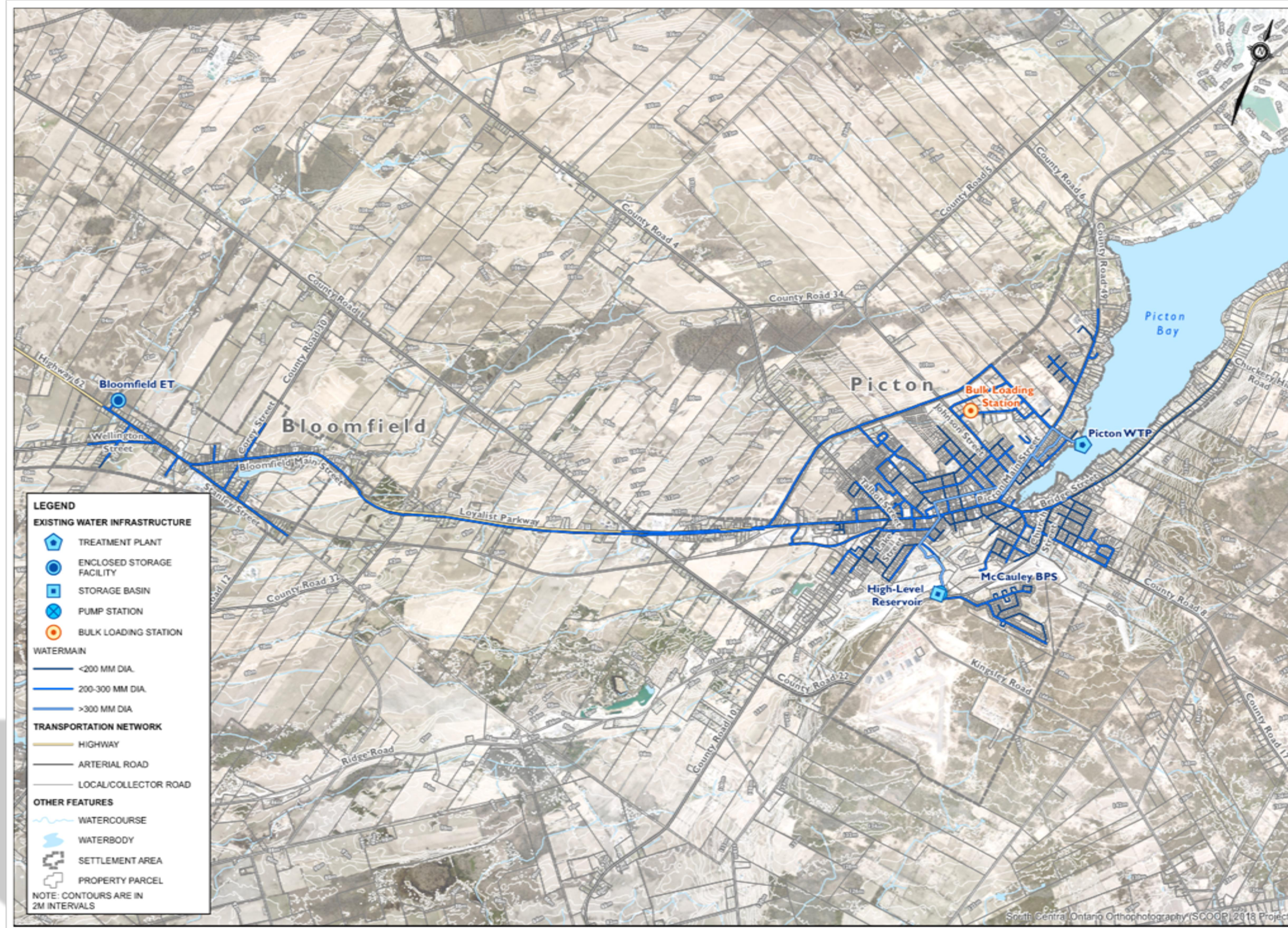
Shortlisted Alternative Servicing Strategies:

1. Do Nothing
2. Expand/Upgrade/Retrofit existing water system
 - Construct additional water storage for security of supply.
 - Additional fire protection is not required at this time.

System #4 – Rossmore/Fenwood Gardens, Evaluation Results

Evaluation Criteria	Alternative 1: Do Nothing Standard routine maintenance with no major upgrades	Rating	Alternative 2: Expand/Upgrade/Retrofit existing water system Construct additional water storage for security of supply	Rating
Social	<ul style="list-style-type: none"> No noise, odour, or traffic construction impacts to residents anticipated as no capital upgrades are proposed. No additional noise, odour, or traffic impacts to residents anticipated during operation. No impacts to archaeological or cultural heritage resources. 		<ul style="list-style-type: none"> Moderate noise, odour, and traffic construction impacts to residents for construction of new storage facility in Rossmore and associated upgrades to pumping and distribution systems. Further investigation required to determine potential for archaeological and cultural heritage resources within proposed siting for new water storage facility. 	
Technical	<ul style="list-style-type: none"> Existing system meets all treated water quality objectives. Concerns with security and supply with single transmission line beneath Bay of Quinte and lack of water storage facilities in Rossmore. However, storage for equalization, fire protection and equalization is available within the Belleville water allocation. Option involves standard routine maintenance to existing valve chamber and distribution system. 		<ul style="list-style-type: none"> Opportunity to provide water storage to increase system security and fire protection but not required for compliance. Option involves additional maintenance for water storage facility in Rossmore and pumping/distribution systems. 	
Natural Environment	<ul style="list-style-type: none"> No additional impacts to undisturbed/naturalized areas, carbon footprint, air emissions, source water quality/protection, or soil quality anticipated from this option. 		<ul style="list-style-type: none"> Moderate impacts to undisturbed/naturalized areas, carbon footprint and air emissions anticipated during construction of new storage facility in Rossmore and associated upgrades to pumping and distribution systems. Minimal impacts to source water quality/protection or soil quality anticipated from this option. 	
Financial	<ul style="list-style-type: none"> No major capital investment beyond planned maintenance activities. Total Capital Cost: \$0 Operation & Maintenance Costs: \$626,000 20-Year Net Present Value: \$12.4 M 		<ul style="list-style-type: none"> Highest capital, operational, and NPV costs, compared to other short-listed option. Total Capital Cost: \$2.9 M Operation & Maintenance Costs: \$673,000 20-Year Net Present Value: \$16.1 M 	
Overall	Preliminary Preferred Alternative		Alternative Not Recommended	X

System #5 – Aerial Map of Picton/Bloomfield Drinking Water System




*Note: map includes private drinking water systems that are connected to the municipal drinking water system.

