Pelham Elevated Tank Municipal Class Environmental Assessment and Enhanced Conceptual Design

Project File Report

FINAL

July 17, 2023

Prepared for:

RVA

Niagara Region

R.V. Anderson Associates Limited
2001 Sheppard Avenue East, Suite 300
Toronto ON M2J 4Z8 Canada
T 416 497 8600 F 855 833 4022
rvanderson.com

RVA 184328

July 17, 2023

Niagara Region
1815 Sir Isaac Brock Way
Thorold, Ontario
L2V 4T1

Attention: Gordon Bell, C.Tech., Senior Project Manager

Dear Mr. Bell:

Re: Pelham Elevated Tank Municipal Class EA and Enhanced Conceptual Design
Project File Report

Please find enclosed Final Project File Report for the above referenced project for your review. The report outlines the EA process followed, details of alternatives and their evaluation as well as the consultation process.

Please do not hesitate to contact the undersigned if you have any questions.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED

Rika Law, P.Eng., PMP
Project Manager

Pelham Elevated Tank Municipal Class Environmental Assessment and Enhanced Conceptual Design

Project File Report

FINAL

Niagara Region

RVA 184328

July 17, 2023

In Association With

Pelham Elevated Tank Municipal Class EA and Enhanced Conceptual Design Project File Report

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

EXECUTIVE SUMMARY

Following the Niagara Region Master Servicing Plan Update undertaken in 2016, a Municipal Class Environmental Assessment (Class EA) for a new Pelham Elevated Storage Tank (EST) and associated system upgrades commenced in May 2019. This Class EA was completed under a Schedule B process.

The objective of this Project File Report (PFR) is to document the results of the Class EA process pertaining to the identification, evaluation and recommendation of the preferred location of the elevated water storage tank and associated system upgrades. In addition, communication and consultation efforts with the public, government agencies, First Nation communities and other interested stakeholders are documented in the report.

Multiple location alternatives for the new EST were identified and evaluated, in addition to a review and evaluation of potential system upgrades to support the new EST. After communication with potentially impacted and interested stakeholders (public, government agencies and First Nations), the preferred location for the new EST was determined to be on the property south of the Golf Driving Range at 220 Tice Road.

The new EST will require construction of additional infrastructure on the site, such as an overflow pond to be used when the EST needs to be drained for maintenance or has an emergency overflow incident, storage shed and access road. System upgrades to support the new EST include a new dedicated transmission main from the existing Shoalts Drive Reservoir to the new EST, new pumps at the reservoir to fill the new EST, a new local watermain to connect the EST to provide water to the local system, and a new valve chamber(s) for pressure control and isolation of the new infrastructure. Once the new EST is operational, the existing Pelham EST and associated booster pumping station will be demolished.

Two (2) Public Information Centers (PICs) were undertaken in November 2019 and September 2021 to provide an opportunity for stakeholders to comment on the identified preferred location. Additionally, supporting studies including a Natural Environmental Investigation, Stage 1 and Stage 2 Archaeological Assessments, and a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was completed as part of the Class EA process. Further studies such as a topographic survey and geotechnical/ hydrogeological investigations will be completed as part of the conceptual/detailed design of the EST following the completion of this Class EA.

1.0 Introduction

1.1 Purpose of Study

In 2016, the Niagara Region (Region) updated its Master Servicing Plan (MSP) to identify, evaluate and select its preferred water and wastewater servicing strategies to meet the current and future servicing demands, up to 2041.

The MSP recommended the replacement of the existing Pelham elevated water storage tank and booster station with a new 6.0 mill**lion litre** (ML) elevated water storage tank to support the growing community of Pelham and improve the water pressure in the water distribution system. The MSP also recommended the upgrade of the existing pumps at the Shoalts Drive Reservoir/Pumping Station. The size of the new elevated tank was re-confirmed in the current MSP.

In 2019, the Region initiated the New Pelham Elevated Storage Tank Class Environmental Assessment (Class EA) to confirm the recommendations of the MSP, review and identify a preferred location for the new elevated storage tank (EST) and identify associated system upgrades so that the Region can proceed with the Detailed Design and Construction.

The objective of this Project File Report (PFR) is to document the results of the Class EA process pertaining to the identification, evaluation and recommendation of the preferred location and associated system upgrades. In addition, communication and consultation efforts with the public, government agencies, First Nation communities and other interested stakeholders are documented in the report.

1.2 Project Team

The Regional Municipality of Niagara (Region) retained R.V. Anderson Associates Limited (RVA) to undertake the Class EA. The Region also retained Archaeological Services Inc. (ASI) to undertake the Archaeological Assessment and the Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (Cultural Heritage Report).

RVA retained LGL Limited (LGL) to assist with the Natural Heritage Investigation.

1.3 Municipal Class Environmental Assessment Planning Process

The Municipal Class EA (Municipal Engineers Association, 2000, as amended in 2007, 2011 and 2015) outlines an approved planning process for municipal infrastructure projects, including water and wastewater projects. Municipal proponents can use the Class EA process to meet the requirements of the Ontario Environmental Assessment Act.

The Class EA process is illustrated in the Class EA **Figure 1-1** at the end of this section. The Class EA process includes mandatory requirements for public and regulatory agency input and provides for the evaluation of alternative solutions to a problem or opportunity.

The MCEA identifies three different categories or "schedules" of projects as follows:

Schedule A and A+ projects are limited in scale and have minimal adverse effects. These projects are approved and may proceed directly to implementation without any further steps in the Class EA process.

Schedule B projects have the potential for some adverse environmental effects and must be subjected to a screening process, involving consultation with the directly affected public and relevant government agencies to ensure that any concerns are addressed. If there are no outstanding concerns, then the proponent may proceed to implementation.

Schedule C projects have the potential for significant environmental effects and must proceed under the full planning and documentation procedures specified in the Class EA document. Schedule C projects require evaluation of alternative solutions and alternative design concepts of the preferred solution. The public and agencies are provided several opportunities throughout the process to provide input and comments.

1.4 Municipal Class Environmental Assessment Schedule

The New Pelham Elevated Tank Class EA was undertaken as a **Schedule B** project and included completion of Phases 1 and 2 of the Class EA process.

The procedure for a Schedule 'B' undertaking is indicated below. Further details of the MCEA process are provided in Section A.2 of the MCEA (2000, as amended in 2007, 2011 and 2015).

Phase 1	Identify the problem or opportunity.
Phase 2	Identify and evaluate alternative solutions to the problem by considering the existing environment and establishing the preferred solution, taking into account public and agency review input. Document the decisions in a Project File Report.
Notice of Completion	Upon completion of this Project File Report, a Notice of Completion is advertised and issued to the public and agencies interested in the project, for a 30-day review period, during which time, any comments or requests from stakeholders, agencies, or concerned parties will be addressed according to the procedures outlined in the Municipal Class EA Manual (2000, as amended in 2007, 2011, and 2015). In addition, a

request may be made to the Ministry of the Environment, Conservation and Parks (MECP) for an order requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered.

Implementation

Provided that no requests are made to the Minister of the Environment within the 30-day review period, or requests have been addressed, the project is approved and may proceed to detailed design, construction, operation and monitoring if specified. The project would still be subject to all applicable environmental regulations and approvals.

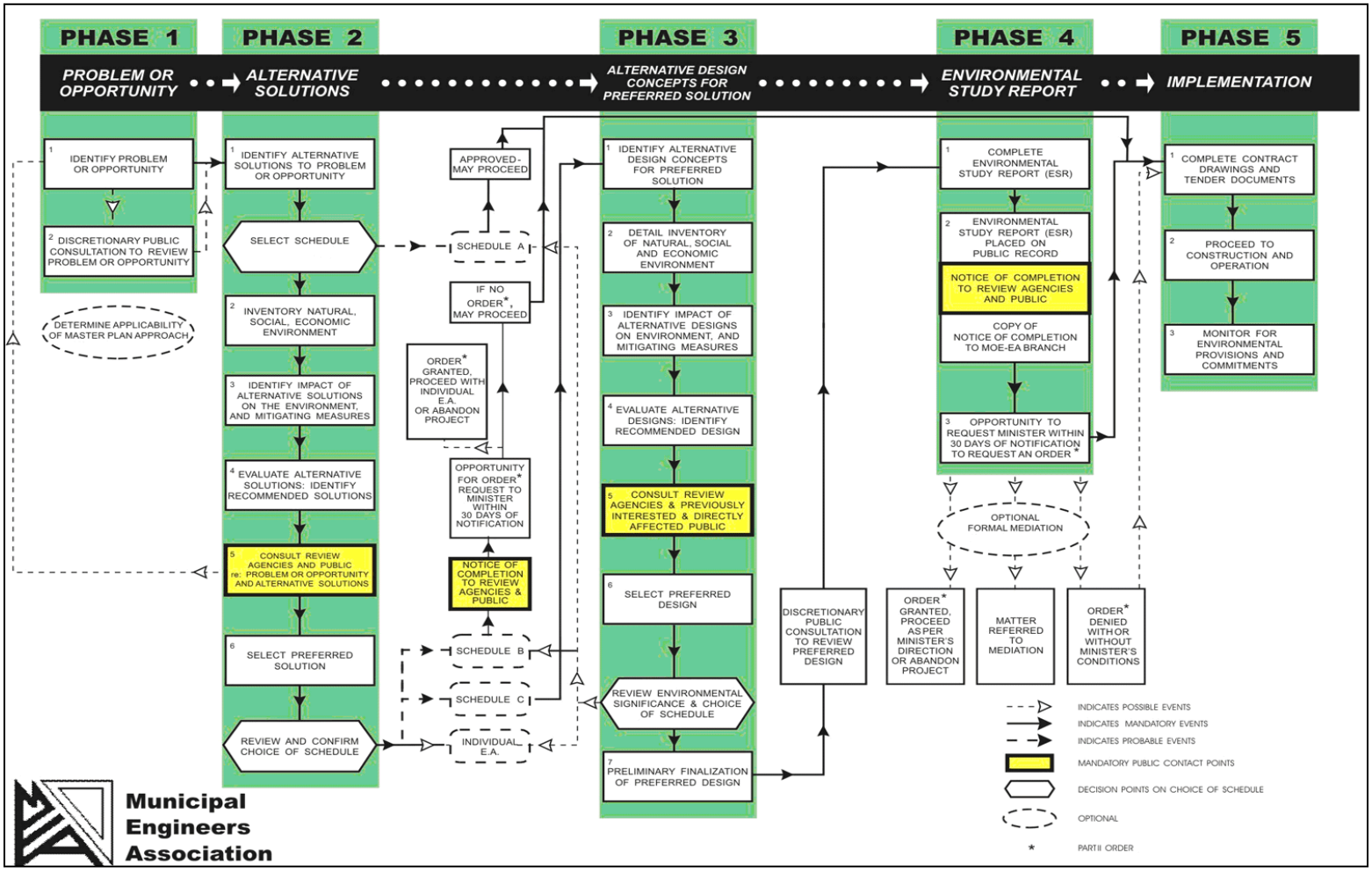


Figure 1-1 – Municipal Class Environmental Assessment Process

(Reference: Municipal Engineers Association. “Municipal Class Environmental Assessment”. October 2000, amended 2007, 2011 & 2015)

2.0 Existing Conditions

2.1 Planning and Policy Context

The following municipal and provincial planning policies are related to municipal water services and this Class EA:

2.1.1 Provincial Policy Statement (2014)

The 2020 Provincial Policy Statement (PPS) under the Planning Act, sets policy directions on the rules for land use planning in Ontario. It covers policies about managing growth, using and managing natural resources, protecting the environment, along with public health and safety. The PPS supports the provincial goals related to land using planning, growth management, intensification, and infrastructure planning while minimizing the cost to develop. Municipal planning decisions are required to be consistent with the PPS.

This Class EA study follows the PPS under Policy 1.6.6, which states key planning objectives for water services shall:

- Direct and accommodate forecasted growth that promotes efficient use and optimization of existing municipal sewage services,
- Ensure that systems provided can be sustained by the water resources, prepares for impacts by changing climate,
- Be feasible and financially viable over their lifecycle,
- Protect human health and safety, protect natural environment,
- Promote water conservation and water use efficiency, and
- Integrate servicing and land use considerations in all stages of the planning process.

2.1.2 A Place to Grow Growth Plan for the Greater Golden Horseshoe (2019)

The 2020 Growth Plan for the Greater Holder Horseshoe (Growth Plan) was prepared under A Place to Grow Act (2005). The purpose of the plan was to provide a long-term framework for implementing Ontario's vision for managing population growth in the Greater Golden Horseshoe. The Growth Plan included a population forecast of 1,300,000 people and an employment forecast of 460,000 jobs to the year 2051.

The Growth Plan works in conjunction with the Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plan that builds the Provincial Policy Statement (PPS). The goal of the Growth Plan is to support the PPS to establish a land use planning framework for the Greater Golden Horseshoe (GGH).

Schedule C of the Growth Plan forecasts an increase in population and employment in the Niagara Region to be 674,000 and 272,000 by 2051, respectively. This Class EA satisfies the requirements of the Growth Plan in accordance with the following sections:

1. Policy 3.2.6.2 – Municipal water and wastewater systems and private communal water and wastewater systems will be planned, designed, constructed, or expanded in accordance with the following:
   - Opportunities for optimization and improved efficiency within existing systems will be prioritized and supported by strategies for energy and water conservation and water demand management.t
   - Will be planned, designed, and constructed to service growth in a manner that supports the achievement of the minimum intensification and density targets in the Growth Plan.
2. Policy 3.2.7 – Stormwater management plans for the sites would be developed in accordance with this section.
3. Policy 4.2.3 - Outside of settlement areas, development or site alteration is not permitted in key natural heritage features that are part of the Natural Heritage System for the Growth Plan or in key hydrologic features, except for:
   - Activities that create or maintain infrastructure authorized under an environmental assessment process.

