

Public Information Centre

Pelham New Elevated Tank and Enhanced Conceptual Design Class Environmental Assessment

November 6, 2019

Open House from 6 p.m. to 8 p.m.

Pelham Fire Hall Station No. 1, 177 RR 20, Fonthill

Welcome & Please Sign In

Information presented at this Public Information Centre (PIC) includes:

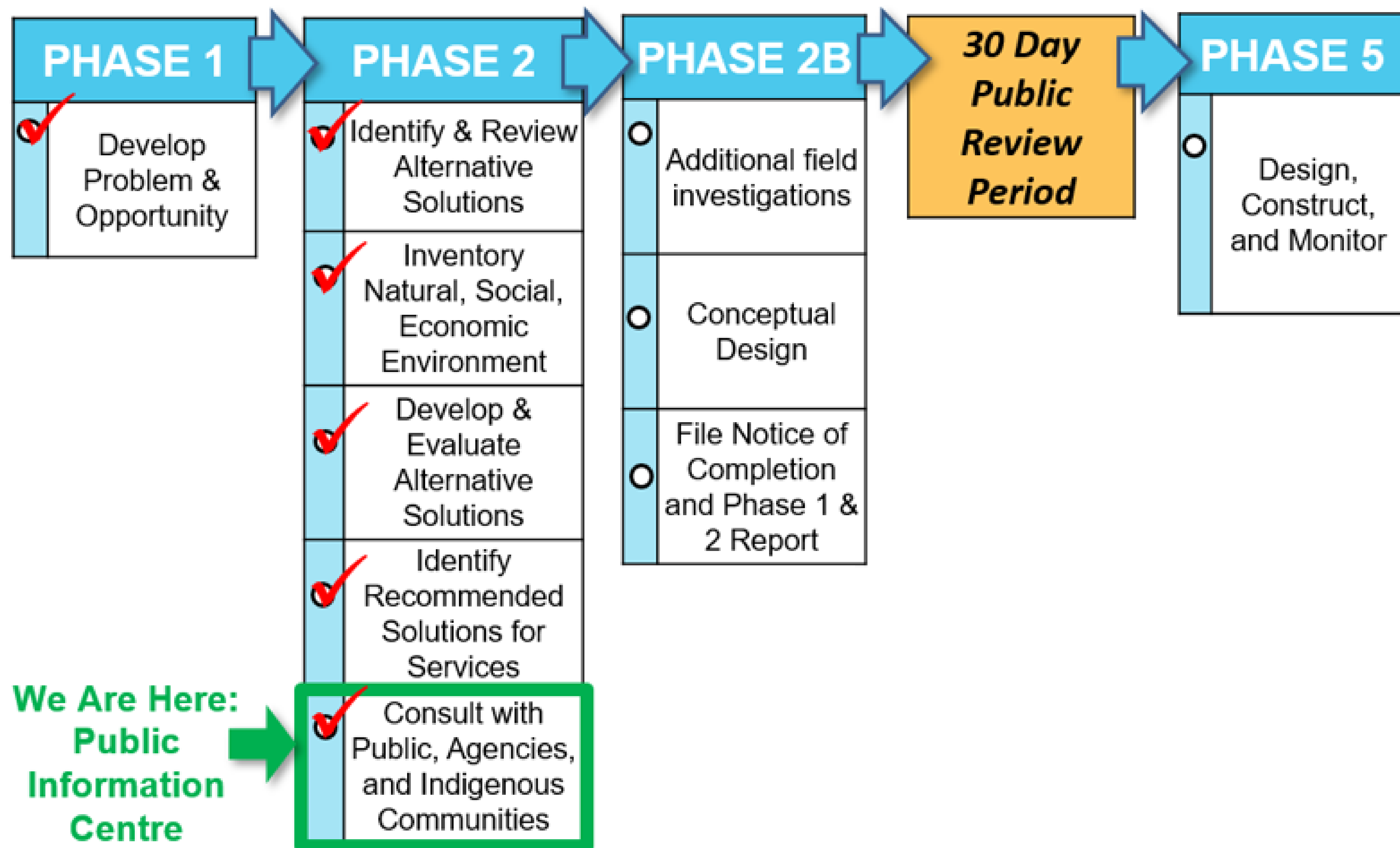
- What we plan to achieve
- Study findings to date
- Evaluation of the alternative sites
- Next steps

Please review the materials and submit your comments on the sheets provided

Municipal Class EA Process

Niagara Region is undertaking a Schedule B Municipal Class EA study for the Pelham Water System to plan for future water storage, pressure needs and make improvements to the water system, as required.

