

# Public Information Centre

## Cavan Monaghan Water and Wastewater Master Servicing Study

Township of Cavan Monaghan Municipal Office  
988 County Rd 10, Millbrook Ontario L0A 1G0

**Wednesday, June 21, 2023**  
**Open House from 4:00 to 6:00 p.m.**



# Welcome!

The Township of Cavan Monaghan welcomes you to this Public Information Centre (PIC) so that we can share study objectives, findings to date, alternative solutions and next steps.

Please review the material and provide us with any comments you may have. Your input is important to the Class Environmental Assessment process. Staff are available to answer your questions and receive your comments. Comment sheets are also available for you to fill out.

**Thank you for attending this Public Information Centre**

**Please sign in**



# What is the purpose of this Public Information Centre?

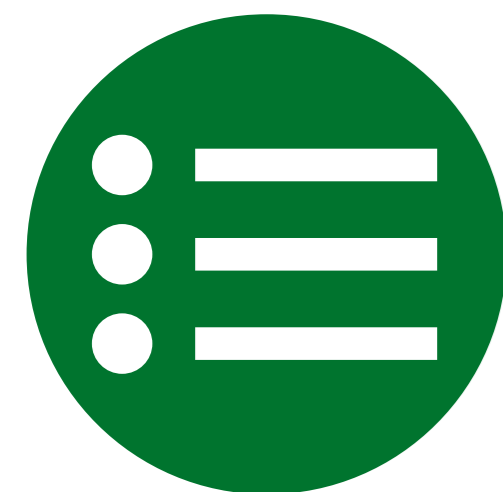


To present an overview of the Cavan Monaghan Water and Wastewater Master Servicing Study (MSS).



To provide an overview of the:

- MSS and Municipal Class Environmental Assessment (Class EA) Process.
- Existing and forecasted populations & demands in the Study Area.



To present and gather your feedback on:

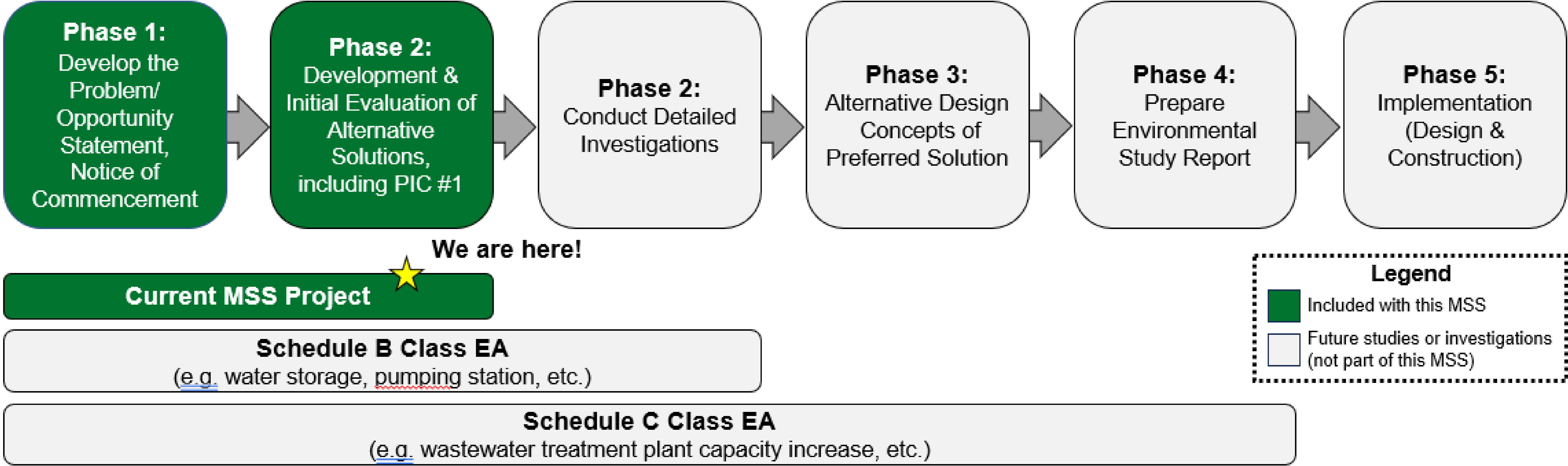
- Problem and Opportunity Statement
- List of alternatives
- Evaluation of alternatives
- Next steps in the process

# What is the purpose of this Master Servicing Study?

- The Township is undertaking a Master Servicing Study (MSS) under the Municipal Class Environmental Assessment (Class EA) framework, as approved under the Ontario Environmental Assessment Act.
- The MSS will follow Approach #1 (high level study) under the master planning framework of the Municipal Class EA process. Certain projects may require additional study in the future to comply with environmental assessment requirements.
- This study focuses on municipal services in the Millbrook Urban Area, in line with the Township's Growth Management Strategy (GMS).
- The objectives of the MSS are to:
  - Determine the water and wastewater infrastructure needs.
  - Develop immediate and long-term servicing strategies to meet those needs.