System #5 – Picton/Bloomfield Drinking Water System


Key Infrastructure:

- Water intakes (2) sourcing raw water from Lake Ontario- Picton Bay,
- Water treatment plant with rated capacity: 10,400 m³/d
- 63 km of distribution watermains, 10 km to Bloomfield, fire protection by Watermain
- Water Storage: Macaulay Reservoir and Bloomfield Elevated Tank





- Explore alternate water sources for Picton/Bloomfield and reduce/eliminate major concerns with source water protection
- Maximize synergies with ongoing planning studies in the County – Possible connection to the New WTP in Wellington with high-quality raw water from Lake Ontario



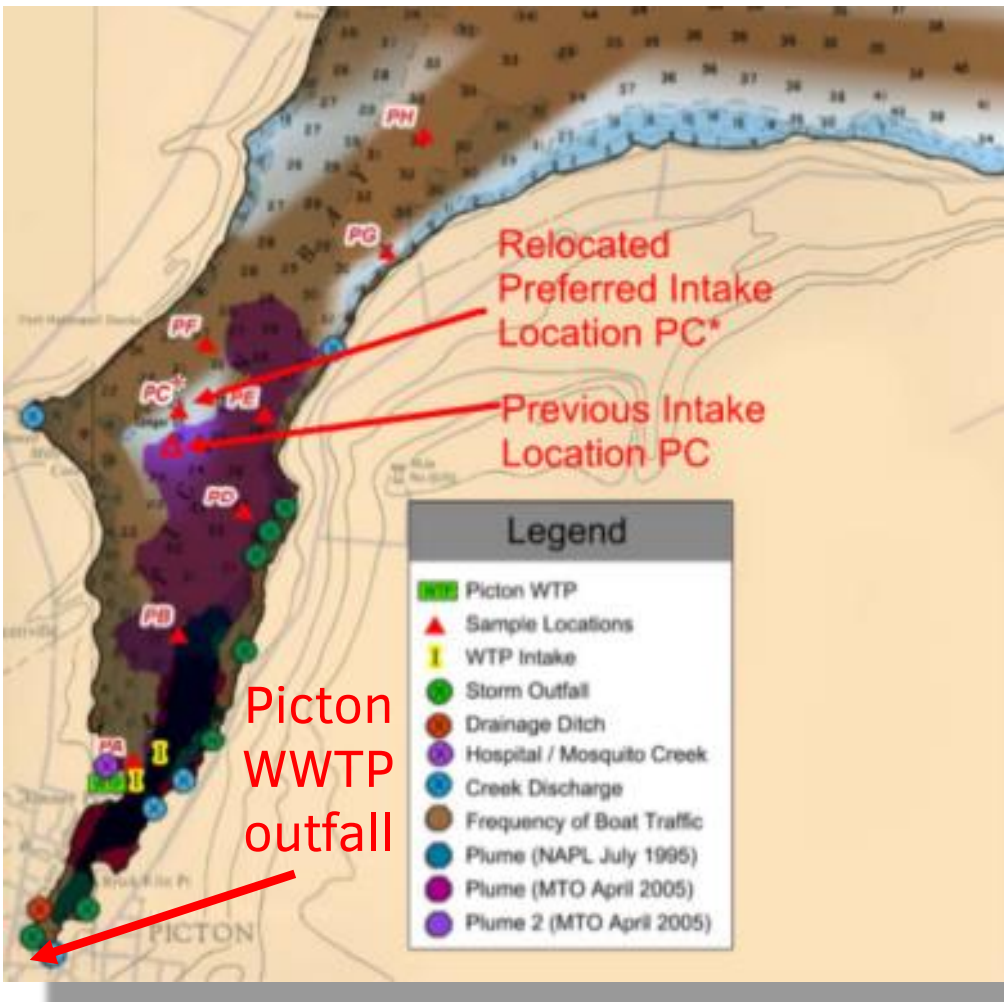

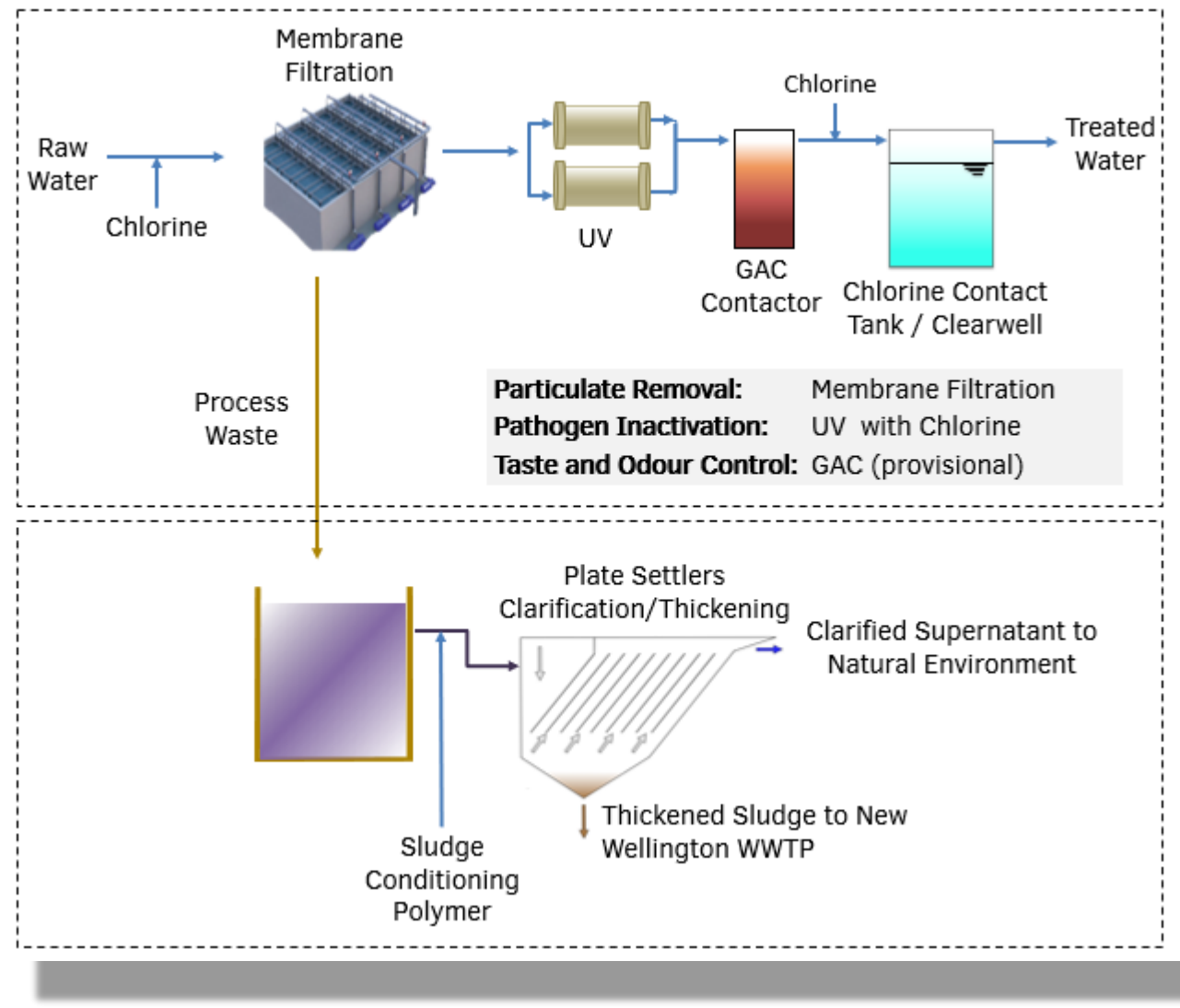
CONSTRAINT

- Stress test identified a capacity of 6,000 m³/d for the Picton WTP to achieve key performance indicators, however an effective sustainable plant capacity of 5,200 m³/d based on operator experience.
- Current system cannot support immediate and long-term needs of service area
- Complete Picton WTP replacement needed by 2032
- Current operational practices are complex and costly due to condition of aging infrastructure
- Historical major concerns with vulnerability and potential for contamination of Picton Bay & source water
- Limited footprint available onsite for a plant expansion

- ### Shortlisted Alternative Servicing Strategies:

 1. Provide a New water system
 - Construct a new Picton WTP
 2. Expand/Upgrade/Retrofit existing water system
 - Retrofit existing Picton WTP and supplement capacity with connection to Wellington WTP
 3. Obtain water from another municipal source
 - Connect to Wellington

System #5 – Picton/Bloomfield, Evaluation Results

Evaluation Criteria	Alternative 1: Provide a new water system in Picton	Rating	Alternative 2: Retrofit Picton WTP and Supplement Capacity Deficit	Rating	Alternative 3: Obtain all Water from new Wellington Regional WTP	Rating
Social	<ul style="list-style-type: none"> New water plant, watermains and low lift pumping station in a new area – Industrial Park, expected to have a moderate noise impact on residents. A new water intake in Picton Bay will have a temporary moderate impact on existing recreational uses in the bay. 		<ul style="list-style-type: none"> Construction along Millenium Trail and multiple roads for new interconnection transmission mains will impact local road users and adjacent residents. Major retrofit of the Picton WTP will result in short-term construction related impacts on nearby residents. 		