Schedule B Municipal Class EA Process



Problem & Opportunity (P&O) Statement

To accommodate growth to 2041, the Niagara Region Water and Wastewater Master Servicing Plan (MSP) identified improvements for the Pelham Water System including:

- Construction of a New Elevated Water Storage Tank (ET) and associated system upgrades to:
 - Provide opportunities for system optimization
 - Improve the storage and pressure in the Pelham Water System

This Class EA will:

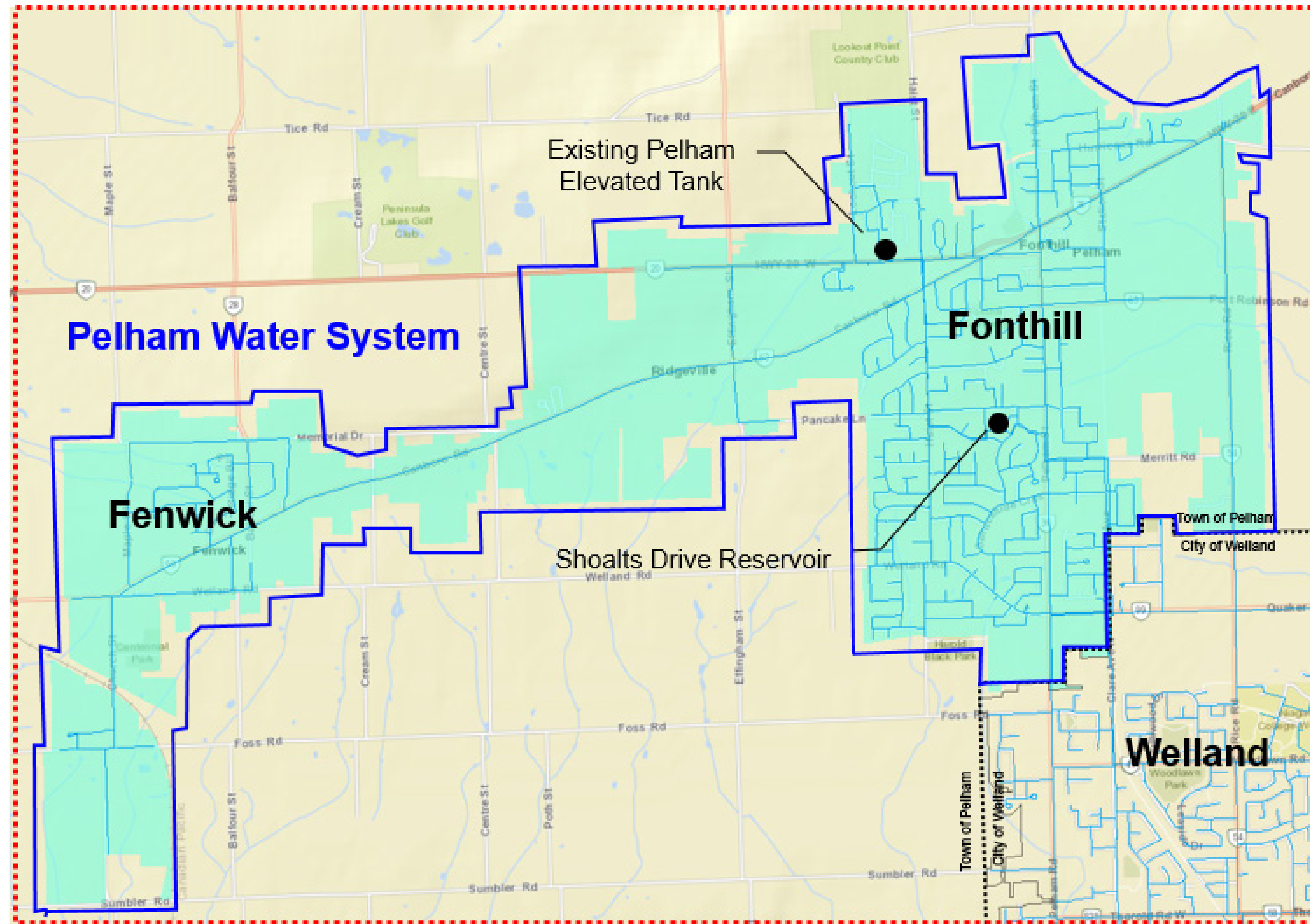
- Identify and evaluate various potential sites for the new elevated tank
- Identify necessary improvements to the existing water system
- Select a preferred site for the new ET after consideration of various factors, including social, economical, technical, archaeological, and environmental