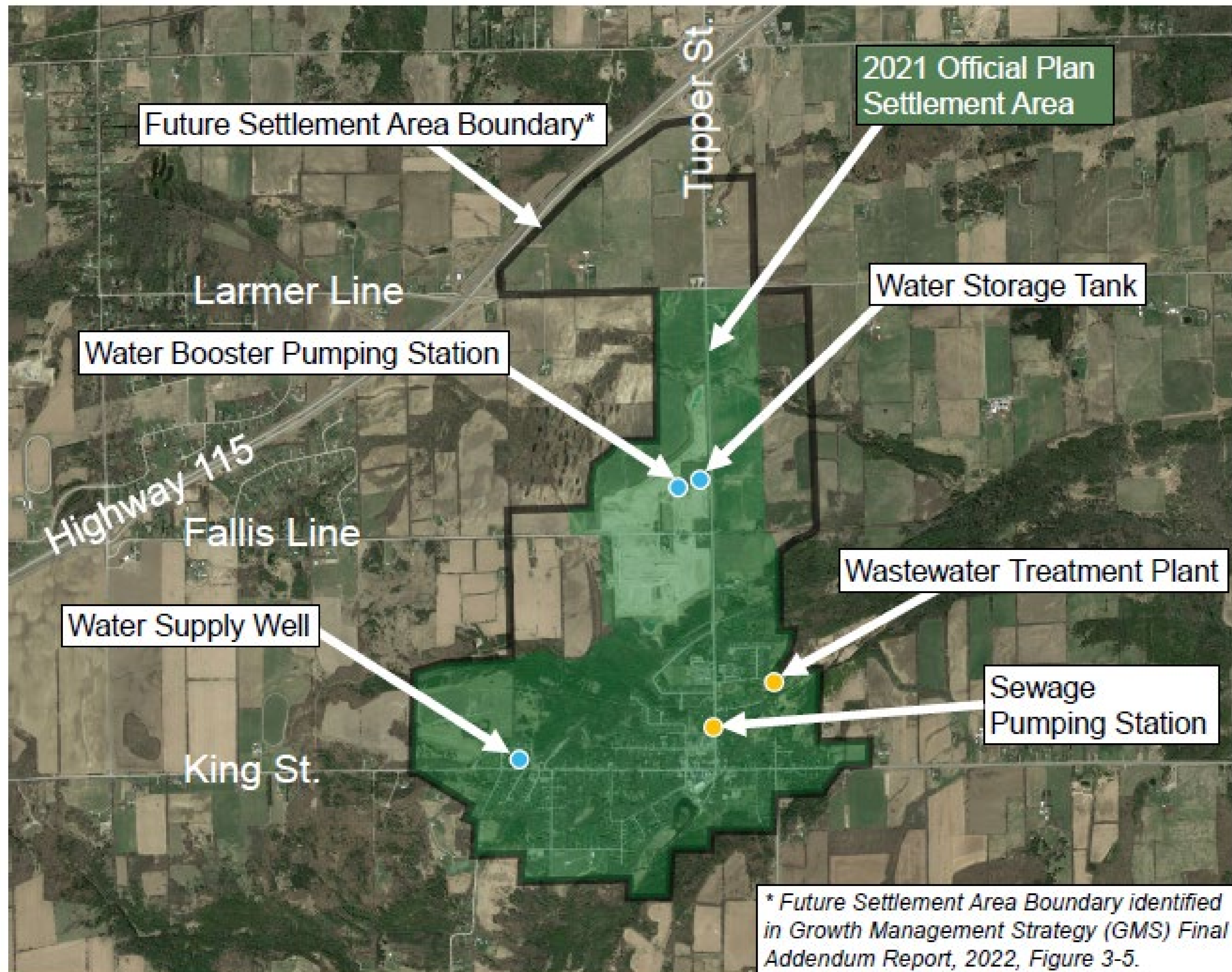
# Municipal Class EA Process

This Master Servicing Study (MSS) will complete **Phase 1** and a portion of **Phase 2** of the environmental assessment process. Any Schedule B or C projects resulting from this Master Servicing Study will require additional investigations or study to fulfill Class EA requirements. This includes completing any remaining Phase 2 requirements, such as detailed investigations, for Schedule B Projects and also completing Phases 3 and 4 for Schedule C Projects.



Upon completion of Phase 2 of the MSS, a report will be prepared to document the Municipal Class EA planning and decision-making process. It will be made available for a 30-day public review period and a Notice of Completion will be issued at that stage.

# Existing Infrastructure and Growth Projections



The Township of Cavan Monaghan completed a Growth Management Strategy (GMS) for the Millbrook Urban Area, identifying population and employment growth to 2051.

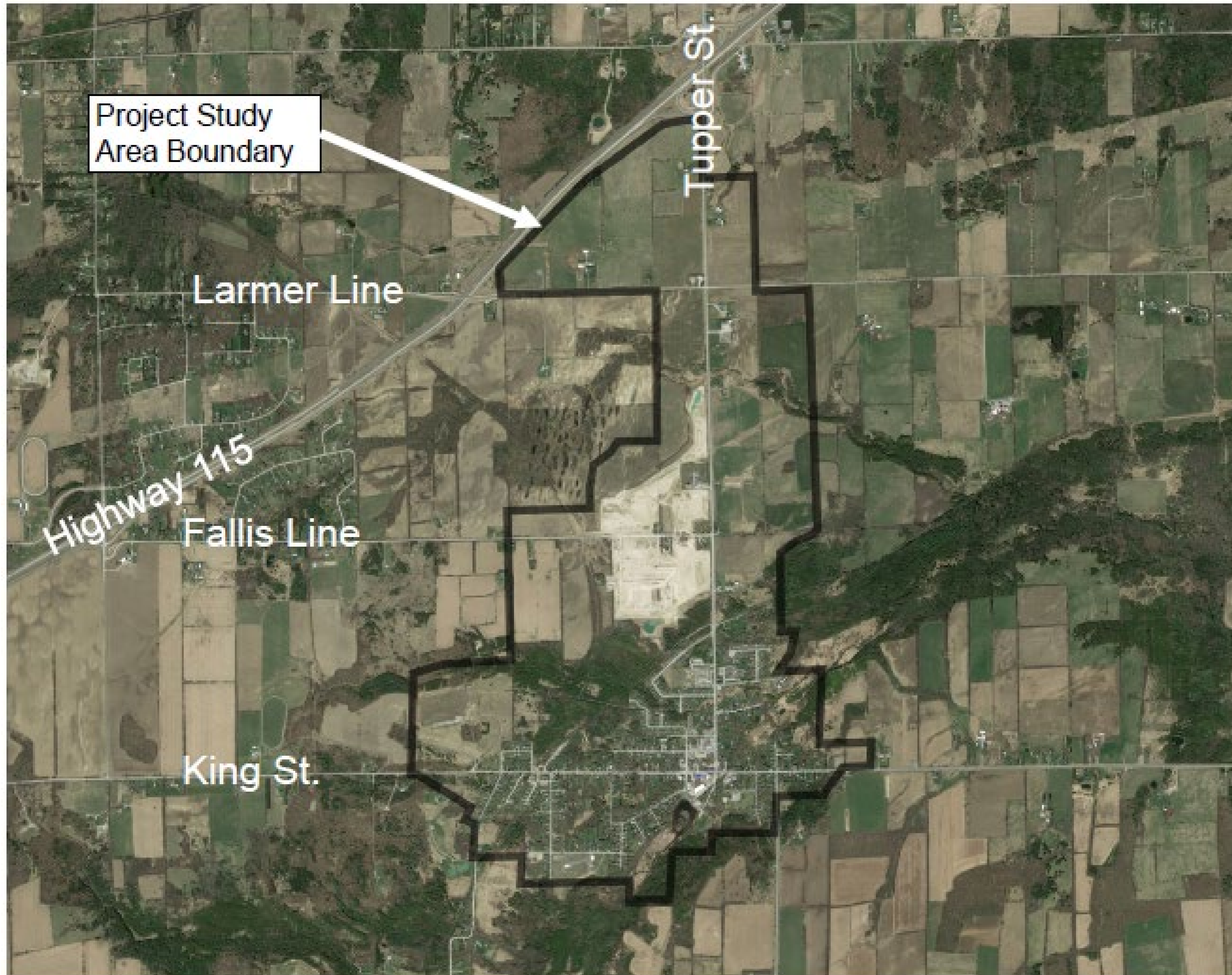
The GMS also identified the Future Settlement Area Boundary, which will be the Study Area Boundary for this MSS.