The Growth Plan recognizes that collective efforts are required to co-ordinate investments for water infrastructure to service future growth in a financially sustainable manner. Municipalities are responsible for the cost of providing and maintaining municipal water systems, and these are to be planned, designed, constructed, or expanded in a sustainable manner that supports growth while mitigating negative impacts on water resource systems including the quality and quantity of water.

Along with the long-term forecast, the Growth Plan includes direction on where and how growth should occur. This includes policies that require the vast majority of growth to be directed to Settlement Areas that have a delineated built boundary, have existing or planned municipal water and wastewater systems, and that can support the achievement of complete communities. The Growth Plan also limits growth in rural settlements, areas that do not have existing or planned municipal water and wastewater systems, and locations that are in the Greenbelt Plan area. More specifically, policy 2.2.8.3 (k) limits Settlement Area Boundary Expansion into the Greenbelt Plan Area to a five per cent increase in the geographic size of the current settlement area boundary, up to a maximum of 10 hectares, of which only 50 per cent of the lands can be used for residential development.

This Class EA supports the policy direction within the Ontario's Growth Plan by providing additional water services for the existing Town of Pelham to meet the growing demand and support growth within the urban settlement area. Water conservation initiatives will be addressed by the Region outside of this project.

2.1.3 The Greenbelt Plan (2017)

The Greenbelt Plan encompasses the Niagara Escarpment Plan (NEP) Area, the Oak Ridges Moraine Area, the Parkway Belt West Plan Area, lands designated as Urban River Valley, and lands designated as Protected Countryside across the Greater Golden Horseshoe.

The Greenbelt Plan also works together with the Growth Plan, the NEP and the Oak Ridges Moraine Conservation Plan (ORMCP) to build on the PPS to establish a land use planning framework for the GGH. Figure 2-1 demonstrates that parts of the Town of Pelham fall within the Greenbelt Area.

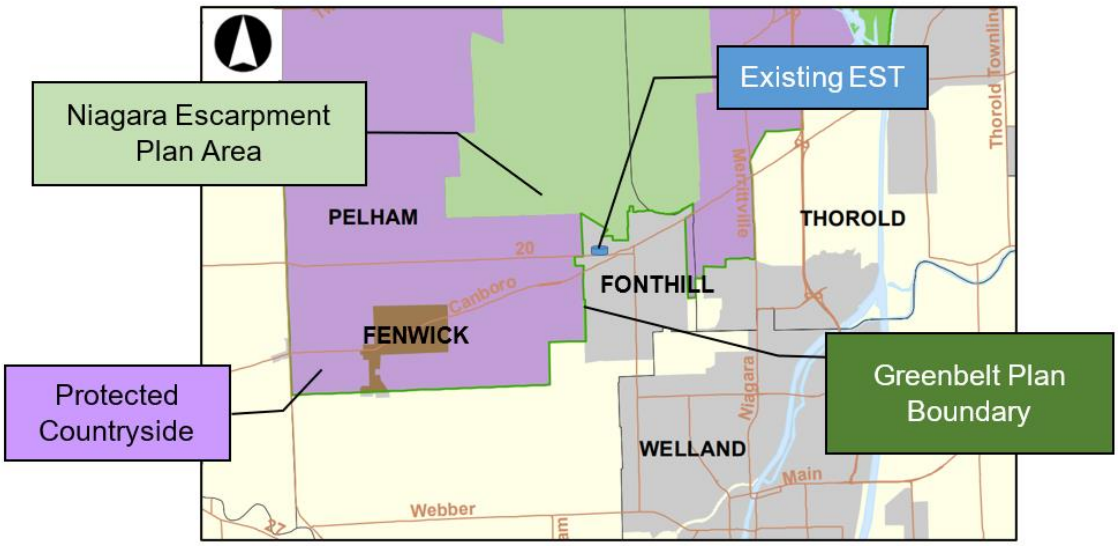


Figure 2-1 – Excerpt from Greenbelt Plan (2017) Schedule 2

This Class EA is consistent with the Greenbelt Plan under the following:

1. Policy 4.2.1.1 – The objective of this Class EA supports the Town of Pelham and the additional growth anticipated.
2. Policy 4.2.1.2 – The objective of this Class EA aligns with the requirements and this policy was considered as part of the evaluation of the preferred alternatives of this project:
   - Minimizing the amount of Greenbelt, and particularly the Natural Heritage System and Water Resource System, traversed and/or occupied,

- Minimizing negative impacts on the existing landscape, including impacts caused by light, intrusion, noise and road salt,
- Avoiding key natural heritage features, key hydrogeologic features or key hydrogeologic areas unless need has been demonstrated and it has been established that there is no reasonable alternative,
- Avoiding specialty crop areas and other prime agricultural areas, unless the need has been demonstrated and it has been established that there is no reasonable alternative.

3. Policy 4.2.2.2 – The extension of the municipal water services will only be used within the existing settlement area boundary to serve existing uses. Planning, design and construction of water infrastructure to be carried in accordance with Policy 3.2.6 of the Growth Plan.
4. Policy 4.2.3 – Stormwater Management plans for the preferred alternatives would be developed in accordance with this policy.

This Class EA study aligns with the requirements of the Greenbelt Plan by considering the designated areas and policy direction in the identification and evaluation of alternatives.

2.1.4 The Niagara Escarpment Plan (2017)

The Niagara Escarpment includes a variety of topographic features and land uses extending 360 kilometres from Queenston on the Niagara River to the islands off Tobermory on the Bruce Peninsula. The Niagara Escarpment Plan (NEP) and Niagara Escarpment Planning and Development Act seek to strike a balance between development, protection, and the enjoyment of the escarpment and the resources it supports. The NEP area is also included under the Greenbelt Plan and is within the framework set out by the Growth Plan for the GGH, and PPS.

In the Town of Pelham, the communities of Fonthill and Fenwick in general fall outside of the NEP area, with the exception of some parts of Fonthill around Haist Street, which are within the Escarpment Natural Area (Figure 2-2).

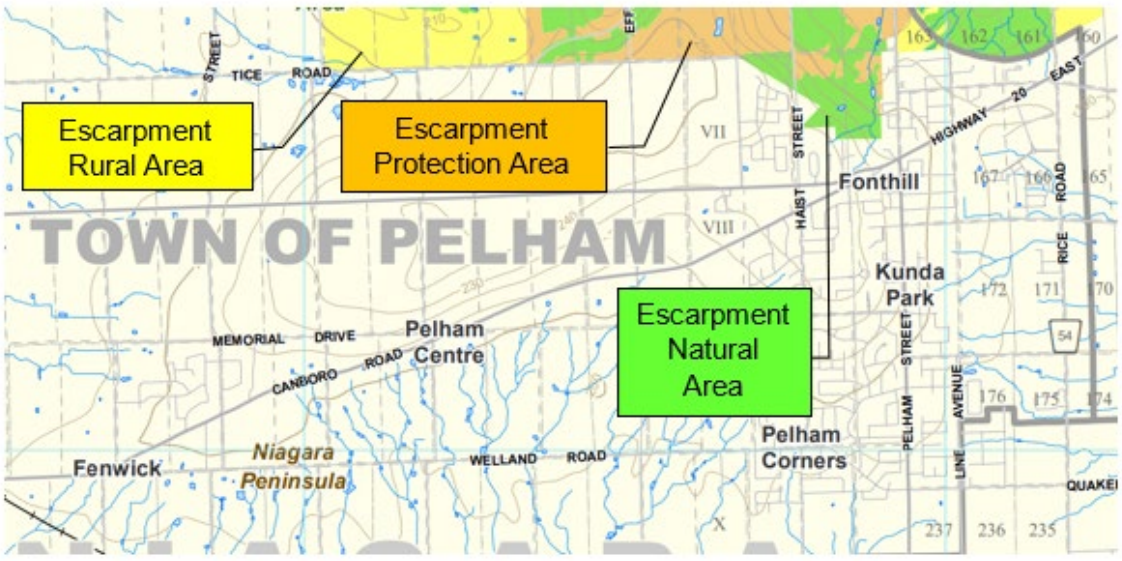


Figure 2-2 – Excerpt from NEP Plan: Niagara Escarpment Plan Area

The Class EA is consistent with the NEP based on the following policies:

1. Policy 2.7.2 – Development is not permitted in key natural heritage features with the exception of the following, which may be permitted subject to compliance with all other relevant policies of this Plan:

    - infrastructure, where the project has been deemed necessary to the public interest and there is no other alternative.
    - If in the opinion of the implementing authority, a proposal for development within 120 metres of a key natural heritage feature has the potential to result in a negative impact on the feature and/or its functions, or on the connectivity between key natural heritage features and key hydrologic features, a natural heritage evaluation will be required that:
        a) Demonstrates that the development, including any alteration of the natural grade or drainage, will protect the key natural heritage feature or the related functions of that feature;
        b) Identifies planning, design and construction practices that will minimize erosion, sedimentation and the introduction of nutrients or pollutants and protect and, where possible, enhance or restore the health, diversity and size of the key natural heritage feature;
        c) Determines the minimum vegetation protection zone required to protect and where possible enhance the key natural heritage feature and its functions; and

d) Demonstrates that the connectivity between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained and where possible enhanced for the movement of native plants and animals across the landscape. except with respect to a key natural heritage feature that is solely the habitat of endangered species or threatened species, which is subject to Part 2.7.8.

2. Policy 2.12 – The objective is to design and locate infrastructure so that the least possible impact occurs on the Escarpment environment and to encourage green infrastructure and low impact development, where appropriate.

   - Infrastructure shall be sited and designed to minimize the negative impact on the Escarpment environment. Examples of such siting and design considerations include, but are not limited to the following:
     a) Blasting, grading and tree removal should be minimized where possible through realignment and utilization of devices, such as curbs and gutters, retaining walls and tree wells;
     b) Finished slopes should have grades no steeper than 50 per cent (1:2 slope) and be planted; large cuts should be terraced to minimize surface erosion and slope failure;
     c) Site rehabilitation should use native species of vegetation and protect and enhance the natural environment;
     d) A development setback from the Escarpment brow shall be established by the implementing authority to minimize visual impacts; and
     e) Visual impacts from infrastructure should be minimized by siting, structural design, colouration and landscape planting and/or vegetation screening.

3. Policy 2.13.A - Development shall ensure the protection of the scenic resources of the Escarpment.

4. Policy 2.13.B - Where a visual impact on the scenic resources is identified as a concern by the implementing authority, a visual impact assessment shall be required.

2.1.5 Niagara Region Official Plan (2022)

Region's 2022 Official Plan (ROP) forecasted total population of Town of Pelham to be 28,830 in 2051. This forecasted growth is planned via both intensification of existing areas, and new green field growth through development. For the Town of Pelham, the residential intensification target (percent of total annual development) is 25%. The ROP also notes that local municipalities will develop their own residential intensification targets and strategies,

which may exceed these minimum standards, and incorporate the targets into their official plans.

Relevant policies in the ROP include those regarding the provision of adequate water, sewer, and stormwater services to meet existing and future needs as a result of existing and planned developments in the service area.

1. Policy 2.2.1: Development in urban areas will integrate land use planning and infrastructure planning to responsibly manage forecasted growth and to support:

    a. built forms, land use patterns, and street configurations that minimize land consumption, reduce costs of municipal water and wastewater systems/services, and optimize investments in infrastructure to support the financial well-being of the Region and Local Area Municipalities

    b. orderly development in accordance with the availability and provision of infrastructure and public service facilities

2. Section 3.1 of the ROP and associated policies for the natural heritage system.

3. Section 5.2 of the ROP contains additional policies relative to infrastructure.

This Class EA study aligns with the requirements of the ROP by considering the policies and requirements of the ROP in the identification and evaluation of alternatives.

2.1.6 Town of Pelham Official Plan (2014)

The Town of Pelham Official Plan notes Regional growth studies forecast population growth up to 7,600 new residents by 2031 within the settlements of Fonthill and Fenwick absorbing almost all new residential and employment growth. This equates to an annual growth rate of 1.8%.

The Plan identifies a forecasted housing growth of 3,000 units by 2031, with approximately 80% being lower density dwellings, and 20% being medium and higher density units. The Plan also identifies a forecasted employment growth of 1,800 new jobs by 2031.

For water and sewer servicing in Fonthill and Fenwick, the Plan identifies the provision of water and wastewater services is a shared responsibility with the Region, however, the Town is responsible for local water and wastewater services in the municipality. Full municipal sewage services and water services are required for the servicing of development in the Town's settlements of Fonthill and Fenwick.

The Plan outlines policies and requirements for development within the Town of Pelham, such as stormwater management reports, built heritage and cultural landscapes, archaeological assessment requirements, etc.