Study Area

Areas currently serviced by the Pelham Water System (Fonthill & Fenwick).

How the Pelham Water System Works:

The Welland Water Treatment Plant supplies water through the Shoalts Drive Reservoir and the existing Pelham Elevated Tank.



Study Area

Population, Water Demand and Water Storage

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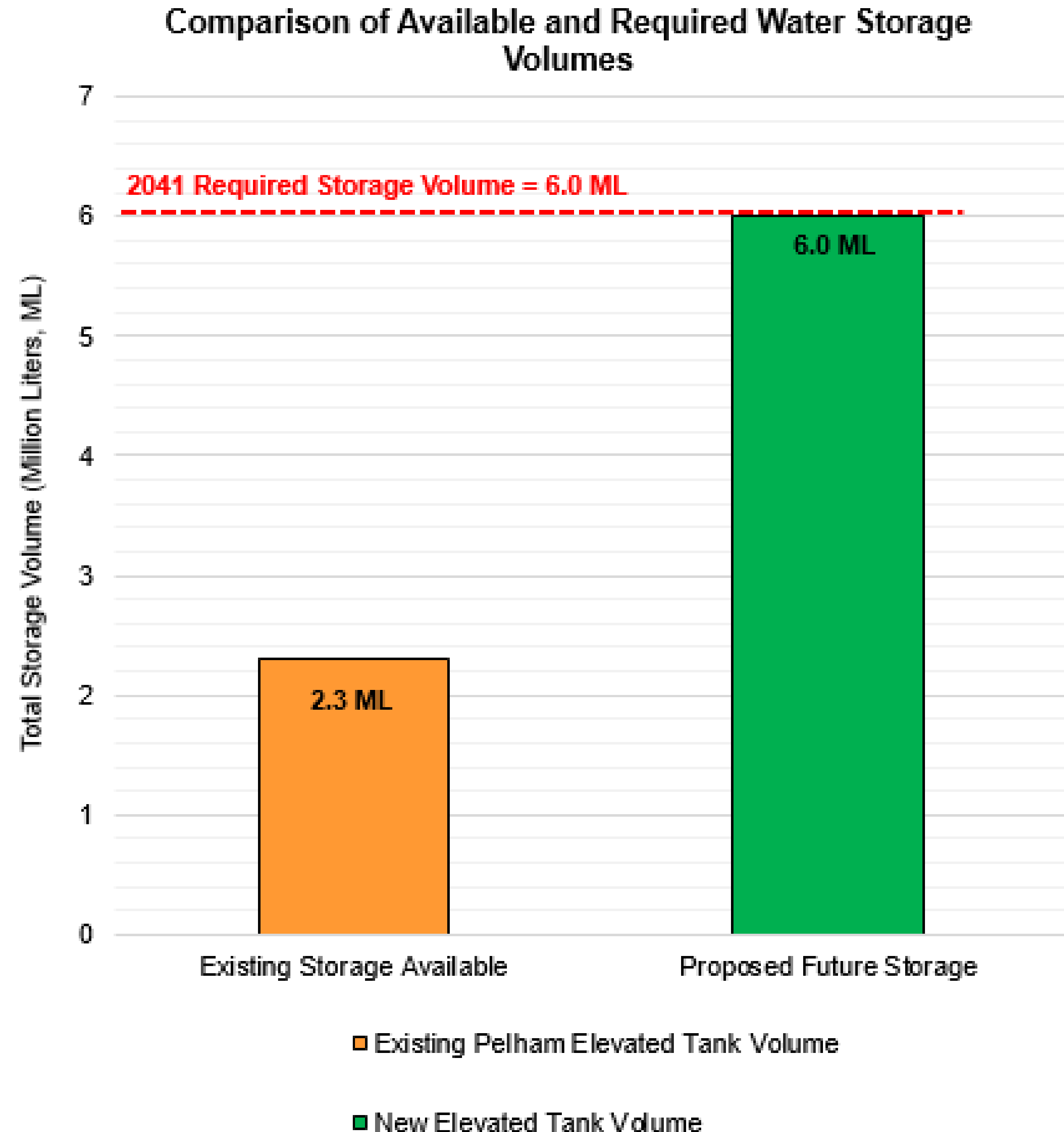
The population growth and water demands estimated for 2041 requires the water storage volume to increase.