## Millbrook Total Long-Term Population and Employment Estimates

Year	Total Residential Population	Total Employees
2021	2,558	970
2051	10,455	3,983

Source: Growth Management Strategy (GMS) Final Addendum Report 2022

# Study Area & Problem and Opportunity Statement



The Township of Cavan Monaghan is preparing a Water and Wastewater Master Servicing Study to address future growth and improvements in the project study area.

The study will analyze existing infrastructure and determine how best to accommodate the future needs of the community. The Township is prioritizing solutions that comply with regulations and planning policies, while taking into consideration feedback from stakeholders.

Financial viability, technical feasibility and social and environmental responsibility will also be considered. The plan will be implemented to address immediate, intermediate and long-term goals.

# Approach to Development and Evaluation of Alternatives

Alternative solutions were developed for each of the system components listed below.



## **Water System:**

Water Supply

Water Storage



## **Wastewater System:**

Wastewater Treatment

For each system component, a long list of alternative solutions were first screened to establish a short list of reasonable and feasible alternatives.

The shortlisted alternatives were then evaluated in greater detail to identify the recommended solution.



# Long List Screening Criteria

The long list of alternatives identified for each system component was screened against pass or fail criteria to confirm feasibility before proceeding to a detailed evaluation.






An alternative must pass all three (3) criteria to proceed to detailed evaluation.

Screening Criteria	Example Considerations
<b>Does the Alternative Address the Problem and Opportunity Statement?</b>	<ul style="list-style-type: none"><li>• Does the alternative address the considerations listed in the Problem and Opportunity Statement?</li><li>• Does the alternative support planned growth to 2051?</li><li>• Does the alternative meet local, regional, and provincial planning policies?</li></ul>
<b>Is the Alternative Feasible and Reasonable?</b>	<ul style="list-style-type: none"><li>• Is the alternative technically feasible and reasonable?</li><li>• Can the alternative be constructed for a reasonable cost?</li><li>• Does the alternative provide a long-term solution?</li></ul>
<b>Can the alternative be implemented without significant impacts?</b>	<ul style="list-style-type: none"><li>• Are the ecological, social, or other impacts anticipated to be unreasonably high relative to other alternatives?</li></ul>

# Evaluation Approach and Criteria

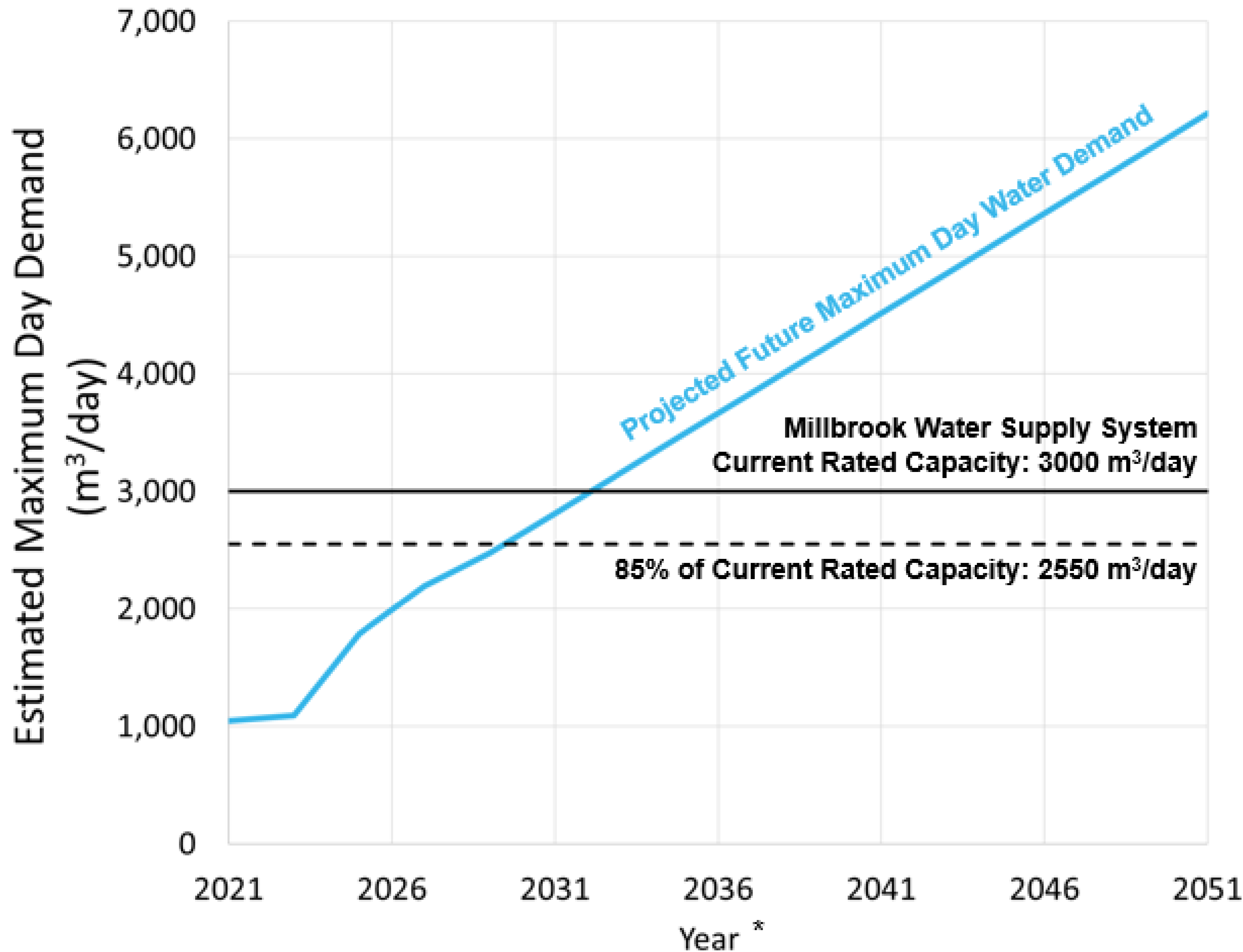
After screening the long list alternatives, the shortlisted alternatives for each system component was evaluated using the criteria and rating scale below.