Finally, the Plan also discusses the development policies related to the Fonthill-Kame Delta Area of Natural and Scientific Interest (ANSI). This portion of the Official Plan has been deferred for pending future approval by the Ontario Municipal Board, however notes:

- Development and site alteration shall not be permitted within or adjacent to the Fonthill Kame-Delta ANSI unless an Environmental Impact Study (EIS) demonstrates that there will be no negative impacts on the feature or its ecological function. Adjacent lands are defined as those lands within 50 metres of the confirmed boundary of the Fonthill-Kame Delta ANSI.
- The EIS will be completed in accordance with Section C7 of this Plan and will specifically propose recommendations on how to avoid grading areas containing landform features, and how to maintain the scientific and educational values of the ANSI, such as the protection of important viewscapes.
- Approval of an EIS shall involve the Town and the Region in consultation with the Ministry of Natural Resources. Lands which comprise the Fonthill Kame-Delta ANSI shall be zoned in a manner that restricts site alteration and development.
- Applications for development or site alteration shall require a zoning amendment and/or site plan approval which shall be accompanied by the above-mentioned EIS.

This Class EA study aligns with the requirements of the Town of Pelham's Official Plan by considering the policies and requirements of the ROP in the identification and evaluation of alternatives.

2.1.7 Niagara Region Water and Wastewater Master Servicing Plan Update

In 2016, the Region completed a Water and Wastewater Master Servicing Plan (MSP) update which reviewed and developed water and wastewater servicing strategies for urban settlement areas within the Region. The MSP was updated based on population and employment growth forecasts using a 2041 planning horizon. Table 2-1 presents 2041 population forecasts for areas serviced by the Pelham Elevated Tank, including Fenwick, Ridgeville, and West Fonthill (Refer to Section 2.3.1 for Pelham service area and pressure zones). As part of this Class EA, the Region provided updated population with an additional 3,036 population to Pelham in 2041. To be conservative, it was assumed that the new EST would also service the water demands of all additional 3,036 persons. In summary, the population forecast for areas serviced by the Pelham Elevated Tank in 2041 is 15,243, as shown in Table 2-1.

In November 2022, the Region provided population growth forecasts for areas serviced by the Pelham Elevated Tank, including Fenwick, Ridgeville, and West Fonthill from a new ongoing MSP update with a planning horizon to 2051 (Table 2-1). The total population

serviced by the new Pelham EST in 2051 is 13,156. It should be noted that the Region is still in the midst of updating the MSP, thus the 2051 population data is subject to change.

Both scenarios were considered as part of this Class EA to determine the required water storage.

Table 2-1- Forecasted Population for Areas Serviced by the Pelham Elevated Tank

Location	2041 Population (Residential and Employment) from 2016 MSP	2051 Population (Residential and Employment) from ongoing MSP
Fenwick	3,611	3,764
Ridgeville	3,552	2,359
Fonthill West	5,224	7,033
Additional population in 2041 provided by the Region as part of this Class EA	3,036	
Total	15,243	13,156

2.2 Study Area

Town of Pelham is located in the centre of Niagara Region. It's bounded by the Township of Wainfleet to the south, the Township of West Lincoln to the west, the cities of Welland and Thorold to the east, and the Town of Lincoln and City of St. Catharines to the north, as shown in Figure 2-3.

Figure 2-3 – Regional Map of Niagara - Niagara Region Official Plan 2014

As shown in Figure 2-4, Town of Pelham is comprised of two main urban settlement areas: the Fonthill Settlement Area and the Fenwick Settlement Area. Pelham also has a rural

settlement area (North Pelham) and various hamlets and communities such as Effingham and Ridgeville.

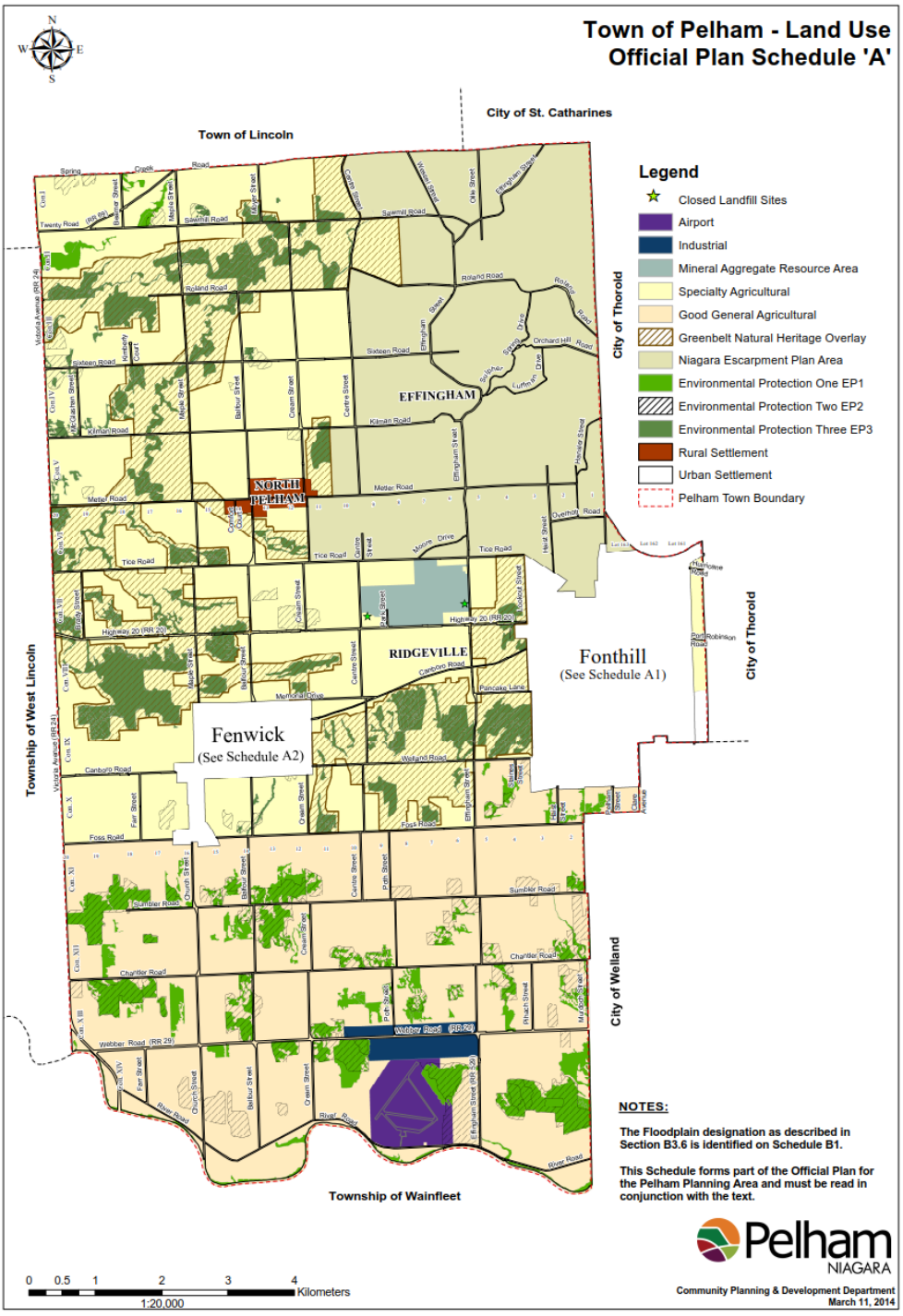


Figure 2-4 – Town of Pelham Boundary – Town of Pelham Official Plan 2014

The Study Area for this Class EA is presented in Figure 2-5 below, taken from the 2016 Niagara Region MSP. The Study Area comprises of the current Pelham Service Area outlined in blue as well as the area immediately surrounding the Pelham Service Area.

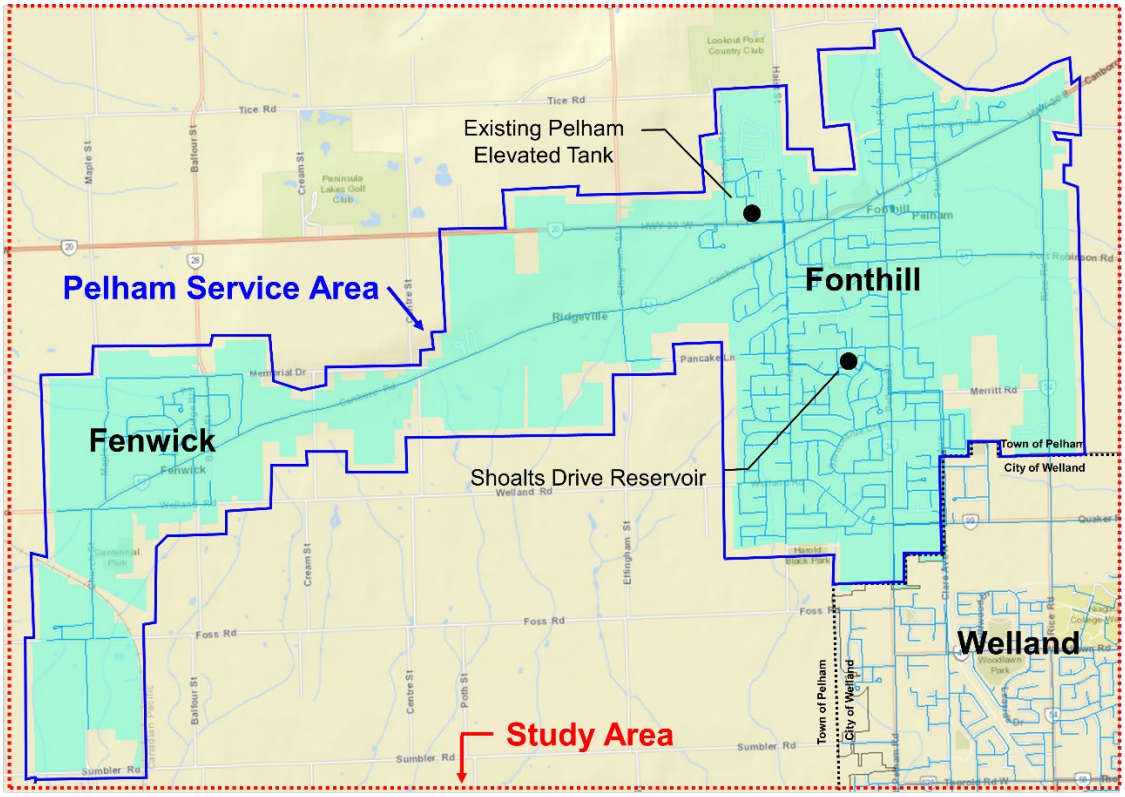


Figure 2-5 – Overview of the Study Area & Pelham Service Area (2016 Niagara Region MSP)

2.3 Overview of the Existing Water Supply System

2.3.1 Pelham Service Area and Infrastructure

The Pelham service area supplies drinking water to both the Fonthill and Fenwick urban settlement areas via regional (Niagara Region) and local (Town of Pelham) infrastructure. The Pelham service area is comprised of four pressure zones due to the elevation changes through the area:

- Pressure Zone 248 – East Fonthill
- Pressure Zone 272 – West Fonthill
- Pressure Zone 268 – Ridgeville (between Fonthill and Fenwick)
- Pressure Zone 247 – Fenwick

The Pelham service area is part of the overall Welland water system, and it is currently serviced with municipal water supply via the Welland Water Treatment Plant (WTP), through a network of water distribution mains, pumping stations and storage facilities:

- Treated drinking water from the Welland WTP is pumped to the Shoalts Drive Reservoir, located at 5 Shoalts Drive in Fonthill.
- Water from the Shoalts Drive Reservoir is then pumped to the Pelham service area via both low lift and high lift water distribution pumps from the pumping stations at the reservoir site.
- The low lift pumps supply water directly to one of the four pressure zones (Zone 248) through the local distribution system in Fonthill, while the high lift pumps supply water to the existing Pelham EST, located at 177 Highway #20 West in West Fonthill (Zone 272).
- The existing Pelham EST and booster pumping station supply water to the remaining three pressure zones from Fonthill to Fenwick (Zones 272, 268, and 247) via a series of pressure reducing valves.

Figure 2-6 presents the pressure zone system in Pelham.