Existing Pelham Water System:

- Storage volume is insufficient for 2041
- Shoalts Drive Reservoir is used to transfer water to Pelham and back to Welland
- Existing Pelham Elevated Tank (ET) cannot be expanded
- There is a booster station to reach desired pressures at northern parts of Fonthill due to higher elevations

Proposed Pelham Water System Improvements:

- A new 6.0 ML ET at a higher elevation to address storage volume and to meet pressure requirements
- Existing ET could then be demolished, and Existing Shoalts Drive Reservoir is to remain in operation

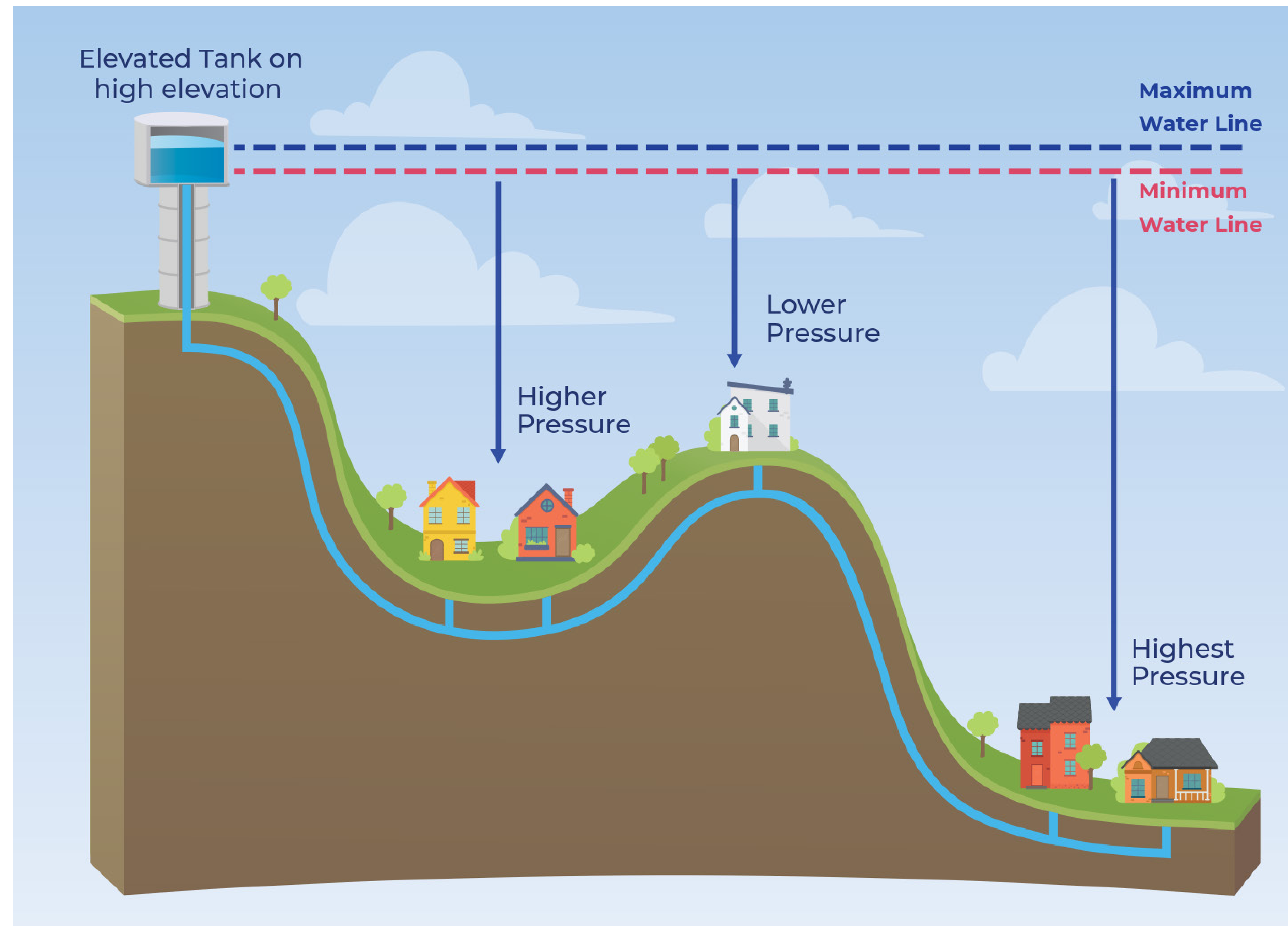


How the Water System Works

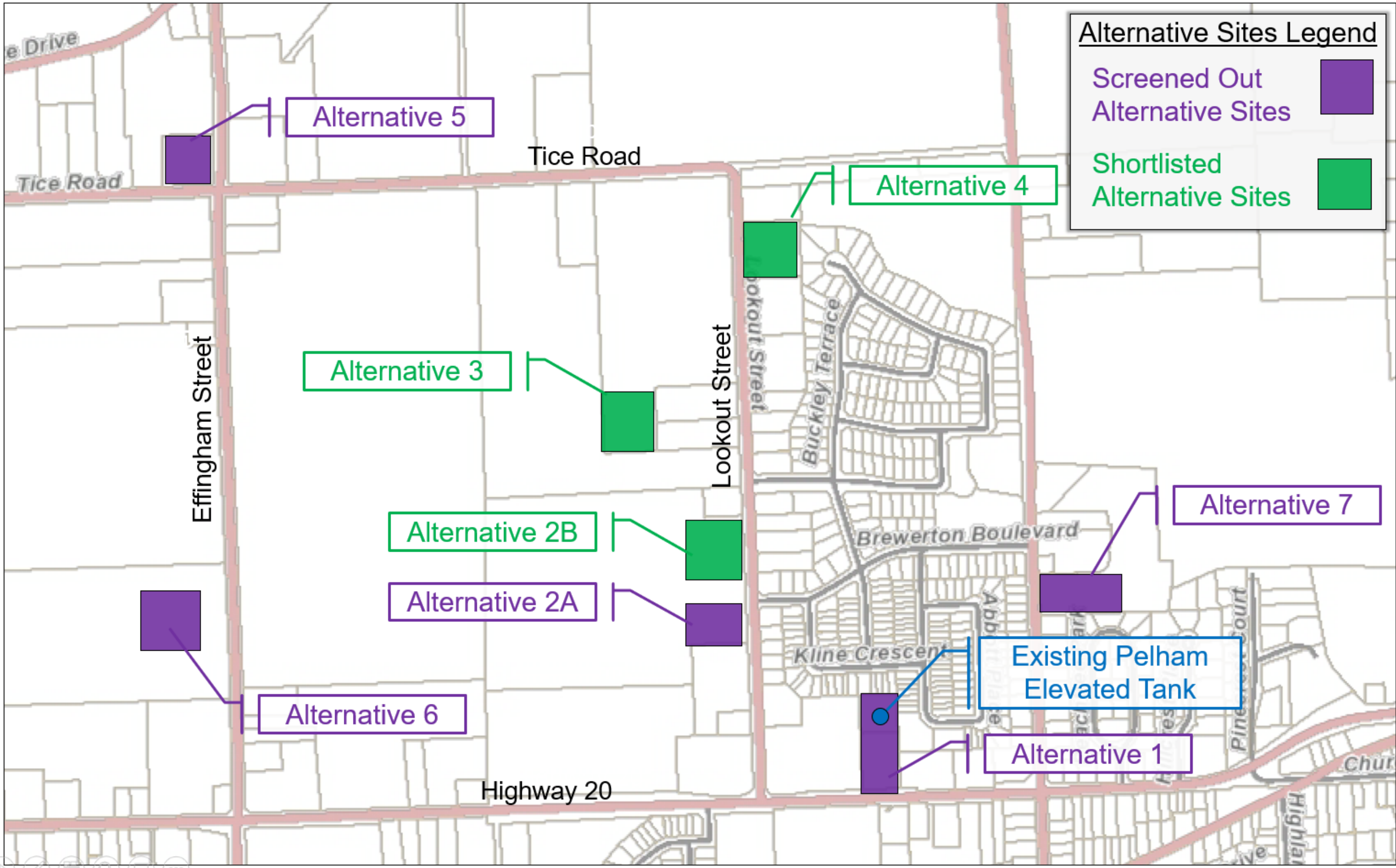
The greater the height difference between the water level in a water tank and a house, the more water pressure is available for that house.