Criteria	Example Considerations	Examples Continued
<b>Social</b>	<ul style="list-style-type: none"> <li>Ability to allow for future growth forecast under Township's GMS</li> <li>Sensory impacts, such as noise, dust, etc. both during and after construction</li> </ul>	<ul style="list-style-type: none"> <li>Effects on neighbouring properties</li> <li>Effects on the municipality, local businesses, etc.</li> <li>Effects on Indigenous communities</li> </ul>
<b>Technical</b>	<ul style="list-style-type: none"> <li>Compatibility with existing systems</li> <li>Ease of implementation</li> <li>Effects on operations and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Technical Complexity</li> <li>Complies with regulatory/approval requirements</li> </ul>
<b>Cultural</b>	<ul style="list-style-type: none"> <li>Effects on archaeological sites or structures</li> </ul>	<ul style="list-style-type: none"> <li>Effects on cultural sites or structures</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>Effects on wildlife and vegetation, habitat</li> <li>Effects on water, soil and air quality</li> </ul>	<ul style="list-style-type: none"> <li>Climate Change</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>Approximate magnitude of life cycle costs (capital cost, operation &amp; maintenance cost)</li> </ul>	<ul style="list-style-type: none"> <li>Sustainability and affordability</li> <li>Financial risks</li> </ul>

Least Positive/ Most Negative	More Negative Than Positive	Moderate	More Positive Than Negative	Most Positive/ Least Negative
				



# Current and Future Capacity Requirements



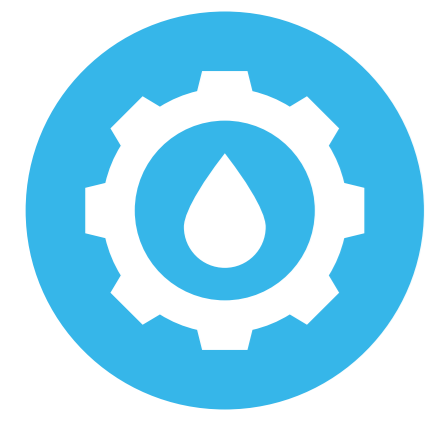
- The current Rated Capacity of the Millbrook water supply system is 3000 m<sup>3</sup>/day.
- When planning for future infrastructure needs, it is important to start planning ahead of reaching 100% of capacity. In this case, planning and implementation of the expansion should occur when the demand reaches 85% of capacity.
- Based on future population, employment projections and anticipated rate of growth, the Millbrook water supply would reach 85% of its rated capacity by approximately 2029. By 2051, a capacity of approximately 6214 m<sup>3</sup>/day would be required.
- **Therefore, additional water supply capacity would be required to service growth beyond 2031.**

\* Actual timelines for water supply requirements will depend on rate of growth and demand



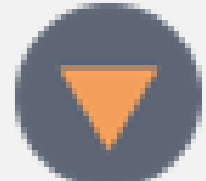


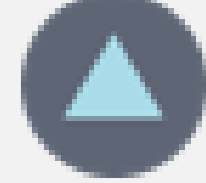




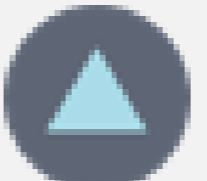






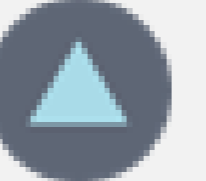

# Long List of Alternatives and Screening

Alternatives	Does the alternative address the Problem & Opportunity Statement?	Is the alternative technical and economically feasible?	Can the alternative be implemented without significant impacts?	Summary
1 Do Nothing	x	x	x	Carried forward to detailed evaluation as a baseline for comparison of all short-listed alternatives. Does not meet approved planning policies and would not be technically feasible in the long term.
2 Limit Growth	x	✓	x	Does not meet approved planning policies, therefore does not address the Problem and Opportunity Statement.
3 Increase Water Conservation	x	✓	✓	Water conservation would reduce water demand but would not provide the required magnitude to support future growth. This would not be a standalone solution and can be incorporated with the preferred solution.
4 Expand Existing Groundwater Well Supply	✓	✓	✓	Alternatives 4 & 5 are feasible solutions that would address the Problem and Opportunity Statement. These alternatives will be evaluated in detail to identify a recommended solution.
5 Find Additional Groundwater Well Supply	✓	✓	✓	
6 Connect to External Water Supply System (e.g. City of Peterborough)	✓	x	x	Alternative 6 would address the Problem and Opportunity Statement but would have significant cost and other impacts to connect to the City of Peterborough water system over 20 km away. This is not feasible as it contradicts the City of Peterborough Official Plan.
7 Construct New Surface Water Treatment Plant	✓	x	x	Alternative 7 would address the Problem and Opportunity Statement but would have significant cost and other impacts to construct a new surface water treatment plant, including intake.