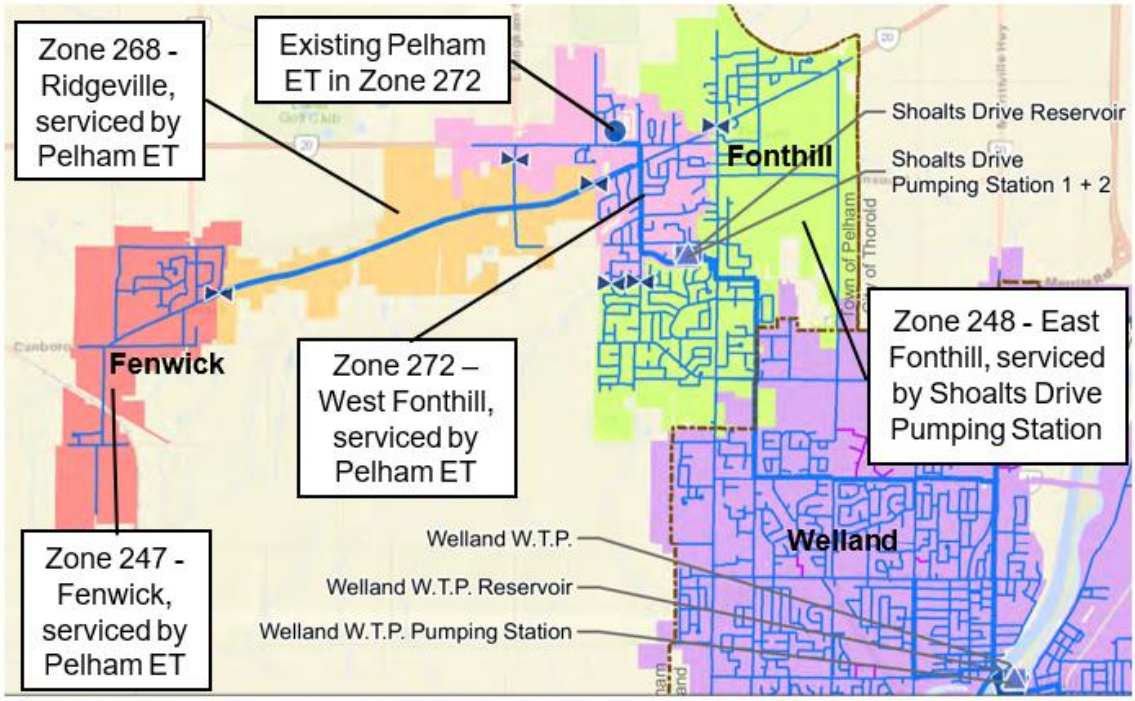


Figure 2-6 – Pelham Pressure Zones – Niagara Region 2016 Water and Wastewater Master Servicing Plan Update

2.3.2 How the Water System Works

Typically, an EST is located at a high or the highest elevation in the service area with all the homes at lower elevations. This allows the water stored in the EST to flow to each home using gravity in most cases, rather than by pumping. For water pressure, the greater the height difference between the water level in the EST and the home, the more water pressure is available to that house. For example, a home at the bottom of the hill will have a higher water pressure than a home at the top of the hill. The pressures at homes in a service area are typically set within a certain pressure range.

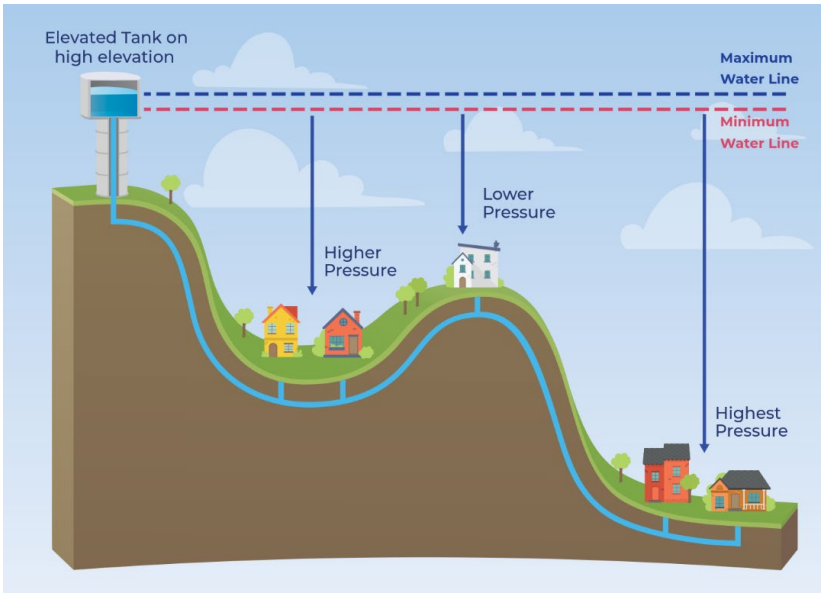


Figure 2-7 – How the Water System Works

In the case of the existing Pelham EST, a booster station at the base of the existing EST is required to service the houses near the existing EST to provide enough pressure. Whereas the houses in other parts of the water system, at a lower elevation than the EST, have enough pressure without a booster station. Due to the large variation in elevations throughout the service area and the current elevation of the Pelham EST, there are different pressure zones in the Pelham water system.

2.3.3 System Pressure Ranges & Fire Flows

As per the 2016 MSP, the existing Pelham service area has areas of localized low pressures or pressure limitations, areas with fire flow capacity limitations, and deficits in existing and future storage and pump capacities.

During this Class EA, the Region requested that the EST be designed to provide water at the Region's preferred pressure range of 345 kPa to 551 kPa (50 to 80 psi) throughout the service area, without the need for a booster pumping station at the EST. While this is the

preferred pressure range for Niagara Region, MECP does have an acceptable pressure range of 276 kPa (40 psi) to the home at the highest point in the water service area, and not more than 689 kPa (100 psi) to the house at the lowest point in the water service area. Any new system upgrades will need to achieve pressures within the Region's preferred pressure range, or at the MECP's acceptable pressure range where the Region's preferred pressure range is not achievable.

In terms of fire flow, the goal is to improve the overall fire flow capacities within the Pelham service area such that the transmission main would provide at least 250 L/s, with a minimum working pressure of 30 psi.

2.4 Water Demands and Water Storage Needs

2.4.1 Storage Capacity of the Existing EST

The storage capacity of the existing EST is 2.3 ML. As per the 2016 MSP, the storage capacity of the existing EST is not sufficient for the growing community of Pelham. In addition, it cannot meet the Region's preferred pressure range at the higher elevations in northwest Fonthill without the need for a booster pumping station.

A copy of the population, water demands, and storage capacity calculations discussed in this section are available in Appendix A.

2.4.2 Water Storage Requirement in 2041 as per 2016 MSP

As discussed in Section 2.1.7 and Section 2.3.1. The new EST will service only a portion of Pelham, namely Fonthill West (Pressure Zone 272), Ridgeville (Pressure Zone 268), and Fenwick (Pressure Zone 247). Water demands from 2016 MSP for these three areas are summarized in Table 2-2.

The additional 3,036 population in Pelham Elevated Tank service area in 2041 (provided by the Region as part of this Class EA) is approximately equal to the 2041 population of Fenwick (Pressure Zone 247) from the 2016 MSP. As such, the average day water demand and maximum day water demand for the additional 3,036 persons forecasted by the Region were assumed to be 1.1 MLD and 1.6 MLD respectively for 2041.

For the Town of Pelham, the 2016 MSP evaluated three options to support the 2041 growth forecasts:

- Alternative 0 – Do Nothing (Baseline Scenario)
- Alternative 1 – New Storage in Pelham
- Alternative 2 – Upgrades at Shoalts Drive High Lift and Low Lift Pumping Stations
- Alternative 3 – Optimize Pumping and Storage Upgrades in Pelham

Ultimately, the 2016 MSP recommended Alternative 3, the optimization of pumping and storage upgrades in Pelham through the replacement of the existing Pelham EST and booster station with a new EST. This will support the growing community of Pelham and improve the water pressure in the water distribution system. Upgrades of the existing pumps at the Shoalts Drive Reservoir/Pumping Station are also part of this recommended alternative.

Table 2-2 – Forecasted Population and Water Demands for the New EST as per 2016 MSP

Location	2041 Population	2041 Average Day Demand (MLD)	2041 Maximum Day Demand (MLD)
Fenwick	3,611	1.1	1.6
Ridgeville	3,552	0.6	0.9
Fonthill West	5,224	1.5	2.3
Forecasted Population Increase	3,036	1.1	1.6
Total	15,243	4.30	6.40

The total required storage volume to service the 2041 forecasted population and water demands was calculated based on the Ministry of the Environment, Conservation and Parks (MECP) Design Guidelines for Drinking Water Systems (last updated May 15, 2019). Table 2-3 below shows the total storage volume required to be 5.84 ML, with the required fire flow, equalization, and emergency storage volumes. Based on the total water storage capacity required of 5.84 ML in 2041, there would be a storage deficit of 3.54 ML if the existing EST is not replaced with a larger storage tank.

Table 2-3 – Calculation of Capacity of New EST as per 2016 MSP

Description	Storage Volume (ML)
Fire Storage (A)	3.07
Equalization Storage (B)	1.60
Emergency Storage (C)	1.17
Total Required Storage (A+B+C)	5.84[1]

[1] For reference, the calculated storage volume to suit the updated forecasted population to 2041 is 5.84 ML, as compared to 4.47 ML from 2016 MSP.

Ultimately, the 2016 MSP recommended Alternative 3, the optimization of pumping and storage upgrades in Pelham through the replacement of the existing Pelham EST and booster station with a new EST. This will support the growing community of Pelham and improve the water pressure in the water distribution system. Upgrades of the existing pumps at the Shoalts Drive Reservoir/Pumping Station are also part of this recommended alternative.

Table 2-2 – Forecasted Population and Water Demands for the New EST as per 2016 MSP

Location	2041 Population	2041 Average Day Demand (MLD)	2041 Maximum Day Demand (MLD)
Fenwick	3,611	1.1	1.6
Ridgeville	3,552	0.6	0.9
Fonthill West	5,224	1.5	2.3
Forecasted Population Increase	3,036	1.1	1.6
Total	15,243	4.30	6.40

The total required storage volume to service the 2041 forecasted population and water demands was calculated based on the Ministry of the Environment, Conservation and Parks (MECP) Design Guidelines for Drinking Water Systems (last updated May 15, 2019). Table 2-3 below shows the total storage volume required to be 5.84 ML, with the required fire flow, equalization, and emergency storage volumes. Based on the total water storage capacity required of 5.84 ML in 2041, there would be a storage deficit of 3.54 ML if the existing EST is not replaced with a larger storage tank.

Table 2-3 – Calculation of Capacity of New EST as per 2016 MSP

Description	Storage Volume (ML)
Fire Storage (A)	3.07
Equalization Storage (B)	1.60
Emergency Storage (C)	1.17
Total Required Storage (A+B+C)	5.84[1]

[1] For reference, the calculated storage volume to suit the updated forecasted population to 2041 is 5.84 ML, as compared to 4.47 ML from 2016 MSP.

3.0 Phase 1: Problem or Opportunity

3.1 Problem and Opportunity Statement

As part of Phase 1 in the Class EA process, the problem and/or opportunity situation must be identified. Given that the existing EST is not sufficient for the growing community of Pelham and cannot meet the desired system pressures at the higher elevations in northern Fonthill without help from the existing booster pumping station, a new EST at a higher elevation to replace the infrastructure would address these issues. As such, the Problem and Opportunity Statement has been identified as:

The Pelham Service Area requires improvements to meet the needs of the growing community and expected increasing growth to 2041 and beyond. The need for these improvements was originally identified through the Niagara Region Water and Wastewater Master Servicing Plan in 2016:

- Construction of a new EST and associated system upgrades to provide opportunities for system optimization.
- Improve the storage and pressure in the Pelham Water System

The purpose and goal of this Class EA is to:

- Identify and evaluate potential sites for the new EST
- Identify necessary improvements to the existing water service area
- Select a preferred site and associated system upgrades for the new EST considering social, economic, technical, cultural, and environmental factors.

4.0 Phase 2: Alternative Solutions (Part 1)

4.1 Identification of Alternative Solutions

As mentioned in Section 2.1, the 2016 MSP recommended a new 6.0 ML EST to replace the existing EST. The MSP considered one location for the new EST, which was on the same site as the existing EST. As part of this Class EA, additional alternative site locations were reviewed in addition to the existing EST site. The following is a summary of the long list of alternative locations for the new EST:

- Baseline – "Do Nothing" Alternative
- Alternative 1 – Existing EST Location
- Alternative 2A – 1524 Lookout Street
- Alternative 2B – 1542 Lookout Street
- Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)
- Alternative 4 – 1621 Lookout Street (Bell Mobility Inc. communications tower property)
- Alternative 5 – Existing Communications Tower location at Tice Road and Effingham Street
- Alternative 6 – Existing Lafarge Quarry
- Alternative 7 – Haist Street, North of Peachtree Park Crescent

Refer to Figure 4-1 for a map showing the long list of alternative locations.

4.1.1 Baseline – Do Nothing

This is the baseline scenario where the existing EST would remain in place and a new EST would not be constructed. For this baseline scenario, the additional growth and water demands will be satisfied by additional pumping from Shoalts Reservoir pumps to provide water to the Pelham Water System. Since this alternative does not satisfy the Problem and Opportunity Statement, this alternative was not carried forward to the short list.

4.1.2 Alternative 1 – Existing EST Location

This property is owned by the Region as the existing EST is located here. While this location is also the closest to the regional transmission main, it does not have sufficient space to facilitate the construction of a new EST while keeping the existing EST in operation until the new EST is ready for service. This site is also shared with the Fire Department and its operations must remain unhindered. As such this location was not carried forward to the short list.

4.1.3 Alternative 2A – 1524 Lookout Street

The property is currently zoned as residential and is surrounded by other residential and agricultural properties. This location is near the regional transmission main, however does not have adequate space to construct a new EST. Based on this, Alternative 2A was not carried forward to the short list.

4.1.4 Alternative 2B – 1542 Lookout Street

The property is currently zoned as residential and is surrounded by other residential and agricultural properties. This location would have adequate space for the new EST and is near the regional transmission main. Alternative 2B was carried forward to the short list for further evaluation.

4.1.5 Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)

This area has adequate space for a new EST and associated infrastructure, is currently zoned as agricultural with an amendment to allow for the Golf Course. It is currently vacant, and the property owner is willing to sell the required land. As such, Alternative 3 was carried forward to the short list for further evaluation.

4.1.6 Alternative 4 – 1621 Lookout Street

An existing communications tower is located on this site which is owned and operated by Bell Canada. This location was determined to have adequate space, a high ground elevation and is located near the regional transmission main. Based on this, Alternative 4 was carried forward to the short list for further evaluation.