<ul style="list-style-type: none"> Construction along Millenium Trail for new interconnection transmission main will impact local road users and adjacent residents. The transmission main will primarily follow Millenium trail, avoiding majority of local roads, thus resulting in less impacts to residents. 	
Technical	<ul style="list-style-type: none"> Existing source water quality and water supply concerns will remain with Picton Bay as the water source. Additional mitigation strategies will need to be implemented through more complex water treatment processes. Potential increase in vulnerability of Picton Bay as a municipal drinking water source from potential migration of Volatile Organic Compounds (VOCs) and a possible future outfall discharge location from a wastewater treatment plant. Constructability challenges associated with a new intake pipe in Picton Bay due to existing in-water infrastructure and current recreational and industrial activities.  <p>2014 Picton Intake EA Study Demonstrates challenges to locate a new intake</p>		<ul style="list-style-type: none"> Existing source water quality and water supply concerns will remain with Picton Bay as the water source. Mitigation strategies will need to be implemented during the retrofit through more complex water treatment processes. Significant constructability complexity due to the plant's age, unconventional design, and current state of the assets. Construction along Millenium Trail and multiple roads for new interconnection transmission mains will impact local road users and adjacent residents. Two separate but interconnected systems results in additional operational and maintenance needs.  <p>Picton WTP Flooded Basement. Picton WTP is nearly 100 years old and needs replacement</p>		<ul style="list-style-type: none"> Existing source water quality and water supply concerns will be eliminated since Lake Ontario will be the water source for the Regional WTP. Significant less new infrastructure to be built resulting in overall less impacts. Single and centralized WTP significantly reduces Operation & Maintenance requirements and overall costs.  <p>Preferred Wellington WTP provides a significantly better raw water source and best in class treatment</p> <p><i>Continued on following slide...</i></p>	