The house at the top of the hill will have lower water pressure than the house at the bottom of the hill.

An elevated tank should be designed to provide a preferred range of 50 to 70 psi, but a minimum of 40psi to the house on the highest hill, and not more than 100psi to the house at the lowest point in the water system.



Preliminary List & Short List of Alternative Sites



Screening of Alternative Sites:

Alt. #	Description	Key Points	Carry Forward to Short List? (Yes/No)
0	Do Nothing – Baseline scenario, existing ET remains	Does not satisfy P&O Statement	No
1	Existing location of ET	Insufficient space	No
2A	1524 Lookout Street	Insufficient space	No
2B	1542 Lookout Street	Adequate space	Yes
3	South of existing Driving Range	Adequate space	Yes
4	1621 Lookout Street (Existing Bell Tower)	Adequate space	Yes
5	Existing Communications Tower location at Tice Road & Effingham Street	Insufficient Space	No
6	Existing Lafarge Quarry	Adequate space, however, close to quarry activity and at a greater distance from the existing infrastructure	No
7	Haist Street, North of Peachtree Park Cres.	Insufficient space and land is already developed	No

Evaluation Criteria for Reviewing Short Listed Alternatives

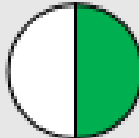
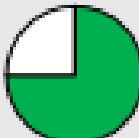
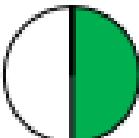
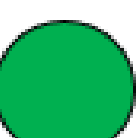
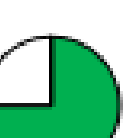
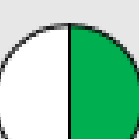
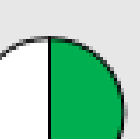
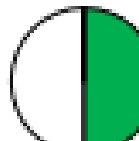
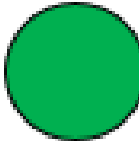
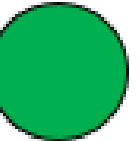
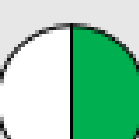
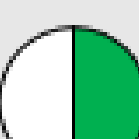
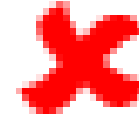
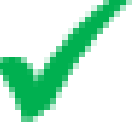
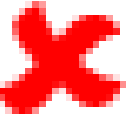
Each of the short listed alternatives will be evaluated based on the following criteria:

Criteria	Example Considerations
Social	• Effects on Indigenous communities • Effects on neighbouring properties • Sensory impacts during and after construction (noise, dust, etc.) • Effects on the municipality, local businesses, etc. • Future growth as per the Region Official Plan
Economical	• Life cycle costs (capital cost, operation & maintenance cost) • Sustainability and affordability

Criteria	Example Considerations
Technical	• Compatibility with existing systems • Ease of implementation • Effects on operations and maintenance • Treatment complexity • Ability to meet existing and future water demands
Archaeological	• Effects on archeological sites or structures • Effects on cultural sites or structures
Environmental	• Effects on wildlife and vegetation • Effects on habitats and air quality • Effects on Source Water Protection • Climate Change