# Short List and Detailed Evaluation Summary

Criteria	Alternative 1 Do Nothing	Alternative 4 Expand Existing Groundwater Well Supply	Alternative 5 Find Additional Groundwater Well Supply
<b>Social</b>	<ul style="list-style-type: none"> <li>Would not support planned future growth and provincial mandate</li> <li>Would not require property acquisition and would not impact surrounding land uses</li> </ul> 	<ul style="list-style-type: none"> <li>Would not require land acquisition</li> <li>Potential impacts to nearby land uses due to adjustments to current well head protection area (WHPA) delineation</li> <li>Moderate impacts to nearby neighbours during construction; shorter construction duration than Alt. 5</li> </ul> 	<ul style="list-style-type: none"> <li>Would require land acquisition</li> <li>Potential impacts to nearby land uses due to well head protection area (WHPA) delineation</li> <li>Moderate impacts to nearby neighbours during construction; longer construction duration than Alt. 4</li> </ul> 
<b>Technical</b>	<ul style="list-style-type: none"> <li>Capacity would be constrained to 3000 m<sup>3</sup>/d with no opportunity for supply redundancy</li> </ul> 	<ul style="list-style-type: none"> <li>Hydrogeological investigation required to confirm water quantity &amp; quality, and to confirm if this alone would supply required future capacity.</li> <li>More complex construction than Alt. 5 since existing facility must remain operational</li> <li>May have space constraints compared to Alt. 5</li> <li>Provides opportunity for supply redundancy and increased security of supply</li> </ul> 	<ul style="list-style-type: none"> <li>Hydrogeological investigation required to confirm water quantity &amp; quality, and to confirm if this alone would supply required future capacity</li> <li>Less complex construction than Alt. 4 since new facility is independent</li> <li>New property to consider spatial requirements and constraints</li> <li>Provides opportunity for supply redundancy and increased security of supply</li> </ul> 
<b>Cultural</b>	<ul style="list-style-type: none"> <li>No construction and therefore no impacts to cultural or archaeological resources</li> </ul> 	<ul style="list-style-type: none"> <li>Current facility property has been previously disturbed; therefore, would anticipate limited to no potential for retained archaeological or cultural resources</li> </ul> 	<ul style="list-style-type: none"> <li>Unknown archaeological and cultural conditions until specific site is selected; archeological and cultural investigation may be required</li> </ul> 
<b>Env.</b>	<ul style="list-style-type: none"> <li>Would not require construction; therefore, no anticipated impacts</li> </ul> 	<ul style="list-style-type: none"> <li>Current facility property has been previously disturbed; therefore, would anticipate limited to no impacts to environmental resources</li> <li>Investigation required to confirm viability and impacts on groundwater conditions</li> </ul> 	<ul style="list-style-type: none"> <li>Unknown environmental conditions until specific site is selected; environmental investigation may be required</li> <li>Investigation required to confirm viability and impacts on groundwater conditions</li> </ul> 
<b>Cost</b>	\$\$	\$\$\$	\$\$\$\$
<b>Summary</b>	<b>Not recommended due to non-compliance with Provincial Mandate</b>	<b>Recommended Alternative</b>	<b>Recommended Alternative</b>

Least Positive/ Most Negatives	More Negative Than Positive	Moderate	More Positive Than Negative	Most Positive/ Least Negative
				



Water System: Water Supply

# Recommended Solution



## Alternative 4 Expand Existing Groundwater Well Supply and / or Alternative 5 Find Additional Groundwater Well Supply

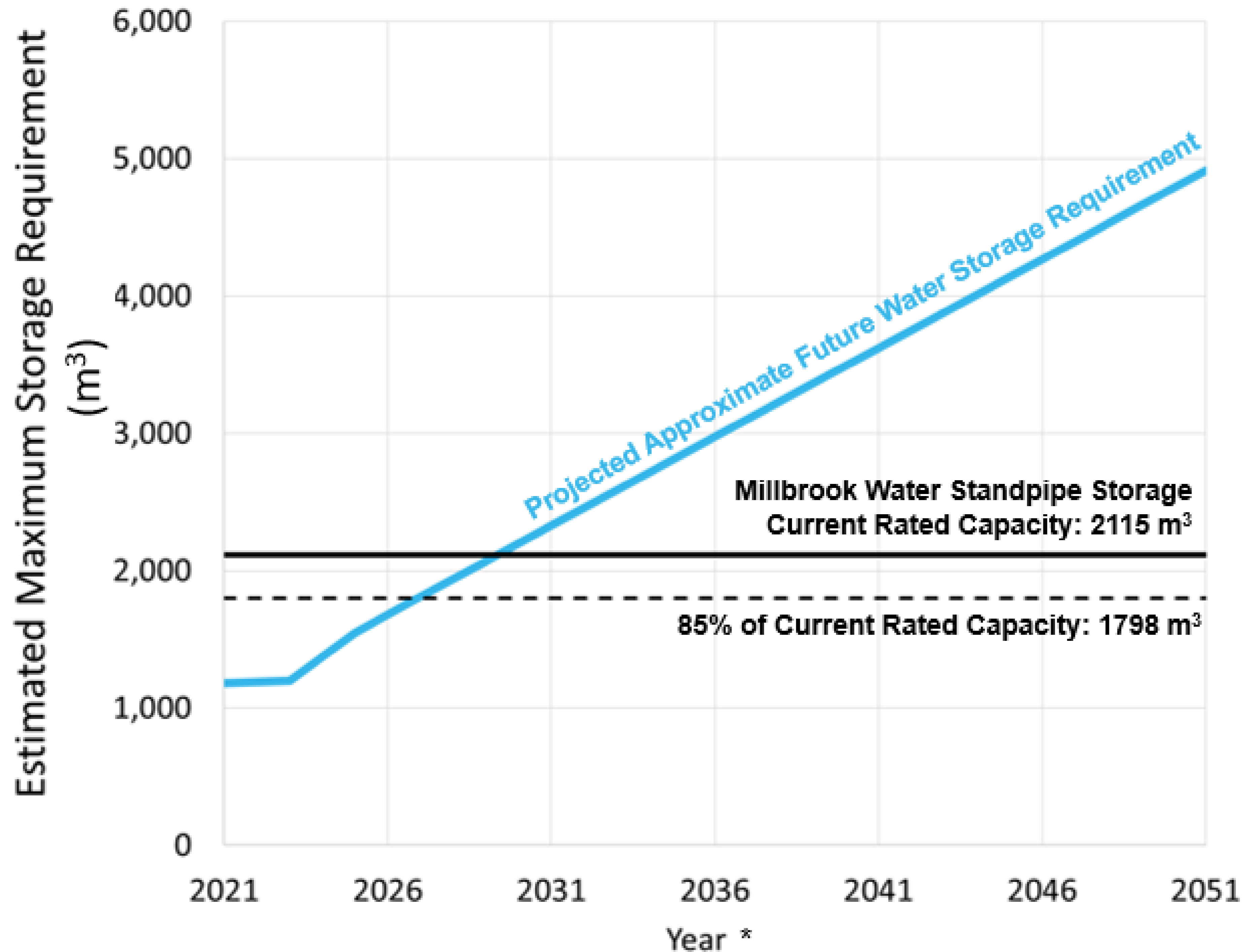
- Capacity expansion from 3000 m<sup>3</sup>/day (existing) to 6214 m<sup>3</sup>/day (year 2051), in a staged fashion to meet future growth

### Next steps:

- Hydrogeological investigations required to confirm water quantity & quality, and to confirm ability to supply required future capacity.
- Additional investigation required in the future to confirm whether the project requires an Archaeological Screen Process (ASP) or a Schedule B Class EA.
- Future investigation would confirm approach, footprint requirements and preferred design concept.