System #5 – Picton/Bloomfield, Evaluation Results

Evaluation Criteria	Alternative 1: Provide a new water system in Picton	Rating	Alternative 2: Retrofit Picton WTP and Supplement Capacity Deficit	Rating	Alternative 3: Obtain all Water from new Wellington Regional WTP	Rating
Natural Environment	<ul style="list-style-type: none"> Limited impact for new Picton water plant due to condition of proposed lot in Industrial Park (limited existing vegetation). New intake anticipated to have a minimal impact on natural environment in Picton Bay. Watermains to follow existing roadways and will have a limited impact on the natural environment. 		<ul style="list-style-type: none"> Limited impact through re-use of existing site. Exact impact will depend on asset replacement and upgrade requirements. Moderate impact along transmission main route due to excavation. Moderate impact through increased size of Regional water plant. 		<ul style="list-style-type: none"> Moderate impact along transmission main route due to excavation and potential for tree removal, though remedial efforts can mitigate this. Moderate impact for new Booster Pumping Station in Picton 	
Financial	<ul style="list-style-type: none"> Requires constructing new Picton water plant in Industrial Park, low lift pump station, and raw water intakes. Requires new Wellington water plant and intake to still be constructed Higher operation & maintenance costs for the County from operating an independent Picton water plant. Total Capital Cost: \$95 M Operation & Maintenance Costs: \$1.25 M 20-Year Net Present Value: \$120 M Council approved Capital Budget of \$23.6M in 2022 for new Wellington water plant 		<ul style="list-style-type: none"> Significant capital and operation & maintenance costs associated with constructing and operating both a new Regional water plant and retrofitting existing Picton water plant. Estimated capital cost of a new Regional water plant in Wellington (incl. new intake and interconnection transmission main) of \$105M still required Significant additional cost associated with retrofitting the existing Picton water plant for limited additional capacity or redundancy. This option was screened financially infeasible. 		<ul style="list-style-type: none"> Capital costs are shared with the costs of the new Regional water plant supplying Wellington, Picton and Bloomfield Lower overall operation & maintenance costs for the municipality from only operating one water plant for Wellington and Picton. Total Capital Cost: \$105 M Operation & Maintenance Costs: \$1.00 M 20-Year Net Present Value: \$125 M Council approved Capital Budget of \$23.6M in 2022 for new Wellington water plant 	
Overall	Alternative Not Recommended	X	Alternative Not Recommended	X	Preliminary Preferred Alternative	

Benefits of Regional Water Treatment Plant

✓ Eliminate Picton Bay Raw Water Intakes

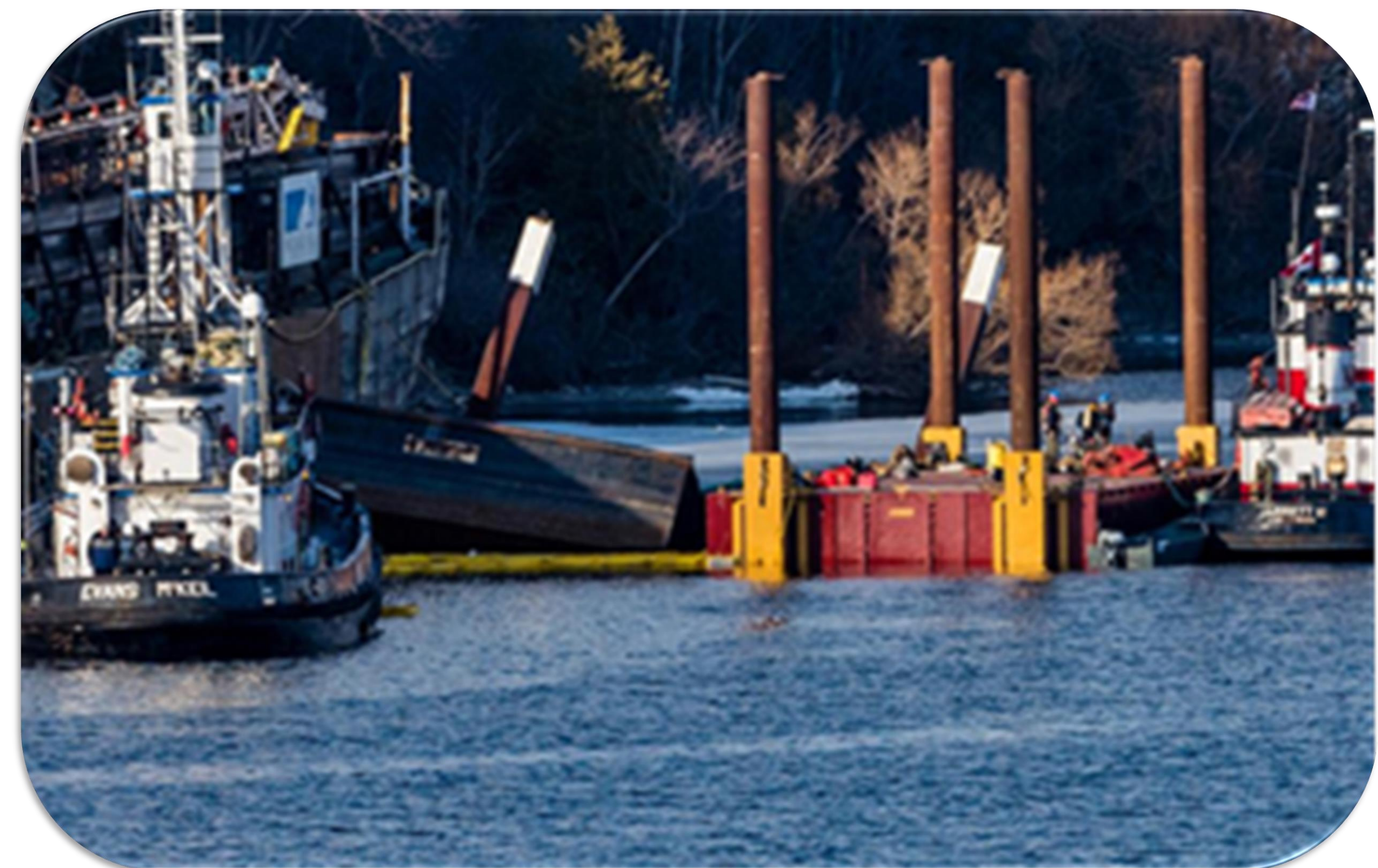
- Picton Intake Protection Zone (IPZ) is very vulnerable to pollution and contamination. Vulnerability scores as per Quinte Conservation, IPZ 1 = 10, IPZ 2 = 9, IPZ 3a = 8, IPZ 3b = 6 (10 being worst possible score).
- Threats identified include: municipal sewage system discharge, municipal stormwater sewer discharge, pesticides, handling and storage of fuel, road salt, former landfill, agriculture (manure), septic systems, nearby industrial sites, snow storage and marina. Also, Blue Green Algae/Microcystins, and due to the higher organics in the bay increased levels of trihalomethanes (THM, disinfection byproducts).
- Extending a new intake further/deeper into Picton Bay is likely to result in low to moderate improvements to the IPZ vulnerability.
- Extreme fluctuations in turbidity (likely due to shallow waters in Picton Bay) causes clogging of filters and reduced filter run time. Resulting in wasting of treated water, downtime for filters, reduced capacity and more frequent filter media replacement.