4.1.7 Alternative 5 – Existing Communications Tower location at Tice Road and Effingham Street

An existing communications tower is located on this site. This location is furthest from the regional transmission main compared to the other site locations. Additionally, there is insufficient space at this site to build a new EST. As such, this location was not carried forward to the short list.

4.1.8 Alternative 6 – Existing Lafarge Quarry

This location was determined to have adequate space; however, it is further away from the existing Regional water transmission main and is subject to potential impacts from quarry activities. In discussion with Lafarge, they were not open to selling a portion of their lands to the Region for a new elevated tank as the two uses may impact each other. Based on this, this location was not carried forward to the short list.

4.1.9 Alternative 7 – Haist Street, North of Peachtree Park Crescent

This area has been newly developed into a residential neighbourhood and does not have sufficient space to build a new EST. As such, this location was not carried forward to the short list.

4.1.10 Short List of Alternative Solutions

The short list of alternative solutions was determined to include the following sites:

- Alternative 2B – 1542 Lookout Street
- Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)
- Alternative 4 – 1621 Lookout Street (Existing Bell Tower Site)

Figure 4-1 shows the location of the alternative locations considered.

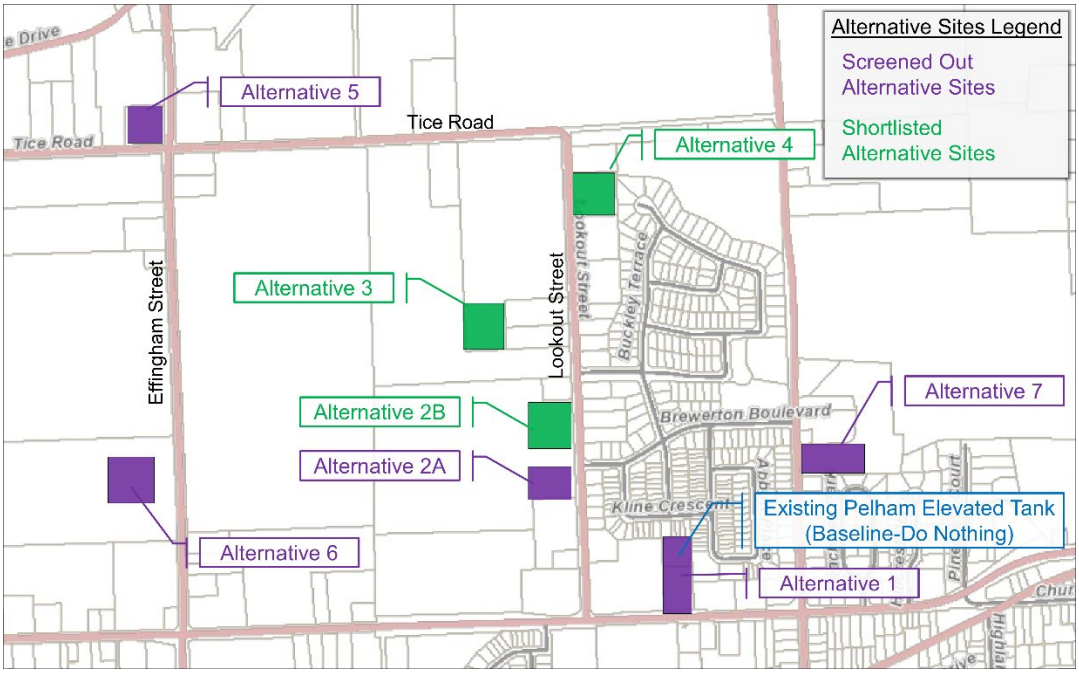


Figure 4-1 – Map of Preliminary EST Sites Screened for Short List

4.2 Supporting Study

Natural Environment Investigations were conducted for short-listed alternatives. Preliminary review of archaeological potential, built heritage resources, and cultural heritage landscapes were conducted for the short-listed alternatives based on previous assessments and land uses at the site. Detailed review of archaeological potential, built heritage resources, and cultural heritage landscapes were carried out for the preferred alternative only since the field work is intrusive and is difficult to be conducted on properties not owned by the Region without the property owner's permission.

4.2.1 Natural Environmental Investigation

A Natural Sciences Report was completed by LGL Limited to document the desktop assessment of the Study Area and subsequent field investigations of the short-listed alternative solutions (Alternative 2B, 3 and 4). A summary of the findings of the desktop and field investigations is presented below.

4.2.1.1 WILDLIFE AND WILDLIFE HABITAT

For all three of the short-listed alternatives, bird activity was present on site during LGL's site visit. Timing windows for nesting and breeding birds and mitigation for vegetation removals during these windows should be followed to mitigate potential impacts.

Barn swallows were observed on site for Alternatives 2B and Alternative 3, which are classified as Species of Conservation Concern. As no existing buildings on these sites are proposed for removal, there are no impacts anticipated to the breeding ability of the barn swallows. The location of the new EST at these sites is likely within the General Habitat – Category 3 for the barn swallows. Category 3 habitat includes the area between 5 m and 200 m of the nest and has a high tolerance to alteration. Barn Swallows depend on this area for various life processes including rearing, feeding, and resting. Activities in general habitat can continue as long as the function of these areas for the species is maintained and individuals of the species are not killed, harmed, or harassed.

4.2.1.2 WOODED AREAS, TREES, AND VEGETATION

An existing wooded area was noted on the west side of the property for Alternative 3. This wooded area is considered Core Natural Heritage Environmental Protection Area and an Environmental Conservation Area. The wooded area disturbance of this area construction should be avoided, with appropriate mitigation measures to be implemented.

Black Oak and Pignut Hickory trees were found along the forest edge of Alternative 4. Both species of trees are considered locally rare, and impacts should be avoided.

4.2.1.3 AREAS OF NATURAL AND SCIENTIFIC INTEREST (ANSI)

Alternatives 2B and 3 are located on the Fonthill Kame Delta Provincially Significant Earth Science ANSI. Slopes of the kame-delta are susceptible to enhanced erosion if vegetation cover is disturbed. Flat areas and gentle slopes of the kame-delta are generally used for agricultural purposes and typically are not in conflict with maintenance of the landform characteristics. Grading works should be minimized and viewscapes should be preserved where possible.

4.2.1.4 SPECIALTY CROP AREAS

Alternatives 2B and 3 are located within the Greenbelt Plan Area – Natural Heritage System, Specialty Crop Area, specifically, the Niagara Peninsula Tender Fruit and Grape Area. Areas of disturbance and impervious surfaces should be limited/minimized at these locations.

4.3 Evaluation of Alternative Solutions

The short list of alternative solutions developed to address the Problem and Opportunity Statement were evaluated with respect to their impact on the social, economic, technical, archaeological, and environmental categories. The evaluation criteria under each category are shown in Table 4-1. Considerations within each category were developed in consultation with the Project Team.

Table 4-1 – Evaluation Criteria and Considerations

Criteria	Considerations
Social	• Effects on neighbouring properties • Effects on Indigenous communities • 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
Technical	• Compatibility with existing systems • Ease of implementation • Effects on operations and maintenance • Treatment complexity • Ability to meet existing and future water demands
Cultural	• Effects on archeological resources • Effects on built heritage resources and cultural heritage landscapes
Environmental	• Effects on wildlife and vegetation • Effects on habitats and air quality • Effects on Source Water Protection • Climate Change

A graphical scoring method, as shown in Table 4-2, was used in the evaluation. Preference for an alternative solution is indicated by the amount of shading within the circle symbol. The highest impact, which would be the most negative solution, is shown as an empty/white circle symbol. The lowest impact, which would be the most positive solution, is shown as the circle symbol coloured fully green.

Table 4-2 – Scoring Graphic Legend

				
Highest Impact	High Impact	Moderate Impact	Low Impact	Lowest Impact
(Most Negative)	(Negative)	(Neutral)	(Positive)	(Most Positive)

4.3.1 Evaluation of Alternatives

The evaluation of the Alternative Solutions was completed by the Project Team. The evaluation is shown in Table 4-3.

Table 4-3 – Evaluation of Short-Listed Alternatives

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 Agricultural
	  • 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
	  • Similar viewshed impacts on the Fonthill Kame cultural landscape, the escarpment landscape, and visual intrusions above the tree lines
			• Zoned as Agriculture with an amendment to allow the Golf Course
			• 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
			• Similar viewshed impacts on the Fonthill Kame cultural landscape, the escarpment landscape, and visual intrusions above the tree lines
					• Zoned as Agricultural
					• Land privately owned; Owner not currently open to selling land.
					• Higher aesthetic impacts to surrounding properties as closer to more houses and Lookout Street
					• Similar viewshed impacts on the Fonthill Kame cultural landscape, the escarpment landscape, and visual intrusions above the tree lines
						

Economical	• Higher capital costs anticipated related to land acquisition & overall EST 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 EST 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 EST 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 EST 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 anticipate less impact of EST construction 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 EST construction	
Cultural	• Impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes. Stage 1 and 2 Archaeological Assessment required.		• Less impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes as land has been previously disturbed. Stage 1 and 2 Archaeological Assessment required.		• Less impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes as land has been previously disturbed. Stage 1 and 2 Archaeological Assessment required.	
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.	

4.4 Preferred Alternative Presented at PIC #1 (November 2019)

Based on the supporting study completed and the evaluation of the short listed alternatives, the preferred alternative presented at PIC #1 in November 2019 was to construct the new Pelham elevated tank at Site Alternative 3 (South of the golf course driving range).

Figure 4-2 – Map of Preferred Elevated Tank Location Alternative Presented at PIC #1

As shown in Figure 4-2 above, the preferred alternative included:

- A new elevated tank being constructed on the property south of the Golf Driving Range at 220 Tice Road, with an overflow pond which is needed to drain the EST for maintenance. The new elevated tank would be approximately 44m tall above the ground level
- An access road from Lookout Street to the elevated tank
- A new watermain from the new elevated tank connected to the existing regional transmission main, and
- Demolition of the existing Pelham Elevated Tank and Booster Pumping Station once the new infrastructure is operational.

At PIC #1, it was noted that the final recommendation for this alternative to be the preferred alternative was tentative based on stakeholder input at and after the PIC. Additionally, it was noted that additional supporting studies would need to be completed to support the Class EA and/or detailed design process including a Stage 2 Archaeological Assessment and a Geotechnical/Hydrogeological Study.

4.4.1 Artistic Rendering of New EST

Three artistic renderings of the new EST were developed to help visualize what the EST would look like in the surrounding environment once constructed are presented below.

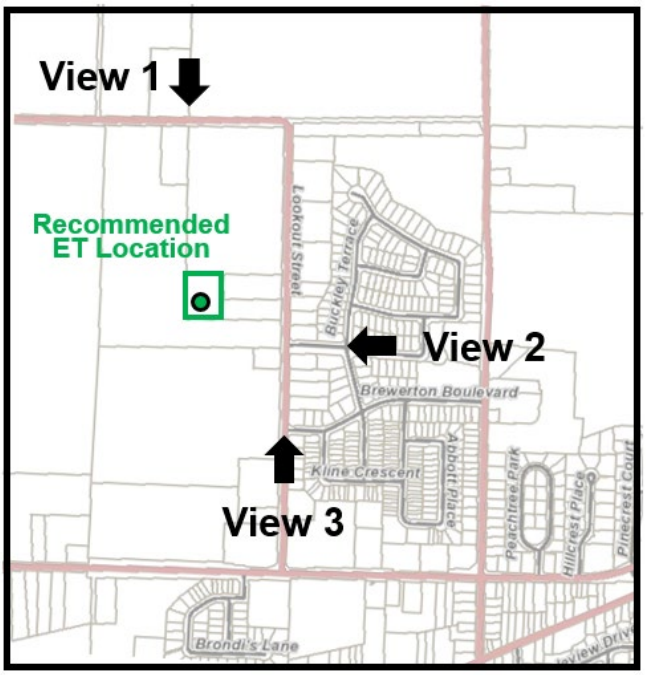


Figure 4-3 – Key Plan for Artistic Renderings

Figure 4-4 – View 1: Tice Road at Existing Driving Range Looking South

Figure 4-5 – View 2: Marlene Stewart Drive and Near Buckley Terrace Looking West

Figure 4-6 – View 3: Lookout Street Near Brewerton Boulevard Looking North

4.4.2 Confirmation of Class EA Schedule for the Preferred Alternative

Following the identification of the preferred alternative in PIC #1, the Project Team confirmed that the previously noted Class EA schedule was still valid. Overall, it was determined that this project was still classified as a Schedule B Class EA, and that the appropriate planning process was being followed.

Table 4-4 – Confirmation of Class EA Schedule of Preferred Alternative

Scope of Preferred Alternative	Class EA Schedule	Description of Permitted Activity
Construction of a New EST and Associated Infrastructure to Replace the Existing EST	Schedule B	Water Item B6: Establish new or expand/replace existing water storage facilities.
Connection of the New EST to the Existing Water Distribution System via a New Watermain	Schedule A+	Item A+1: Establish, extend, or enlarge a water distribution system and all works necessary to connect the system to an existing system or water source, provided all such facilities are in either an existing road allowance or an existing utility corridor, including the use of Trenchless Technology for water crossings.
Upgrade of the Existing Distribution Pumps at the Shoalts Drive Reservoir/Pumping Station	Schedule A	Water Item A2: Increasing pumping station capacity by adding or replacing equipment where new equipment is located within an existing building or structure.
Construction of a new overflow pond	Schedule B	Wastewater Item B2: Establish new stormwater detention/retention ponds or tanks and appurtenances or infiltration systems including outfall to receiving water body where additional property is required
Connection of the New Overflow Pond to the Existing Sanitary Sewer System to Drain the New EST During Maintenance Activities or Overflow Events	Schedule A+	A+1: Establish, extend or enlarge a sewage collection system and all necessary works to connect the system to an existing sewage or natural drainage outlet, provided all such facilities are in either an existing road allowance or an existing utility corridor, including the use of Trenchless Technology for water crossing.