Evaluation of Short Listed Alternatives Sites



Evaluation Criteria	Alternative Site 2B – 1524 Lookout Street	Rating	Alternative Site 3 – South of Driving Range	Rating	Alternative Site 4 – 1621 Lookout Street	Rating
Social	- Zoned as Residential; rezoning required - Land privately owned and part of a large, 30-acre property; severance of land may impact property owner - Higher aesthetic impacts to surrounding properties as closer to more houses and Lookout Street		- Zoned as Agriculture with an amendment to allow the Golf Course; rezoning required - Land privately owned by Golf Course; severance of land may have minimal impact on property owner - Lower aesthetic impacts to surrounding properties as further away from Lookout Street		- Zoned as Agricultural; rezoning required - Land privately owned; Owner not currently open to selling land. - Higher aesthetic impacts to surrounding properties as closer to more houses and Lookout Street	
Economical	- Higher capital costs anticipated related to land acquisition & overall ET height based on ground elevation - Lower capital cost for shorter watermain - Similar operation and maintenance lifecycle costs anticipated for all alternatives		- Lower capital costs anticipated related to land acquisition & overall ET height based on ground elevation - Moderate capital cost for longer watermain - Similar operation and maintenance lifecycle costs anticipated for all alternatives		- Moderate capital costs anticipated related to land acquisition & overall ET height based on ground elevation - Highest capital cost for longer watermain - Similar operation and maintenance lifecycle costs anticipated for all alternatives	
Technical	- Similar approvals anticipated to be required - Similar operations and maintenance effects - Similar improvements to water distribution system for pressure and fire flows - Closer to existing watercourse and may be more difficult to construct ET due to soil condition and groundwater levels - Existing communications tower nearby – interruption of signals to be minimized		- Similar approvals anticipated to be required - Similar operations and maintenance effects - Similar improvements to water distribution system for pressure and fire flows - Slightly further from existing watercourse and may impact construction ET due to soil condition and groundwater levels - Existing communications tower nearby – interruption of signals to be minimized		- Similar approvals anticipated to be required - Similar operations and maintenance effects - Similar improvements to water distribution system for pressure and fire flows - Existing communications tower on same site – would cause major interruption of service during ET construction	
Archaeological	Potential for archaeological interest.		Less potential for archaeological interest as land has been previously disturbed		Less potential for archaeological interest as land has been previously disturbed	
Environmental	- Moderate impact from natural environmental perspective, with mitigation measures required during design/construction: - Many Barn Swallows observed (Species at Risk) - Located on Provincially Significant Area of Natural and Scientific Interest (Kame Delta Formation) - Located in Greenbelt Plan Area		- Moderate impact from natural environmental perspective, with mitigation measures required during design/construction: - Many Barn Swallows observed (Species at Risk) - Located on Provincially Significant Area of Natural and Scientific Interest (Kame Delta Formation) - Located in Greenbelt Plan Area		- Least impact from natural environmental perspective: - Least amount of bird activity - Locally rare trees along forest edge	
Overall Conclusion	Alternative will not be carried forward.		Alternative to be carried forward – Recommended Alternative Site		Alternative will not be carried forward.	

Recommended Alternative Site



Alternative 3 - New Elevated Tank (ET) South of Golf Driving Range:

- New ET approx. 44m tall above ground level
- New watermain from ET connected to existing transmission main
- New access road to ET
- Space for additional infrastructure e.g. overflow pond
- Demolition of existing Pelham ET