✓ Lake Ontario (Wellington) Raw Water Intake

- Vulnerability scores as per Quinte Conservation, IPZ 1 = 5, IPZ 2 = 3.5
- No IPZ threats identified.

✓ Reduced Operation and Maintenance (O&M) Costs

- Less O&M costs to maintain/operate one water plant
- Approximate savings of \$250,000 per year



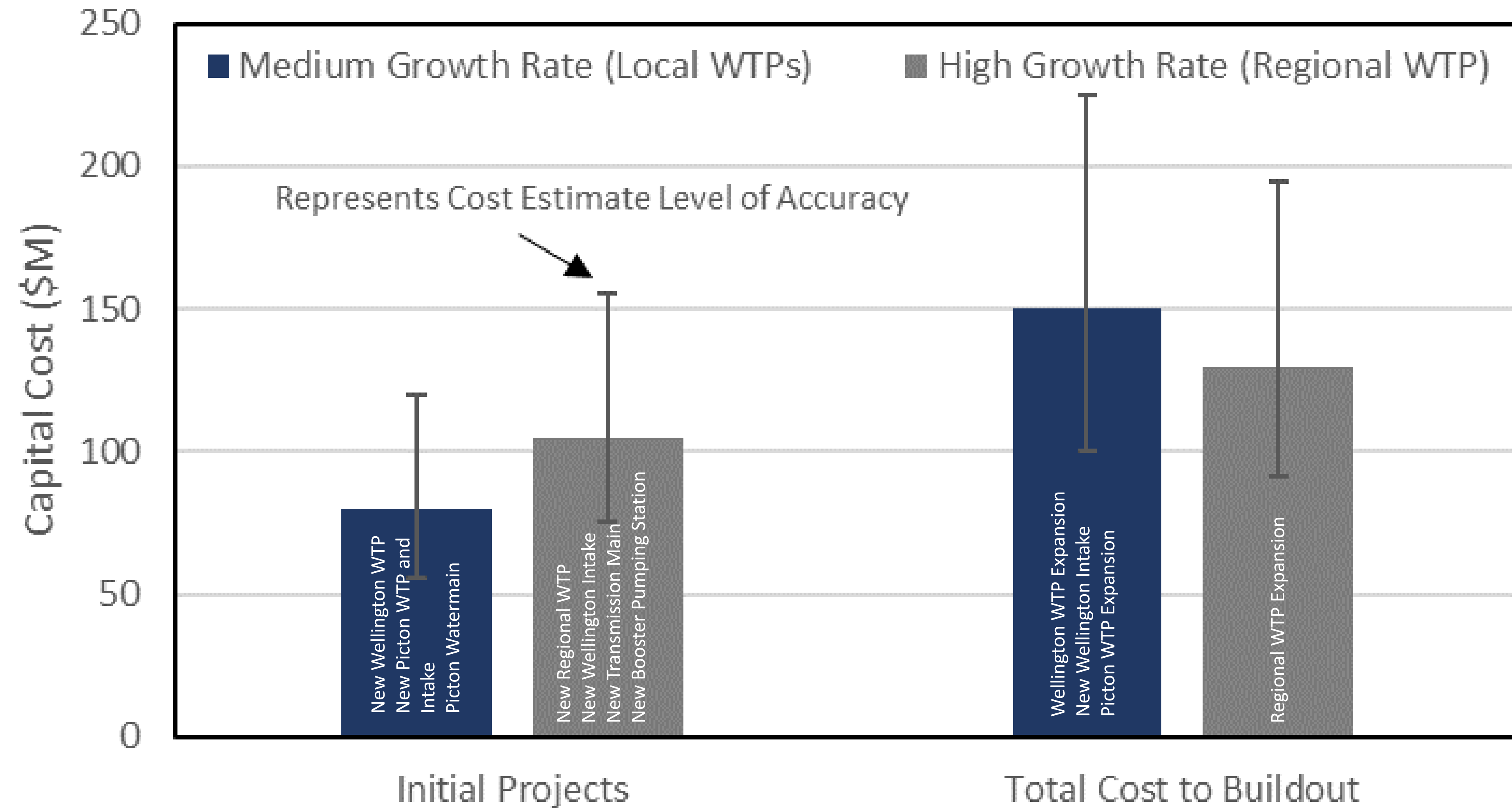
Partially sunken barge at Picton Terminals dock

Impact of Growth Rate

Different growth rate scenarios were reviewed to confirm whether a Regional Water Treatment Plant continues to be the best solution under various conditions. Scenarios and infrastructure needs are summarized below:

Growth Rate Scenario / Population Projections	Initial Infrastructure Projects (Phase 1)	Expansion to Buildout Infrastructure Projects (Phase 2)
Medium Growth Rate (2047) Wellington: 5,181 Picton/Bloomfield: 9,984	Wellington: <ul style="list-style-type: none"> New local Wellington WTP Picton: <ul style="list-style-type: none"> New local Picton WTP New Intake Pipe Picton Watermain 	Wellington: <ul style="list-style-type: none"> Expansion of Wellington WTP New Intake Pipe Picton: <ul style="list-style-type: none"> Expansion of Picton WTP
High Growth Rate (2047) Wellington: 6,426 Picton/Bloomfield: 21,167 Combined: 27,593	<ul style="list-style-type: none"> New Regional WTP New Intake Pipe New Transmission Main Wellington to Picton New Booster Pumping Station in Picton 	<ul style="list-style-type: none"> Expansion of Regional WTP

Risk Analysis Results



** Opinion of probable cost developed for comparative purposes. Level of accuracy represented in cost +50%/-30%.*

A Regional WTP provides superior capital cost savings, in the long term, contributing to the County's vision for financial sustainability. A major reduction in O&M costs from a single WTP adds to the financial gains.