# Current and Future Capacity Requirements



- The current Rated Capacity of the Millbrook water standpipe is 2115 m<sup>3</sup>.
- When planning for future infrastructure needs, it is important to start planning ahead of reaching 100% of capacity. In this case, planning and implementation of the expansion should occur when the demand reaches 85% of capacity.
- Based on future population, employment projections and anticipated rate of growth, the Millbrook water storage tank would reach 85% of its rated capacity by approximately 2027. By 2051, a capacity of approximately 4912 m<sup>3</sup> would be required.
- **Therefore, additional water storage capacity would be required to service growth beyond 2029.**

\* Actual timelines for water storage requirements will depend on rate of growth and demand



# Long List of Alternatives and Screening

Alternatives	Does the alternative address the Problem & Opportunity Statement?	Is the alternative technical and economically feasible?	Can the alternative be implemented without significant impacts?	Summary
1 Do Nothing	x	x	x	Carried forward to detailed evaluation as a baseline for comparison of all short-listed alternatives. Does not meet approved planning policies and would not be technically feasible in the long term.
2 Limit Growth	x	✓	x	Does not meet approved planning policies, therefore does not address the Problem and Opportunity Statement.
3 Increase Water Conservation	x	✓	✓	Water conservation would reduce water demand but would not provide the required magnitude to support future growth. This would not be a standalone solution and can be incorporated with the preferred solution.
4 Add additional water storage at new location and retain existing standpipe	✓	✓	✓	Alternative 4 is feasible and would address the Problem and Opportunity Statement. This alternative will be evaluated in detail to identify a recommended solution.
5 Build new water reservoir at another site and decommission existing water storage tank.	✓	x	x	Alternative 5 would address the Problem and Opportunity Statement, but would have significant cost and other impacts. It would also not make good use of existing infrastructure investments, such as the existing standpipe.





## Water System: Water Storage

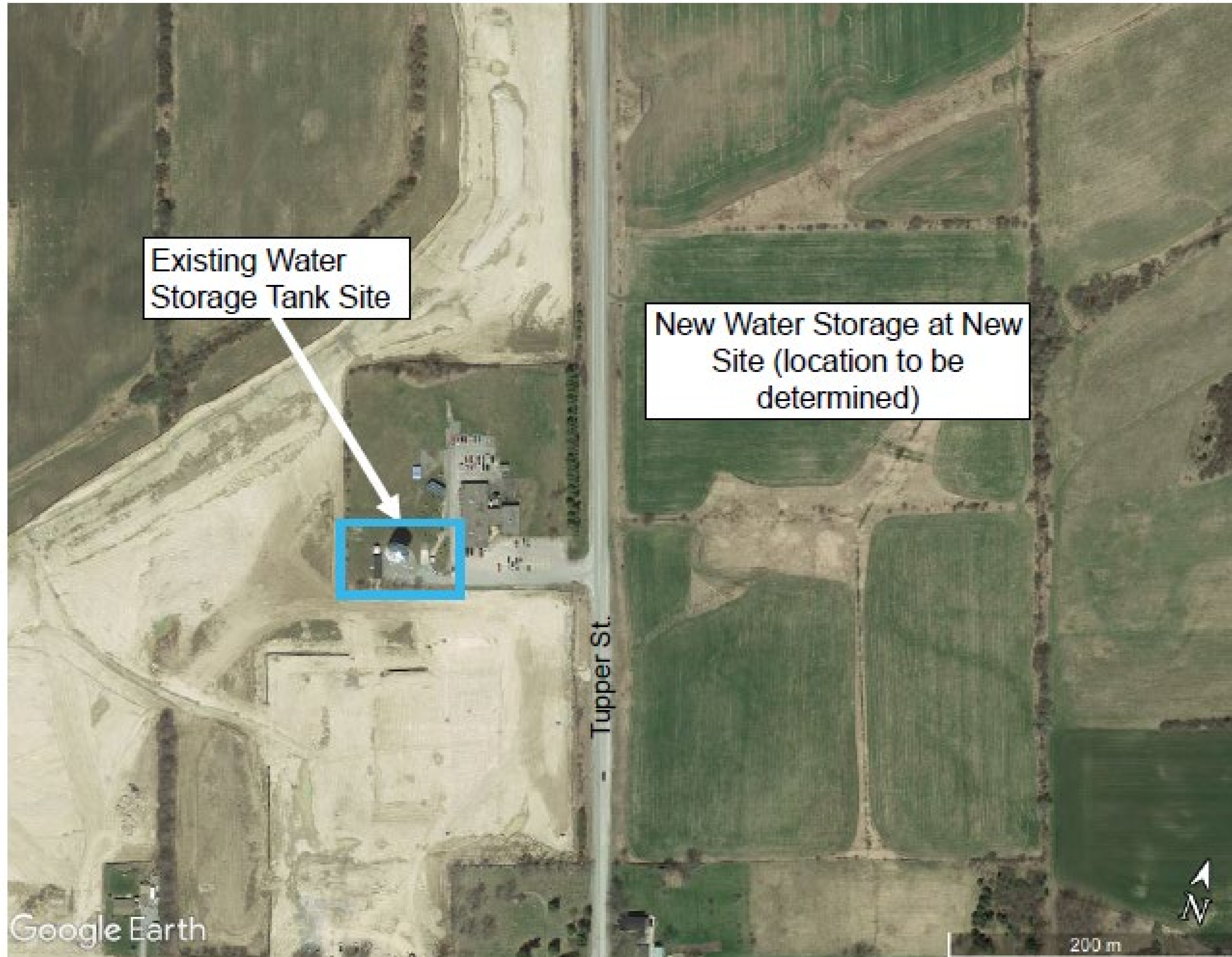
# Short List and Detailed Evaluation Summary