5.0 Phase 2: Alternative Solutions (Part 2)

5.1 Need for Additional Site Considerations and Consultation

Based on the comments received for PIC #1 in November 2019, the need for additional consultation and review of the potential sites for the new EST was identified. Refer to Section 6.1 for details on the comments received during PIC #1.

Based on this, the Project Team reconsidered and re-evaluated suitable sites within the Town of Pelham for the construction of a new EST and the necessary improvements to the existing water service area to identify a recommended solution.

This reconsideration and re-evaluation of suitable sites is described as part of this section of the report.

5.2 Identification of Alternative Solutions

Figure 5-1 shows a map of the overall Study Area, which remained the same as Phase 1 and Phase 2 (Part 1). Additional potential locations for the new Pelham EST within this Study Area were considered.

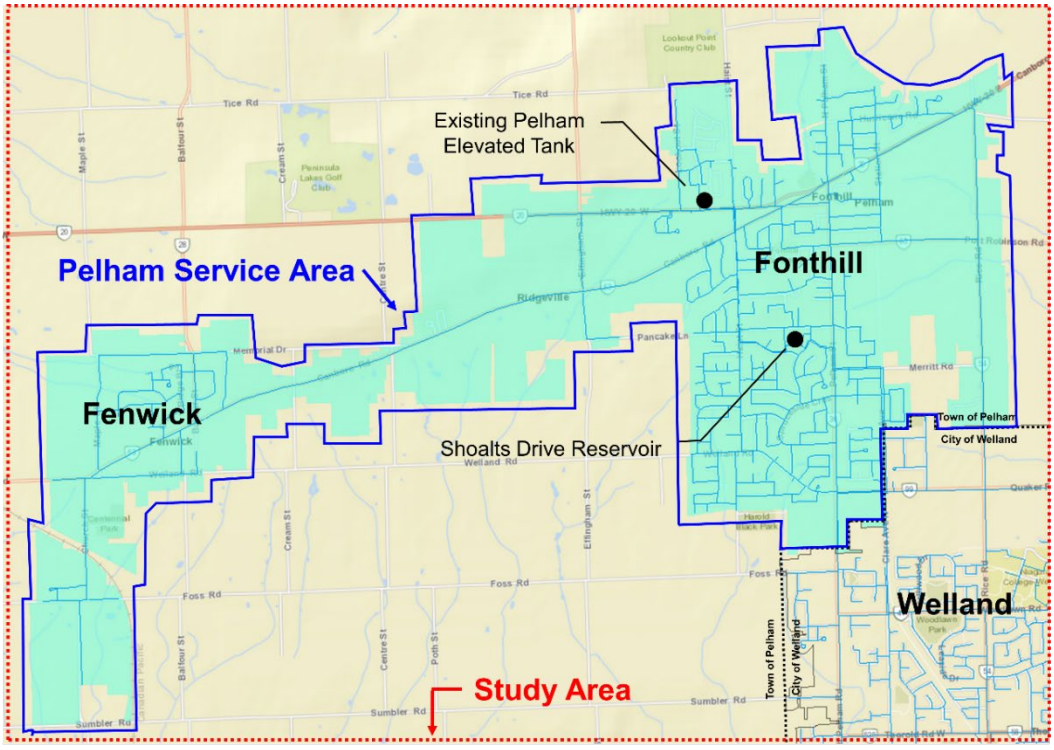


Figure 5-1 – Overview of the Study Area & Pelham Service Area

5.2.1 Screening of Study Area to Locate Alternative Sites for the New EST

A screening of the Study Area was completed to determine a list of potential areas for the new EST. These potential areas for the new EST were screened based on:

- Elevation – Locations where the elevations were too low for the required height of the new EST to achieve sufficient water pressures in the service area were screened out.
- Land Use – Locations that are forested or part of natural heritage systems, or areas which are already occupied such as existing residential zones, recreational facilities, areas with existing commercial uses, or areas with existing infrastructure which would interfere with a new EST, such as a communication tower, were screened out.
- Distance – Locations too far from urban settlements and the existing regional water transmission main were screened out. The further the distance an EST is from these items, the higher the overall costs would be due to the increase in infrastructure required to connect the EST to the existing system.
- Space Limitations – Locations already densely populated with residential or commercial buildings, which have insufficient land space available for a new EST were screened out.
- Quarry – Locations at or near the quarry where an EST would potentially be impacted by quarry activities (e.g. blasting) were screened out.
- School – Locations on school property where the construction and ongoing maintenance of the EST would be disruptive to the operation of the school and/or reduce the yard size available for use by the school and students were screened out.

Figure 5-2 shows a map of the areas screened out based on the criteria above as potential locations for the new EST. Note that while this map does show distinct colours and areas for the different screening factors for simplicity, there are numerous areas that were screened out for more than one factor. For example, the quarry areas were screened out based on the potential impacts from the quarry on the EST and vice versa. However, some of the quarry areas shown also have space limitations that would prevent a new EST from being built on them.

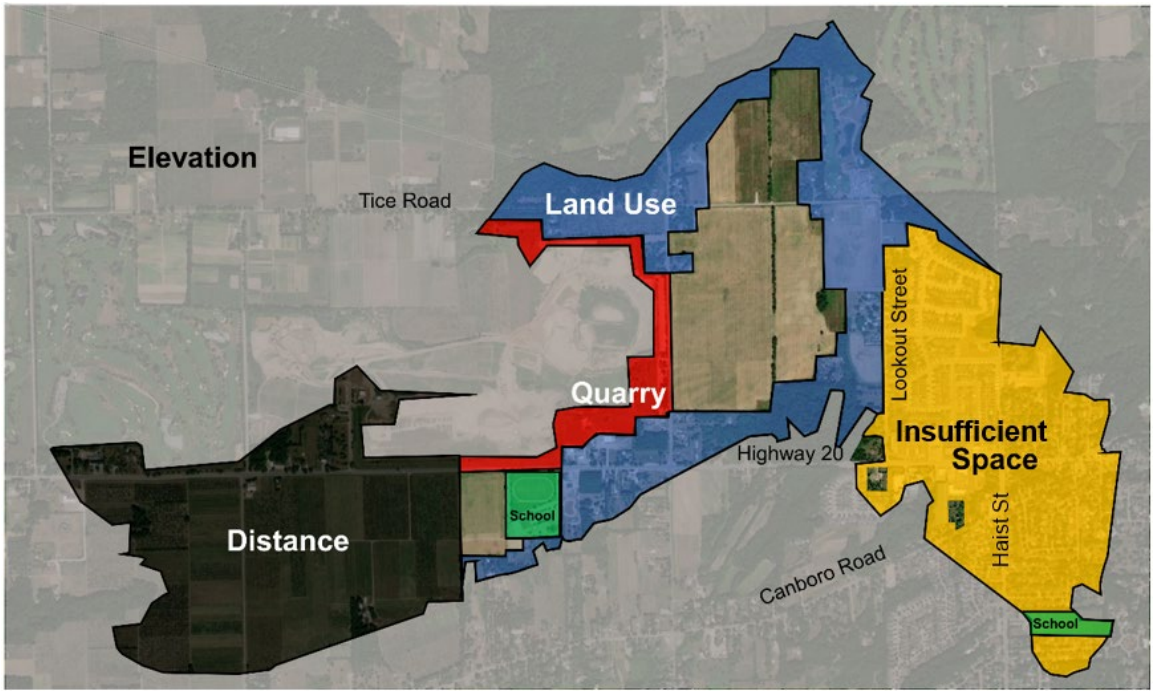


Figure 5-2 – Map of the Screening of the Study Area for Potential EST Sites

This screening approach allowed the Project Team to develop a new list of alternative EST sites. The list included the following sites:

- Baseline – Do Nothing
- Alternative 1 – East of 275 Tice Road
- Alternative 2 – West of 229 Tice Road
- Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)
- Alternative 4 – 1574 Lookout Street
- Alternative 5 – 1591 Effingham Street
- Alternative 6 – 205 Highway 20 West
- Alternative 7 – 202 Highway 20 West
- Alternative 8 – 169 Canboro Road
- Alternative 9 – West of EL Crossley Secondary School (350 Highway 20 West)

5.2.2 Baseline – Do Nothing

This is the baseline scenario where the existing EST would remain in place and a new EST would not be constructed. Similar to the description of Section 4.1.1., the additional growth and water demands will be satisfied by additional pumping from Shoalts Reservoir pumps to provide water to the Pelham Water System. Since this alternative does not satisfy the Problem and Opportunity Statement, this alternative was not carried forward to the short

list. There is also insufficient space to construct the new EST on this site while keeping the existing EST operational.

5.2.3 Alternative 1 – East of 275 Tice Road

This area is currently active farmland. As this location is further away from the existing regional transmission main comparing to other alternatives screened out (as shown in Figure 5-3), as a result the overall costs would be higher. Based on this, Alternative 1 was not carried forward to the short list.

5.2.4 Alternative 2 – West of 229 Tice Road

While this area is further away from the regional transmission main than other alternatives, it has adequate space for a new EST and associated infrastructure, such as an overflow pond for when the EST needs to be drained for maintenance. It is also currently vacant. As such, Alternative 2 was carried forward to the short list for further evaluation.

5.2.5 Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)

Please note that this alternative is the same as the recommended alternative (Alternative #3 – South of Existing Driving Range) from Phase 2: Alternative Solutions (Part 1) and presented at PIC #1 in November 2019.

This area has adequate space for a new EST and associated infrastructure, is currently zoned as agricultural with an amendment to allow for the Golf Course. It is currently vacant, and the property owner is willing to sell the required land. As such, Alternative 3 was carried forward to the short list for further evaluation.

5.2.6 Alternative 4 – 1574 Lookout Street

This area is currently active farmland with residential buildings fronting onto Lookout Street. As this location will require the regional water transmission main to be extended onto Tice Road, the overall costs would be higher compared to other locations. A longer paved access road to the EST would also be required, adding to the costs and impacts to the farmland. Alternative 4 was not carried forward to the short list.

5.2.7 Alternative 5 – 1591 Effingham Street

Similar to the previous alternative, this area is currently active farmland with residential buildings on the property. The location is further away from the existing regional transmission main resulting in overall higher costs compared to other locations. Alternative 5 was not carried forward to the short list.

5.2.8 Alternative 6 – 205 Highway 20 West

This location is located on a partially wooded area which is a Provincially Significant Earth Science Area of Natural and Scientific Interest. The remaining area has insufficient space for a new EST, is at a lower elevation compared to other locations, and is close to existing residential areas. Alternative 6 was not carried forward to the short list.

5.2.9 Alternative 7 – 202 Highway 20 West

Compared to the other locations, this area is at a slightly lower elevation which results in increased EST construction costs. It is also located within a residential area with existing houses and condominiums surrounding the property on multiple sides and is currently zoned as residential. However, this area has adequate space for a new EST and associated infrastructure and is currently vacant. Based on this, Alternative 7 was carried forward to the short list for further evaluation.

5.2.10 Alternative 8 – 169 Canboro Road

This area is currently zoned as residential, with residential buildings on and surrounding three sides of the property. Additionally, this location is at a lower elevation compared to other locations. Alternative 8 was not carried forward to the short list.

5.2.11 Alternative 9 – West of EL Crossley Secondary School (350 Highway 20 West)

Finally, this location west of the school has adequate space. However, since it is in close proximity to the school there would potentially still be some disruption to the school itself during construction. As such, Alternative 9 was not carried forward to the short list.

5.2.12 Other Alternative Sites Noted Previously in Part 1:

The alternative sites that were identified during Part 1 (i.e. those presented at PIC #1 in November 2019) but that did not make it through to the short list, were not carried forward to the Part 2 short list. This is based on the evaluation previously completed, and on new information obtained through the process (e.g. local opposition and land not open for sale). As a result, these alternatives were screened out as viable alternative sites. Alternatives removed from consideration included the following sites. Please refer to Section 4.0 for further details.

- Existing Location of the EST – This location was screened out as there is insufficient space at this site to build a new EST.
- 1524 Lookout Street – This location was screened out as there is insufficient space at this site to build a new EST.

- 1542 Lookout Street – This location was determined to have adequate space during the screening process. However, it is a private property, The Region reached out to the owner, but the property owner did not provide a response.
- 1621 Lookout Street - This location was determined to have adequate space during the screening process. However, during the detailed evaluation of this alternative, it was determined that the owner of the site was not open to selling the land required. This alternative was not carried forward further.
- Existing Communications Tower location at Tice Road and Effingham Street - This location was screened out as there is insufficient space at this site to build a new EST.
- Existing Lafarge Quarry – This location was determined to have adequate space, however, was screen out as it is further away from the existing Regional water transmission main and is subject to potential impacts from quarry activities due to the proximity to the quarry.
- Haist Street, North of Peachtree Park Crescent - This location was screened out as there is insufficient space at this site to build a new EST, and the land has already been developed.