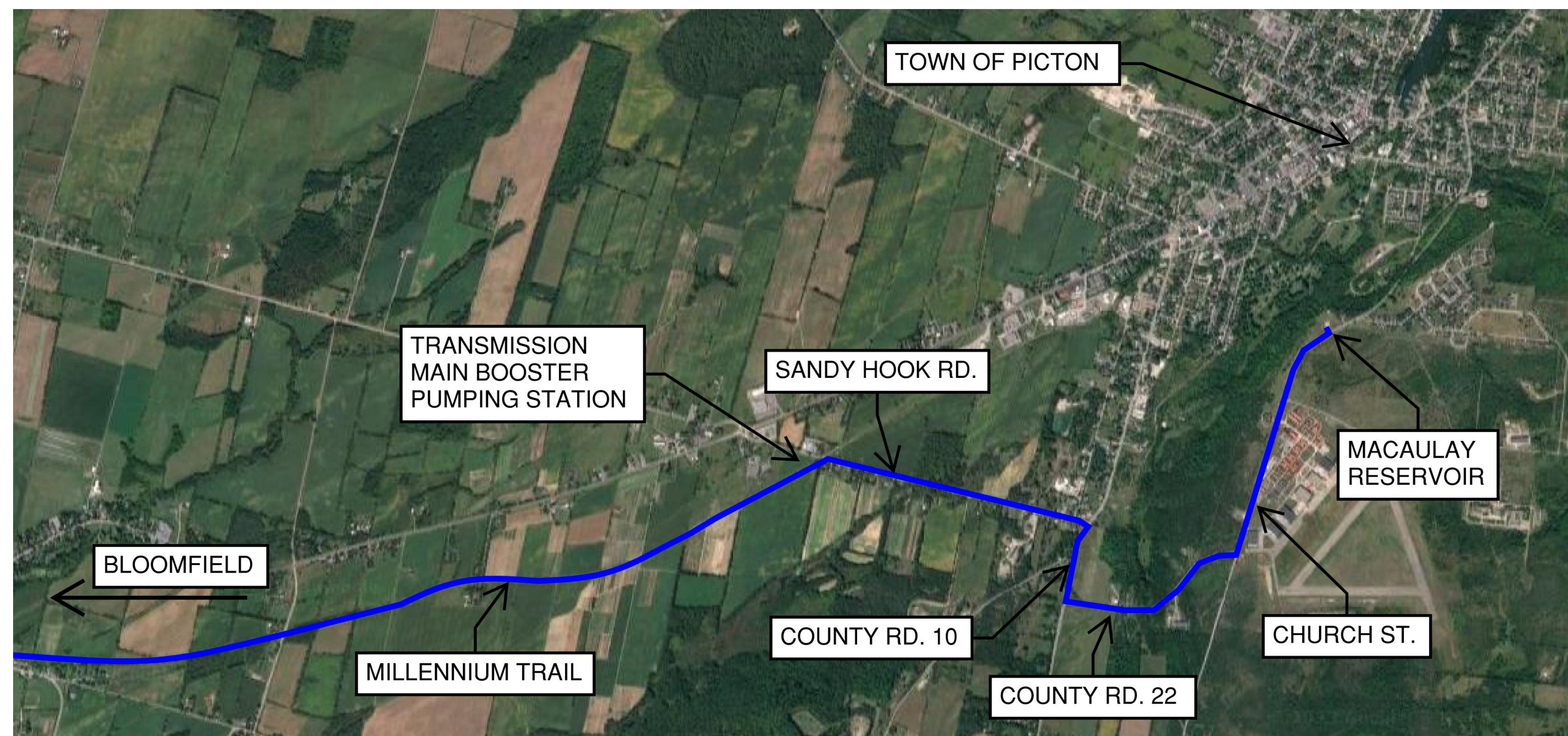
System #5 - Wellington to Picton/Bloomfield Transmission Main Route