Evaluation Criteria	Alternative 1 Do Nothing	Rating	Alternative 4 Add additional water storage at new location	Rating
<b>Social</b>	<ul style="list-style-type: none"> <li>Would not support planned future growth and provincial mandate</li> <li>Would not require property acquisition and would not impact surrounding land uses</li> </ul>		<ul style="list-style-type: none"> <li>Would require land acquisition</li> <li>Aesthetic impacts to surrounding properties</li> <li>Moderate impacts to nearby neighbours during construction</li> </ul>	
<b>Technical</b>	<ul style="list-style-type: none"> <li>Capacity would be constrained to 2115 m<sup>3</sup>/d</li> </ul>		<ul style="list-style-type: none"> <li>Different water storage types may be evaluated (standpipe, elevated tank, at grade, buried, etc.)</li> <li>Possible modifications to existing water supply and booster pumping station</li> <li>New property to consider spatial requirements and constraints</li> </ul>	
<b>Cultural</b>	<ul style="list-style-type: none"> <li>No construction and therefore no impacts to cultural or archaeological resources</li> </ul>		<ul style="list-style-type: none"> <li>Unknown archaeological and cultural conditions until specific site is selected; archeological and cultural investigation may be required</li> </ul>	
<b>Environmental</b>	<ul style="list-style-type: none"> <li>Would not require construction; therefore, no anticipated impacts</li> </ul>		<ul style="list-style-type: none"> <li>Unknown environmental conditions until specific site is selected; environmental investigation may be required</li> </ul>	
<b>Cost</b>	\$\$		\$\$\$	
<b>Summary</b>	<b>Not recommended - due to non-compliance with Provincial Mandate</b>		<b>Recommended Alternative</b>	

Least Positive/ Most Negatives	More Negative Than Positive	Moderate	More Positive Than Negative	Most Positive/ Least Negative



# Recommended Solution



## Alternative 4 Add additional water storage at a new location

- Capacity expansion from 2115 m<sup>3</sup> (existing) to 4912 m<sup>3</sup> (year 2051).

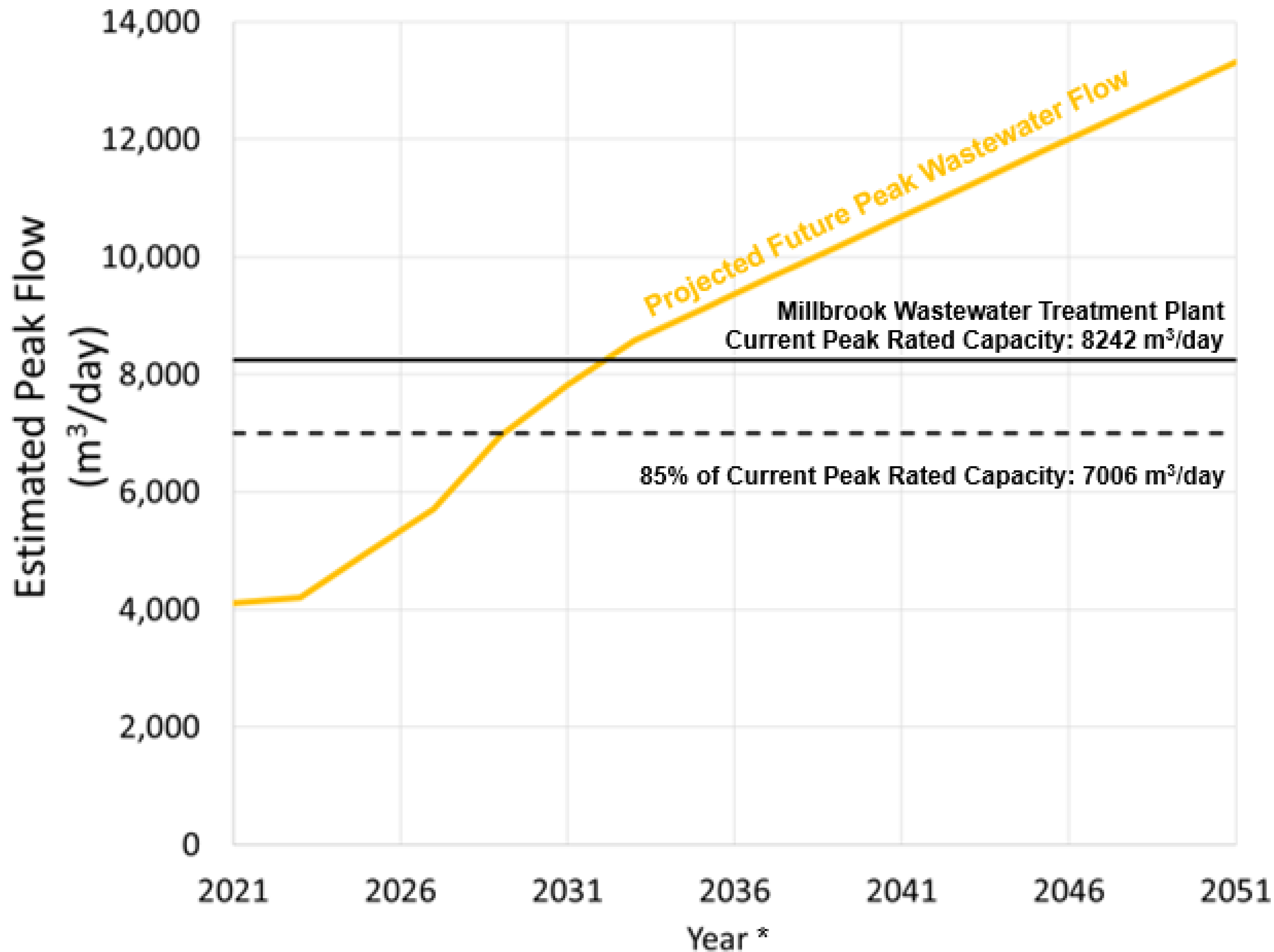
### Next Steps:

- Additional investigation (environmental, archaeological, cultural heritage) required in the future to fulfill a Schedule B Class EA process.
- Future Schedule B Class EA would confirm preferred solution including location, capacity and type of storage.