5.2.13 Short List of Alternative Solutions

The updated short list of alternative solutions was therefore determined to include the following sites:

- Alternative 2 – West of 229 Tice Road
- Alternative 3 – South of Existing Golf Driving Range (220 Tice Road)
- Alternative 7 – 202 Highway 20 West

Figure 5-3 below shows the preliminary sites and whether they were carried forward to the short list, based on the rationale outline in previous sections.

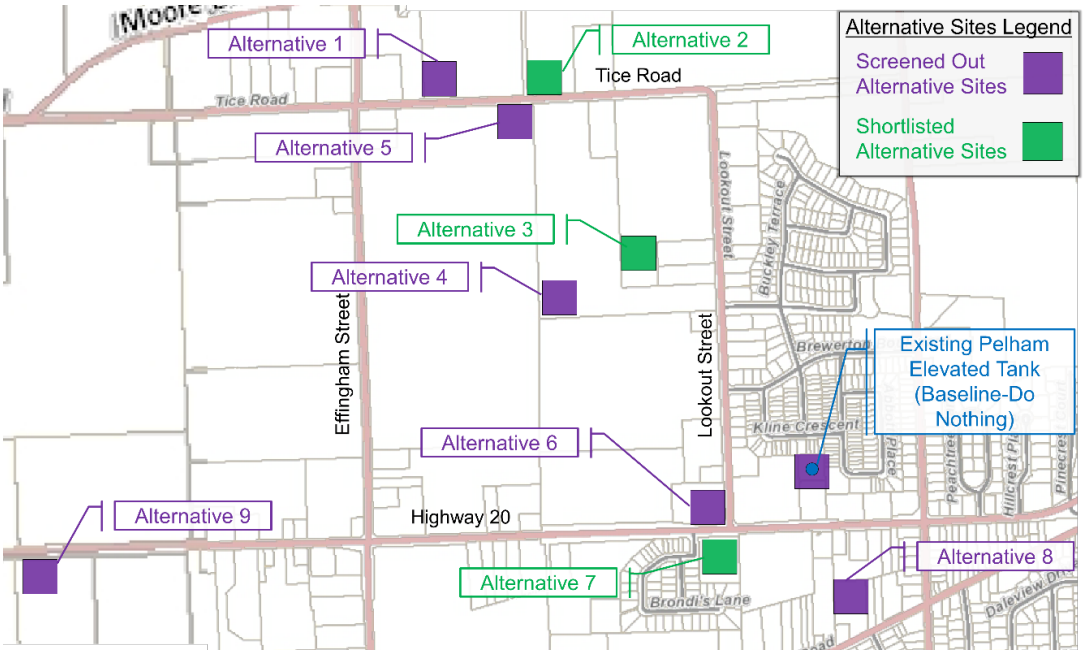


Figure 5-3 – Map of Preliminary EST Sites Screened for Short List

5.3 Evaluation of Updated Short Listed Alternative Solutions

5.3.1 Evaluation Criteria, Description and Methodology

The updated short list of alternative solutions developed to address the Problem and Opportunity Statement were evaluated with respect to the same evaluation criteria and the same graphical scoring method shown in Table 4-1 and Table 4-2. Considerations within each category were developed in consultation with the Project Team.

5.3.2 Evaluation of Alternatives (Part 2)

The evaluation of the Alternative Solutions is shown in Table 5-1.

The capital cost for each alternative was updated based on information available at the time of writing this Project File Report. The estimated capital cost included:

- Land Acquisition cost, estimated based on the updated 2023 real estate value in the general area, which was provided by the Region's real estate group.
- ET cost, updated based on cost estimates provided by the ET supplier.
- Watermain construction cost, updated based on a recent watermain construction tender cost in the Niagara Region.

Table 5-1 – Evaluation of Short-Listed Alternatives

Evaluation Criteria	Alternative Site 2 – West of 229 Tice Road	Rating	Alternative Site 3 – South of Driving Range	Rating	Alternative Site 7 – 202 Hwy 20 West	Rating
Social	• Zoned as Residential, Commercial or Industrial; • Land privately owned, currently vacant. Part of a large, 23-acre property; severance of land may impact property owner • Moderate aesthetic impacts to surrounding properties as further away from Lookout Street		• Zoned as Agriculture with an amendment to allow the Golf Course; rezoning required • Land privately owned by Golf Course; severance of land required; property owner has indicated willingness to sell • Moderate aesthetic impacts to surrounding properties as further away from Lookout Street		• Zoned as Institutional • Land privately owned; currently vacant. Part of a 2.5-acre property; purchase of whole property required • Higher aesthetic impacts to surrounding properties as closer Lookout Street & Highway 20 West residential area (houses, condos)	
Economical	• The overall anticipated capital cost related to land acquisition, ET construction, and watermain construction is estimated to be $32 million. • Similar EST operation and maintenance lifecycle costs anticipated for all EST locations		• The overall anticipated capital cost related to land acquisition, ET construction, and watermain construction is estimated to be $23 million. • Similar EST operation and maintenance lifecycle costs anticipated for all EST locations		• The overall anticipated capital cost related to land acquisition, ET construction, and watermain construction is estimated to be $26 million. • Similar EST operation and maintenance lifecycle costs anticipated for all EST locations	
Technical	• Similar approvals anticipated to be required • Similar operations and maintenance effects • Similar improvements to water distribution system for pressure and fire flows • Further from existing watercourse – if carried forward, geotechnical/hydrogeological study required to determine construction impacts • 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 • Further from existing watercourse – if carried forward, geotechnical/hydrogeological study required to determine construction impacts • 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 • Closer to existing watercourse – if carried forward, geotechnical/hydrogeological study required to determine construction impacts	
Cultural	• Impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes.		• Less impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes as land has been previously disturbed		• Less impacts to lands with archaeological potential, built heritage resources, and cultural heritage landscapes as land has been previously disturbed	
Environmental	• Moderate impact from natural environmental perspective, with mitigation measures required during design/construction: • If alternative carried forward, field study of vegetation/wildlife required • Located on Provincially Significant Area of Natural and Scientific Interest (Kame Delta Formation), Greenbelt, and Niagara Escarpment Plan Areas. Development Permit Approval required from Niagara Escarpment Commission.		• Moderate impact from natural environmental perspective, with mitigation measures required during design/construction: • 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: • If alternative carried forward, field study of vegetation/wildlife required • Vacant lot in residential area	
Overall Conclusion	Alternative will not be carried forward.	✗	Alternative to be carried forward – Recommended EST Site	✓	Alternative will not be carried forward.	✗

5.3.3 Preferred Location for New EST

Based on the ratings for each of the criterion for the three (3) short listed alternatives, overall Alternative 3 (South of the driving range), was determined to have the least impact to the property owner and lowest capital costs, while having similar or lesser aesthetic, technical, archaeological, and environmental impacts compared to Alternative 2 (west of 229 Tice Rd) and Alternative 7 (202 Highway 20). As such, Alternative 3, South of the golf course driving range, is recommended as the preferred location for the new Pelham EST.

5.4 System Improvement Options (Water Modelling)

With Alternative 3 (South of the driving range) determined to be the preferred location for the new EST, the Project Team undertook a water modelling exercise. The purpose of the water modeling exercise was to determine what system improvements would be necessary to support the new EST in order achieve the desired pressure ranges and improve fire flows within the water system.

As per Section 2.3.3 of this report, the Region's preferred pressure ranges for the water system are between 345 kPa to 551 kPa (50 to 80 psi), and the MECP's acceptable pressure range is between 276 kPa to 689 kPa (40 to 100 psi). For fire flows, the goal is to improve the overall fire flow capacities within the Pelham service area under maximum day flow conditions where the Regional Transmission Main would have at least 250 L/s with a minimum working pressure of 207 kPa (30 psi).

It should be noted that these system improvements would be similar for all three of the short-listed alternatives given their proximity to each other. The findings of the water model exercise were considered and evaluated under the Technical Criteria as part of the evaluation process. These system improvement options include the following scenarios:

- Scenario 0 (Baseline): No Upgrades to Pelham Water System
- Scenario 1: New EST, Extension of Existing Regional Transmission Main to New EST
- Scenario 2: New EST, Extension of Regional Transmission Main to New EST and upsizing the Entire Regional Transmission Main from Shoalts Drive Reservoir to the New EST
- Scenario 3: New EST, New Larger Dedicated Transmission Main from Shoalts Drive Reservoir to the New EST

5.4.1 Scenario 0 (Baseline): No Upgrades to System – System Pressure in 2041

System Improvement Scenario 0 is the baseline scenario in 2041 if no upgrades to the existing water system are completed, i.e., leaving the existing EST in place and undertaking no improvements to the water system. This scenario was modelled as the baseline (do

nothing) to demonstrate the improvements in water pressures in other scenarios. System pressure, based on a steady state basis of the Peak Hourly Demand for growth to 2041 for Scenario 0, is presented in Figure 5-4 below.

From the water modelling, there is a large area in northwest Fonthill which experiences low or very low pressures (shown in orange and red areas), large areas in southern and eastern Fonthill which experience high pressures (shown in purple), and a small area in northeast Fenwick that experiences low pressure (shown in orange).

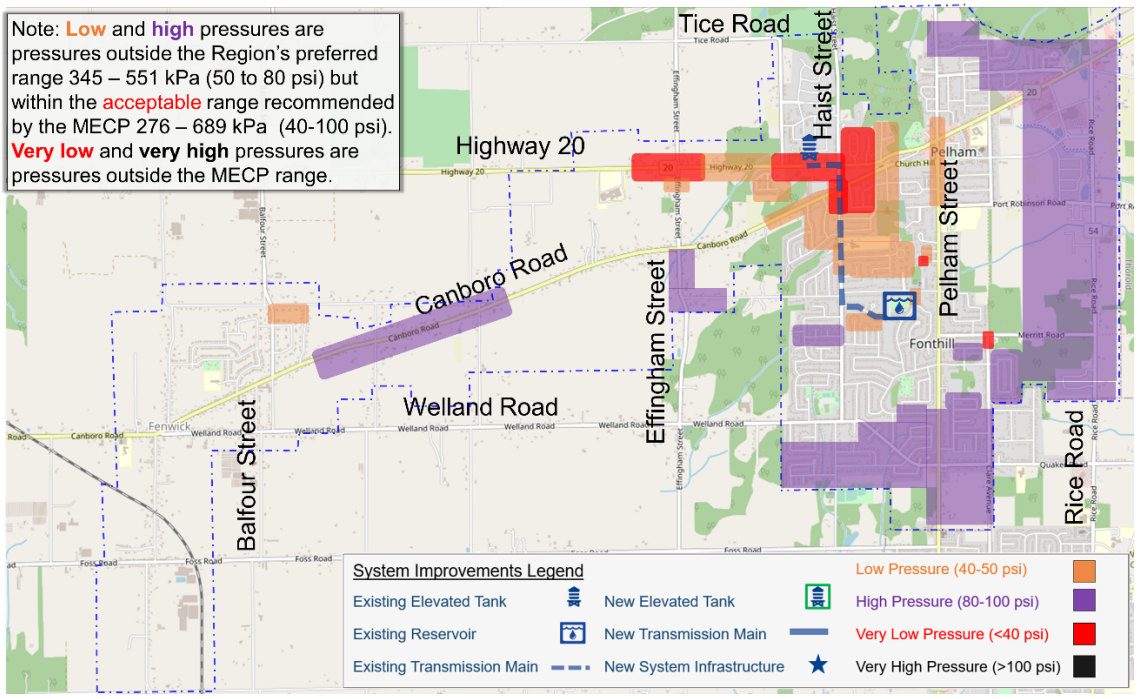


Figure 5-4 – Water Modelling Results: System Pressure for Scenario 0

Overall Scenario 0 cannot meet the acceptable pressure range while accommodating growth to 2041 and will not be carried forward.

5.4.2 Scenario 1: New EST, Extension of Existing Regional Transmission Main to New EST – System Pressure in 2041 Population Forecast

System Improvement Scenario 1 includes the following upgrades to the water system:

- The addition of the new EST at location Alternative 3 (South of the driving range)
- New pumps at the Shoalts Drive Reservoir to pump water to the new taller EST
- A new regional transmission main to connect the new EST to the existing regional water transmission main located by the existing EST. The size of the new regional transmission main will be the same as the existing.

From the water modelling, there are fewer areas which experience low or very low pressure (shown in orange and red areas) when compared to Scenario 0, but more areas experience high pressure (shown in purple). Certain areas in central and northern Fonthill experience very high pressure (shown in black areas), and Fenwick is within the preferred pressure range.