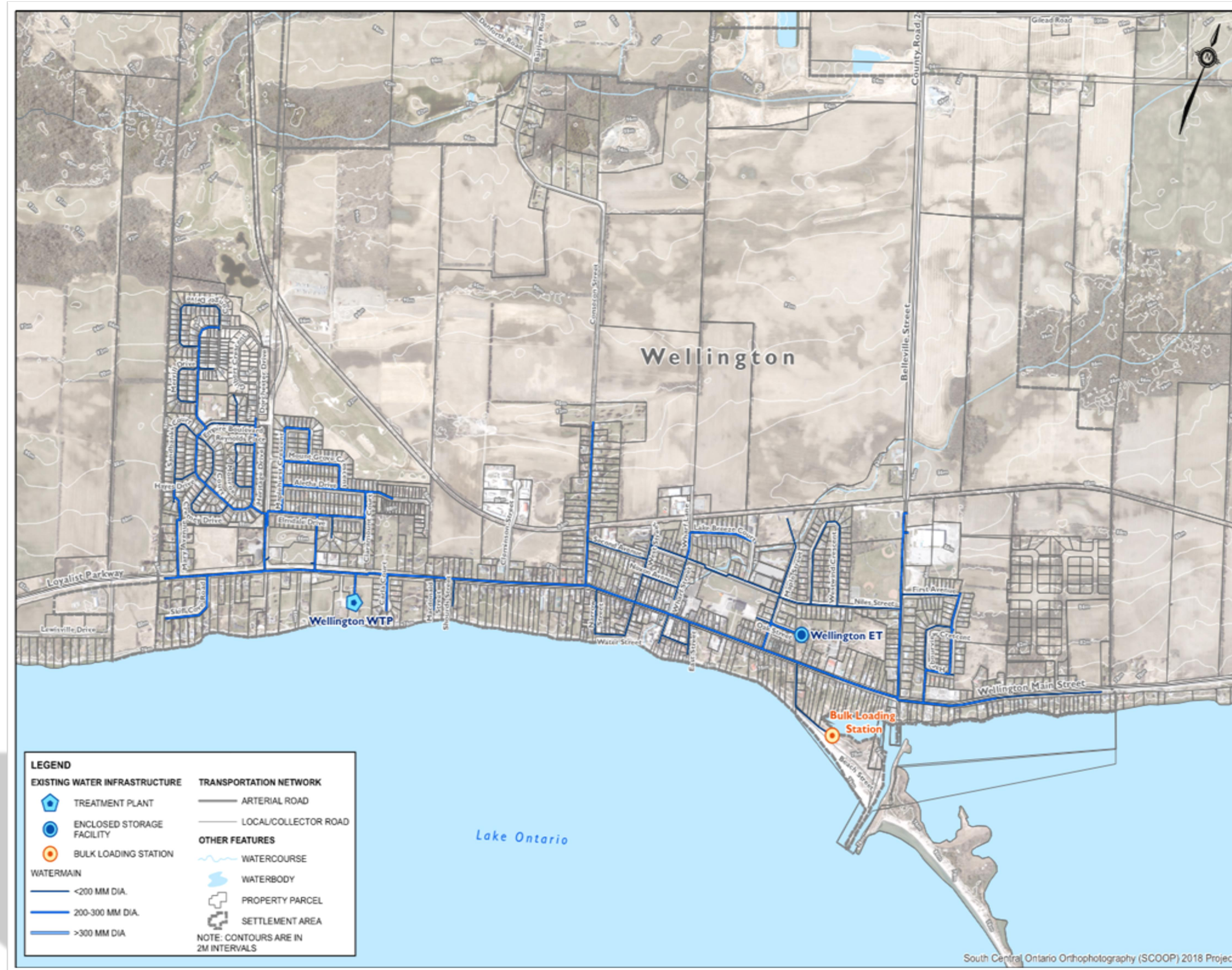
The transmission main from Wellington to Bloomfield and Picton is routed primarily via Millennium Trail. Alignments along Highway/County Rd 33 to be evaluated during design

Connections are provided to both the Bloomfield Elevated Tank and Macaulay Reservoir.

A booster pumping station will be constructed in Picton with location confirmed in the Picton MSP. Location shown is at the intersection of Millennium Trail and Sandy Hook Rd. The booster pumping station is required to provide adequate pressure for the water to Macaulay Reservoir.



System #6 – Aerial Map of Wellington Drinking Water System



*Note: map includes private drinking water systems that are connected to the municipal drinking water system.

System #6 – Wellington Master Servicing Plan (2021)

Assessment of water servicing strategies for Wellington were evaluated in the **Wellington Master Servicing Plan (MSP)** which was completed in 2021. This Regional Master Plan adopts the final recommendations from the 2021 MSP for the Wellington system. As a result of the 2021 MSP, Council approved a Capital Budget of \$23.6M in 2022 for the replacement of the Wellington water treatment plant. The table below is a summary of the 2021 Wellington MSP findings.

	Alternative Servicing Strategy	Pre-Screening & Detailed Assessment	Shortlisted?	Preferred?
1	Do Nothing Standard routine maintenance with no major upgrades	<ul style="list-style-type: none"> Did not meet the requirements of the problem & opportunity statement 	No	No
2	Limit Growth	<ul style="list-style-type: none"> Did not meet the requirements of the problem & opportunity statement 	No	No
3	Water Conservation Measures	<ul style="list-style-type: none"> Did not meet the requirements of the problem & opportunity statement 	No	No
4	Expand/ Upgrade/Retrofit existing water system System upgrade/retrofit, with treatment modules that can be added to suit development milestones	<ul style="list-style-type: none"> Moderate capital costs (approx. \$33.5 Million) with life-cycle estimate \$42 M Higher O&M costs for re-use of existing facility Major challenges integrating and operating two different treatment processes Constructability challenges with operating plant 	Yes	No
5	Provide a new water system Build new WTP, at existing site, with more capacity and decommission existing WTP	<ul style="list-style-type: none"> Moderate capital costs (approx. \$37.1 Million) with life-cycle estimate \$43.3 M Lower O&M costs for new facility Greater flexibility in treatment process selection, less constructability and operational challenges Existing municipal site has sufficient available area to accommodate a new WTP and stay within the existing intake protection zone that provides a great source of water quality. Consideration to expand the new Wellington WTP to a Regional WTP. 	Yes	Yes
6	Obtain potable water from other water supply systems (i.e., Picton, Belleville, Trenton)	<ul style="list-style-type: none"> Significant Financial Costs 	No	No
7	New Groundwater sources and treatment facility(ies)	<ul style="list-style-type: none"> Significant Financial Costs Dependant on MECP approval. Need to complete extensive hydrogeological study to confirm viability and long-term sustainability of private wells. 	No	No

Preliminary Preferred Water Servicing Alternatives

Summary of preliminary preferred alternatives for each water system:

Water Servicing Area	Preliminary Preferred Servicing Alternatives
#1 – Ameliasburgh	Do nothing <ul style="list-style-type: none"> Life-cycle Upgrades in 5-10 years; Estimated Cost of \$1.5M
#2 - Consecon/Carrying Place	Do nothing <ul style="list-style-type: none"> Life-cycle replacements as needed.
#3 - Peats Point	Decentralize <ul style="list-style-type: none"> Background studies costs estimated \$400,000
#4 – Rossmore	Do nothing <ul style="list-style-type: none"> Life-cycle replacements as needed.
#5 - Picton/Bloomfield & #6 – Wellington	Obtain full servicing capacity from the new Regional Water Treatment Plant in Wellington through an interconnection to the Wellington Drinking Water System – Decommission existing Picton WTP. <ul style="list-style-type: none"> New Wellington Regional Water Treatment Plan: Implementation in 5-10 years; Estimated Capital Cost: \$40M (As a result of the 2021 Wellington MSP, Council has already approved a Capital Budget of \$23.6M in the 2022 Budget for the replacement of the Wellington Water Treatment Plant) New Wellington Raw Water Intake: Implementation in 5-10 years; Estimated Capital Cost: \$15M New Transmission Watermain connecting Wellington and Picton: Implementation in 5-10 years; Estimated Capital Cost: \$50M

Preliminary Preferred Water Servicing Alternatives

Summary of preliminary preferred alternatives for each water system:

Water Servicing Area	Preliminary Preferred Servicing Alternatives
#1 – Ameliasburgh	Do nothing <ul style="list-style-type: none"> Life-cycle upgrades in 5-10 years; Estimated cost of \$1.5M
#2 – Consecon/Carrying Place	Do nothing <ul style="list-style-type: none"> Life-cycle replacements as needed.
#3 – Peats Point	Decentralize <ul style="list-style-type: none"> Background studies costs estimated \$400,000
#4 – Rossmore	Do nothing <ul style="list-style-type: none"> Life-cycle replacements as needed.