## Wastewater System: Wastewater Treatment

# Current and Future Capacity Requirements



- The current peak flow Rated Capacity of the Millbrook wastewater treatment is 8242 m<sup>3</sup>/day.
- When planning for future infrastructure needs, it is important to start planning ahead of reaching 100% of capacity. In this case, planning and implementation of the expansion should occur when the demand reaches 85% of capacity.
- Based on future population, employment projections and anticipated rate of growth, the Millbrook wastewater treatment plant would reach 85% of its rated capacity by approximately 2029. By 2051, a capacity of approximately 13316 m<sup>3</sup>/day would be required.
- On an average day flow basis, additional wastewater treatment capacity is also required in the future.
- **Therefore, additional wastewater treatment capacity would be required to service growth beyond 2031.**

\* Actual timelines for wastewater treatment requirements will depend on rate of growth and demand





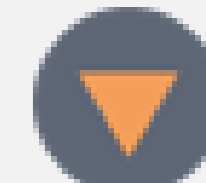









# Long List of Alternatives and Screening






Alternatives	Does the alternative address the Problem & Opportunity Statement?	Is the alternative technical and economically feasible?	Can the alternative be implemented without significant impacts?	Summary
1 Do Nothing	✗	✗	✗	Carried forward to detailed evaluation as a baseline for comparison of all short-listed alternatives. Does not meet approved planning policies and would not be technically feasible in the long term.
2 Limit Growth	✗	✓	✗	Does not meet approved planning policies, therefore does not address the Problem and Opportunity Statement.
3 Reduce Inflow and Infiltration (I&I)	✗	✓	✓	I&I reduction alone would reduce wastewater flow but would not provide the required magnitude to support future growth. This would not be a standalone solution and can be incorporated with the preferred solution.
4 Expand Existing Wastewater Treatment Plant	✓	✓	✓	Alternative 4 is a feasible solution that would address the Problem and Opportunity Statement. This alternative will be evaluated in detail to identify a recommended solution.
5 Construct a Second Wastewater Treatment Plant	✓	Further investigation needed	Further investigation needed	Alternative 5 would address the Problem and Opportunity Statement but may have significant cost and other impacts. Further consideration/investigation is required.
6 Convey Wastewater to another system for treatment (e.g. City of Peterborough)	✓	✗	✗	Alternative 6 would address the Problem and Opportunity Statement but would have significant cost and other impacts to connect to the City of Peterborough system over 20 km away. This is not feasible as it contradicts the City of Peterborough Official Plan.
7 Construct new decentralized wastewater systems	✓	✗	✗	Alternative 7 would address the Problem and Opportunity Statement but would have significant cost and other impacts to construct new decentralized systems.



# Wastewater System: Wastewater Treatment

## Short List and Detailed Evaluation Summary

Criteria	Alternative 1 Do Nothing	Alternative 4 Expand Existing Wastewater Treatment Plant	Alternative 5 Construct a Second Wastewater Treatment Plant
<b>Social</b>	<ul style="list-style-type: none"> <li>Would not support planned future growth and provincial mandate</li> <li>Would not require property acquisition and would not impact surrounding land uses</li> </ul> 	<ul style="list-style-type: none"> <li>Would not require property acquisition</li> <li>Aesthetic impacts to surrounding properties</li> <li>Moderate impacts to nearby neighbours during construction</li> </ul> 	<ul style="list-style-type: none"> <li>Would require land acquisition</li> <li>Aesthetic impacts to surrounding properties</li> <li>Moderate impacts to nearby neighbours during construction</li> <li>Potential impacts to nearby land uses depending on effluent discharge location</li> </ul> 
<b>Technical</b>	<ul style="list-style-type: none"> <li>Capacity would be constrained to 8242 m<sup>3</sup>/d</li> </ul> 	<ul style="list-style-type: none"> <li>Assimilative capacity study required to confirm effluent discharge capacity</li> <li>Must carefully stage construction to maintain current plant operation</li> <li>Uses existing nearby infrastructure</li> </ul> 	<ul style="list-style-type: none"> <li>Assimilative capacity study required to confirm effluent discharge location and capacity</li> <li>Less complex construction than Alt. 4 since new facility is independent</li> <li>New property to consider spatial requirements and constraints</li> </ul> 
<b>Cultural</b>	<ul style="list-style-type: none"> <li>No construction and therefore no impacts to cultural or archaeological resources</li> </ul> 	<ul style="list-style-type: none"> <li>Possible archeological potential as nearby land has not been developed</li> </ul> 	<ul style="list-style-type: none"> <li>Unknown archaeological and cultural conditions until specific site is selected; archeological and cultural investigation may be required</li> </ul> 
<b>Env.</b>	<ul style="list-style-type: none"> <li>Would not require construction; therefore, no anticipated impacts</li> <li>Higher flows without expanding plant may cause bypasses to the environment</li> </ul> 	<ul style="list-style-type: none"> <li>Potential impacts to wildlife, vegetation and wetlands</li> <li>Potential impacts to effluent discharge location would need to be investigated through an assimilative capacity study or other investigations</li> </ul> 	<ul style="list-style-type: none"> <li>Unknown environmental conditions until specific site is selected; environmental investigation may be required</li> <li>Investigation required to confirm viability and impacts on effluent discharge location</li> </ul> 
<b>Cost</b>	\$\$	\$\$\$	\$\$\$\$
<b>Summary</b>	<b>Not recommended due to non-compliance with Provincial Mandate</b>	<b>Recommended Alternative</b>	<b>Further Investigation Needed</b>

Least Positive/ Most Negatives	More Negative Than Positive	Moderate	More Positive Than Negative	Most Positive/ Least Negative
				



# Wastewater System: Wastewater Treatment Recommended Solution



## Alternative 4 Expand Existing Wastewater Treatment Plant

- Capacity expansion from 8242 m<sup>3</sup>/day (existing) to 13,316 m<sup>3</sup>/day (year 2051), based on peak flows.

### Next steps:

- An assimilative capacity study is required to confirm effluent discharge capacity, and to confirm if this would support the required future capacity.
- Additional investigation (environmental, archaeological, cultural heritage) required in the future to fulfill requirements of a Schedule C Class EA process.
- Future Schedule C Class EA would confirm preferred solution including technology and footprint requirements.

# Next Steps

Following this Public Information Centre (PIC), the Project Team will receive and consider comments from PIC participants and other interested parties.

Feedback received will be considered in finalizing the recommended solutions and will be documented through the Master Servicing Study Report.

The next opportunities for public notification and input will include:

Opportunity	Anticipated Date
Notice of Study Completion Published	Early 2024
Final Report Available for 30-Day Public Review and Comment	Early 2024

# Thank you for Attending!

## Questions or Comments ?

- Complete a comment sheet this evening or submit comments to a member of the project team.
- More information including copies of project notices and PIC materials can be found at:

[www.cavanmonaghan.net](http://www.cavanmonaghan.net)

## Project Team Contact Information

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Please provide your comments by **July 21, 2023**  
Include Subject Line: **Cavan Monaghan MSS PIC**