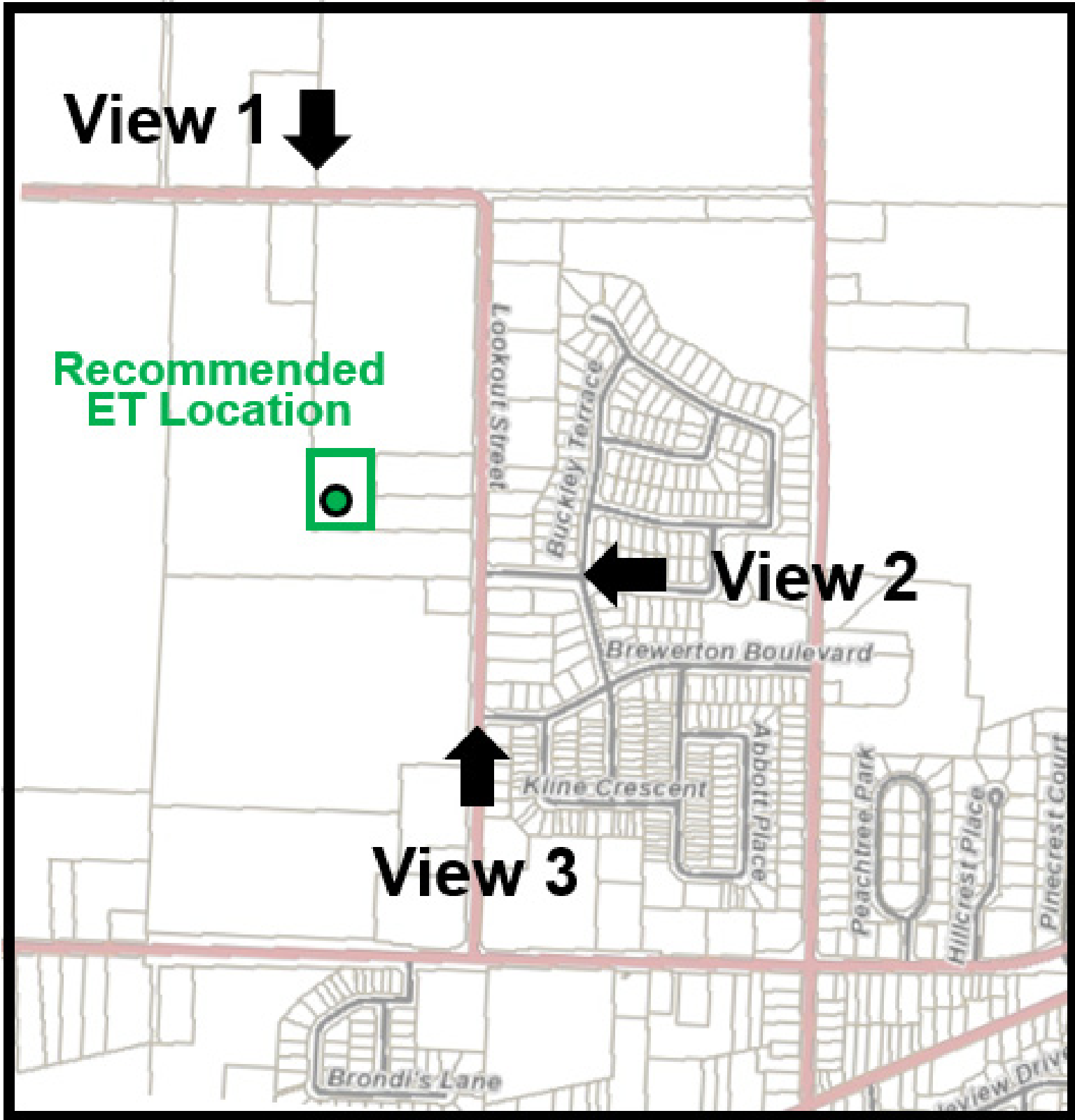
Recommendation pending:

- Stakeholder input
- Stage 2 Archaeological Assessment
- Geotechnical/hydrogeological study

Artistic Rendering of Recommended Location for New Elevated Tank



View 1 – Tice Road at Existing Driving Range Looking South



Key Map



View 2 – Marlene Stewart Drive and Near Buckley Terrace Looking West



View 3 – Lookout Street Near Brewerton Boulevard Looking North

Next Steps & Comments

The Project Team will be completing the field work for the archaeological and geotechnical investigations to confirm the preferred option prior to proceeding with the conceptual design.

Public Input	Opportunity	Anticipated Date
	Project File Report for Public Review	Winter 2019/2020

Questions or Comments?

Please complete a comment sheet this evening or submit comments to staff below. More information including copies of project notices and PIC materials can be found at:
<https://www.niagararegion.ca>

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