Preliminary Preferred Water Servicing Alternatives

Summary of preliminary preferred alternatives for each water system:

Water Servicing Area	Preliminary Preferred Servicing Alternatives
<p>#5 - Picton/Bloomfield</p> <p>&</p> <p>#6 - Wellington</p>	<p>Obtain full servicing capacity from the new Regional Water Treatment Plant in Wellington through an interconnection to the Wellington Drinking Water System – Decommission existing Picton WTP.</p> <ul style="list-style-type: none"> • New Wellington Regional Water Treatment Plan: Implementation in 5-10 years; Estimated Capital Cost: \$40M (As a result of the 2021 Wellington MSP, Council has already approved a Capital Budget of \$23.6M in the 2022 Budget for the replacement of the Wellington Water Treatment Plant) • New Wellington Raw Water Intake: Implementation in 5-10 years; Estimated Capital Cost: \$15M • New Transmission Watermain connecting Wellington and Picton: Implementation in 5-10 years; Estimated Capital Cost: \$50M

Municipal Class EA Requirements

Summary of Municipal Class Environmental Assessment requirements for each project identified in this Master Plan.

No further Class EA Requirements

- Decentralize Water System (Peats Point)
- Pending discussions with MECP

Exempt

- New Transmission Watermain
(Picton/Bloomfield)

Schedule B

New Raw Water Intake (Picton/Bloomfield & Wellington)

- Included in ongoing New Wellington Water Treatment Plant Schedule C Class EA and scheduled for completion in Q2, 2024

New Booster Pumping Station (Picton)

- Included in ongoing Picton MSP and scheduled for completion in Q3, 2024

Schedule C

New Regional Water Treatment Plant
(Picton/Bloomfield & Wellington)

- New Wellington Water Treatment Plant Schedule C Class EA ongoing and scheduled for completion in Q2, 2024

Funding of Preliminary Preferred Alternatives

Project	Considerations for Funding
Peats Point Decentralization	<ul style="list-style-type: none"> • Consultation with MECP on Decentralization • Hydrogeological Study & Supporting Studies <ul style="list-style-type: none"> ○ Include in 2025 Capital Budget for consideration by Council <hr/> <ul style="list-style-type: none"> • Approval of Decentralization by MECP required • Installation of Private Wells based on MECP approval <ul style="list-style-type: none"> ○ Include in future Capital Budget for consideration by Council
Wellington, Picton & Bloomfield Regional Water Treatment Plant	<ul style="list-style-type: none"> • New Regional Water Treatment Plant and Raw Water Intake <ul style="list-style-type: none"> ○ Benefits Wellington, Picton and Bloomfield with funding by both Wellington Area and Picton Area Development Charges (DCs) or Connection Charges (CCs) ○ Wellington Area DC determined 18% of cost is benefit to existing users and 82% new growth ○ Council approved Capital Budget of \$23.6M in 2022 for design and construction of new Wellington Water Treatment Plant (WTP) permitting detailed design upon completion of Regional Master Plan <hr/> <ul style="list-style-type: none"> • New Transmission Watermain & Booster Pumping Station <ul style="list-style-type: none"> ○ Benefits Picton and Bloomfield only so funded by Picton Area DCs or CCs <hr/> <ul style="list-style-type: none"> • Next Steps in Determining Funding <ul style="list-style-type: none"> ○ Undertake Picton Area Study to determine allocation of costs to existing users versus new growth for Regional Water Treatment Plant, Raw Water Intake, Transmission Watermain and Booster Pumping Station ○ Include detailed design and construction costs in 2025 Capital Budget for consideration by Council for Raw Water Intake, Transmission Watermain and Booster Pumping Station ○ Utilize already approved Capital Budget for Wellington WTP to begin detailed design of Regional WTP

What are the Next Steps?

After this Public Consultation Centre, the project team will:

- Review and consider input received during this meeting.
- Confirm the preliminary recommendations presented tonight for PEC's water servicing alternatives
- Prepare a Master Plan Report summarizing the study findings
- Notice of Study Completion and Master Plan Report on the public record for comments during a 30-day comment period.



Frequently Asked Questions

Will these plans and all this work increase my water bill?

- Water rates are set every five years. The current rates are set until 2026, and already include projects such as the new water tower, trunk lines and water and wastewater treatment plants in Wellington. The money you already pay each month helps fund the long-term plan for infrastructure. The municipality is currently setting up a community working group that will help set the rates for beyond 2026. Already, staff are looking at possible savings to limit future financial impacts on existing rate payers.

What's the big rush? Can't we just wait and see if the growth comes before moving ahead with these plans?

- The municipalities water and wastewater infrastructure has served the community well over the decades. However, much of it is aging and will need to be replaced within the next 10 years, regardless of growth. If the County builds now, it can take advantage of the fact that approximately 75% of the total costs can be paid for by developers of the new homes. The municipality cannot impose development charges after the houses are built.

Next Steps & Comments

Link to project webpage:

<https://www.thecounty.ca/government/municipal-projects/special-capital-projects/water-servicing-supply-class-environmental-assessment/>



Questions or comments?

Should you have any questions about this presentation or the project, please fill out a comment sheet tonight or contact:



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**Please provide your comments and questions
by April 25, 2024**