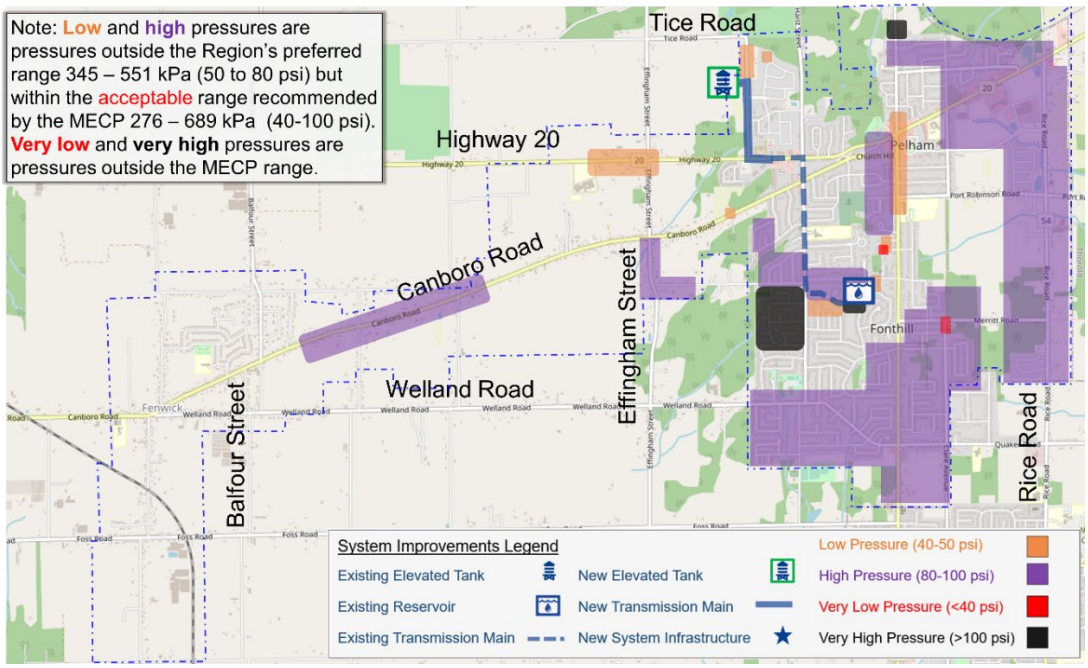


Figure 5-5 – Water Modelling Results: System Pressure for Scenario 1

Overall Scenario 1 cannot meet the MECP acceptable pressure range or the Region's preferred pressure range while accommodating growth to 2041. Therefore, it was not carried forward.

5.4.3 Scenario 2: New EST, Extension of Regional Transmission Main to New EST and Upsizing the Entire Regional Transmission Main From Shoalts Drive Reservoir to the New EST – System Pressure in 2041 Population Forecast

System Improvement Scenario 2 includes the following upgrades to the water system:

- The addition of the new EST at location Alternative 3 (South of the driving range)
- New pumps at the Shoalts Drive reservoir to pump water to the new taller EST
- A new, larger regional transmission main to connect the new EST to the existing Shoalts Drive Reservoir, with a direct connection to the local system along the way.
- A significant amount of new pressure control valve chambers (as indicated by star symbols in Figure 5-6) to adjust the local areas of very high and very low pressure throughout the system (which add to the overall capital costs of the system)

In terms of system pressures, there are fewer areas which experience low pressure (shown in orange), high pressure (shown in purple) or very low pressures (shown in red), and no areas of very high pressure. All areas within the Pelham Water System would have pressures within the MECP's acceptable pressure range. Fenwick, on the west end, is also within the preferred pressure range.

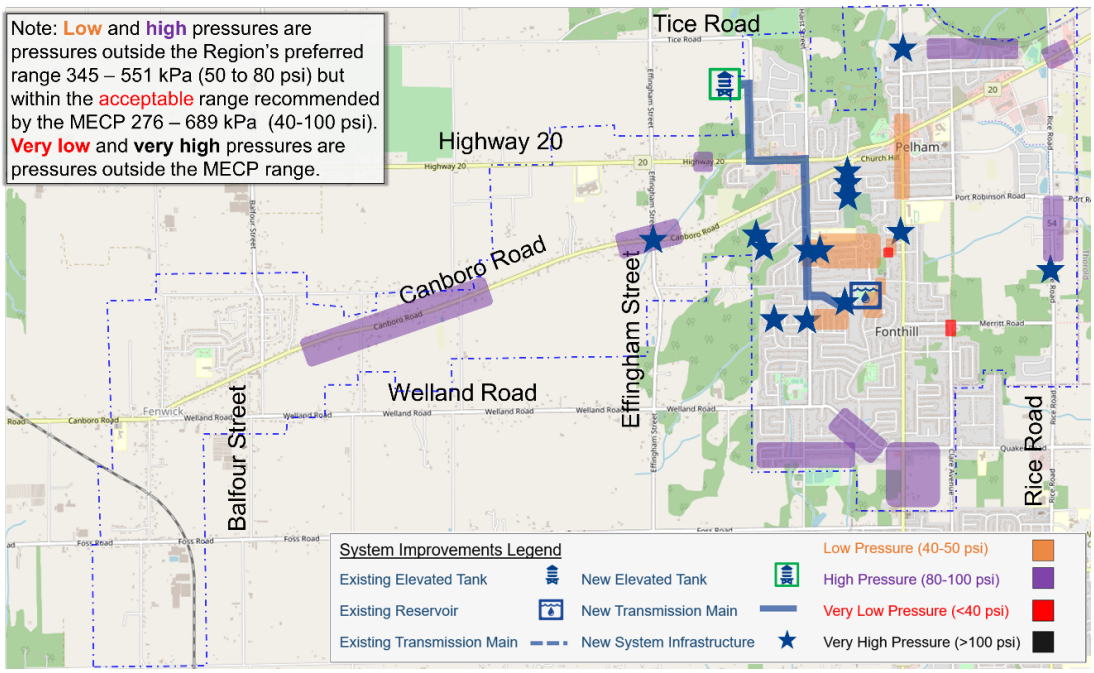


Figure 5-6 – Water Modelling Results: System Pressure for Scenario 2

Overall Scenario 2 has more areas within the Region's preferred pressure range and improves on fire flow. This was carried forward for comparison with Scenario 3.

5.4.4 Scenario 3: New EST, New Larger Dedicated Transmission Main from Shoalts Drive Reservoir to the New EST – System Pressure in 2041 Population Forecast

System Improvement Scenario 3 includes the following upgrades to the water system:

- The addition of the new EST at location Alternative 3 (South of the driving range)
- New pumps at the Shoalts Drive reservoir to pump water to the new taller EST
- A new, larger, and dedicated regional water transmission main to connect the new EST to the existing Shoalts Drive Reservoir. This dedicated regional transmission main will not have connection to the local watermain system except at key connection points for fire and emergency circumstances.
- A new separate local watermain connection on the discharge of the new EST to feed water to the local system.

- A smaller number of new system infrastructure, such as pressure control valve chambers, which will help to adjust the areas of very high and very low pressure throughout the system.

In terms of system pressures, there are fewer areas which experience low pressures (shown in orange), high pressures (shown in purple) or very low pressures (shown in red), and no areas of very high pressure. All areas within the Pelham Water System would have pressures within the MECP's acceptable pressure range. Fenwick, on the west end, is also within the preferred pressure range.

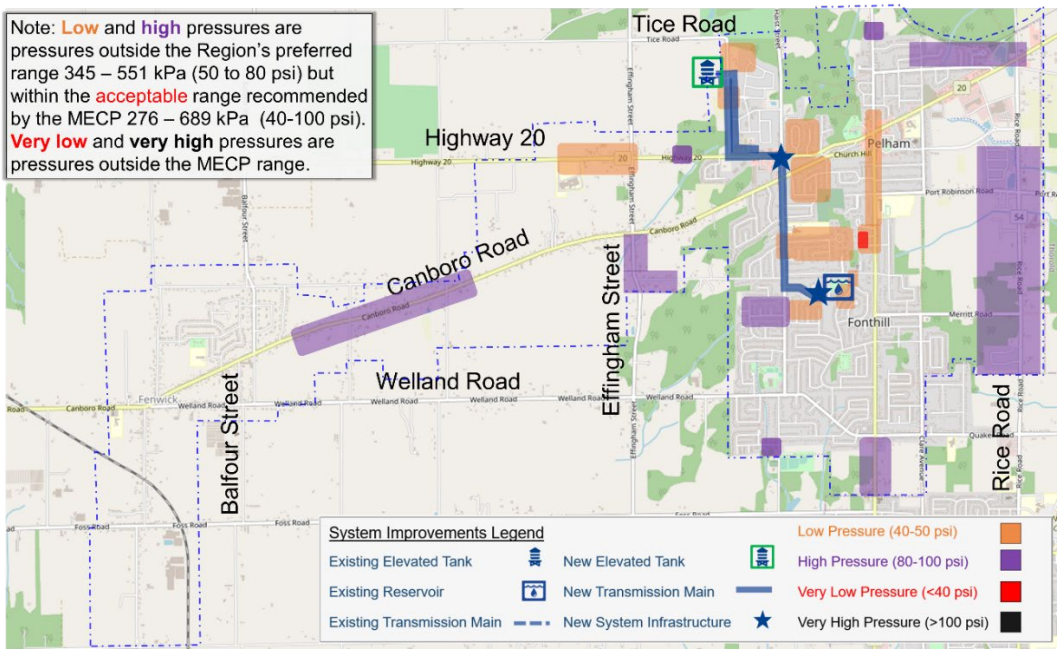


Figure 5-7 – Water Modelling Results: System Pressure for Scenario 3

Overall, Scenario 3 has more areas in the preferred pressure range compared to Scenario 0 - Baseline. Scenario 3 also requires less new system infrastructure upgrades than Scenario 2, reducing lifecycle costs, as well as construction, operation, and maintenance impacts.

5.4.5 Review of Fire Flows in 2041

In terms of fire flows for the system, Scenario 0 (Baseline) in 2041: No Upgrades to System, the available fire flow worsens compared to present day fire flows.

For each of the scenarios where upgrades to the water system are proposed (i.e., Scenarios 1, 2, and 3) available fire flows improved compared to the baseline scenario. Further improvements could be achieved by upgrading small and dead-ended watermains

in the local system. Upgrades of the local watermain system can be completed in a phased approach, as the local areas undergo other improvements throughout the years.

Figure 5-8 below shows the areas of improved fire flows for Scenario 3. The areas noted with the light blue shading shows the areas that would have improved fire flows when the Scenario 3 system improvements are implemented, compared to the baseline scenario. This is mainly the northwest Fonthill area, and the tip of Highway 20 west, as well as a large portion of Fenwick.

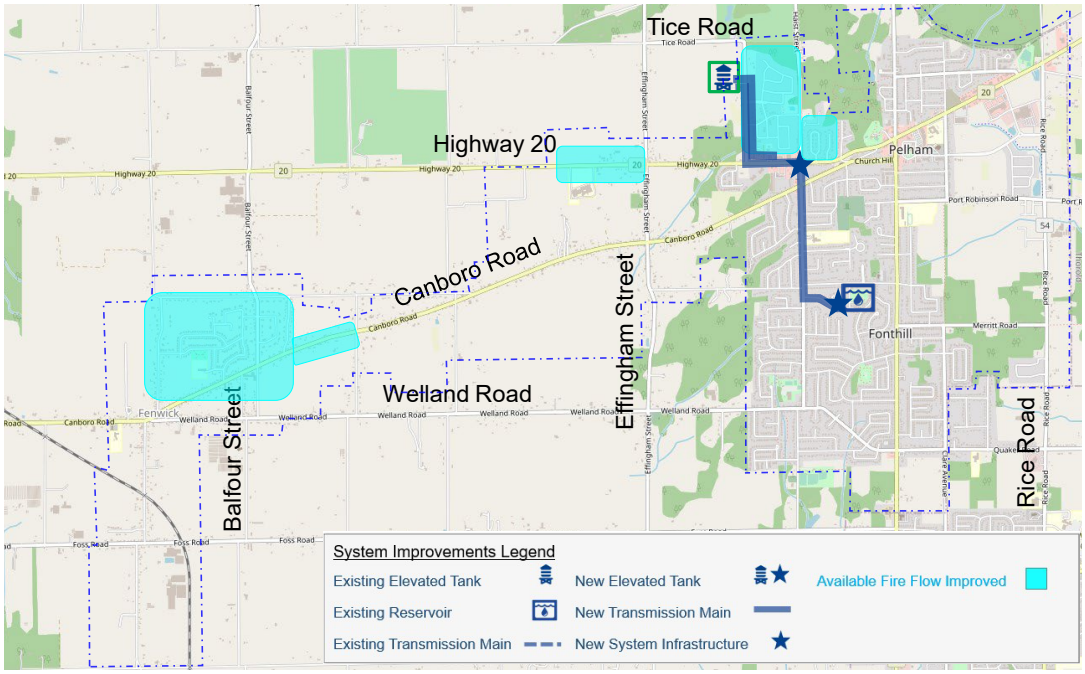


Figure 5-8 – Water Modelling Results: Areas of Improved Fire Flow for Scenario 3

5.4.5.1 PREFERRED SYSTEM IMPROVEMENTS SCENARIO

Based on the results of the water modelling for system pressure and overall improvements to fire flow, Scenario 3: New EST, Dedicated Transmission Main, and System Infrastructure, is the preferred system improvements scenario.

5.5 Supporting Studies and Investigations

Various supporting investigations and studies were carried for the original and updated alternatives. These studies identified impacts and mitigation measures that were considered as either part of the evaluation process or to confirm the recommended alternative. The sections below summarize the findings of these studies.

5.5.1 Natural Environmental Investigation

As the preferred location of the new EST remain unchanged from the site evaluation in Part 1 (Section 4), the results of the Natural Sciences Report completed by LGL Limited remain valid. Refer to Section 4.2.1 for details of the Natural Sciences Report.

5.5.2 Archaeological Assessment

A combined Stage 1 and Stage 2 Archaeological Assessment (AA) was completed by Archaeological Services Inc. (ASI). This assessment was carried out for the preferred new EST location, with permission from the golf course, and areas where the system improvements to support the new EST would be completed including:

- The location of the new EST (at the end of the golf course driving rate - at 220 Tice Road)
- Portions of the rights-of-way of Lookout Street, Highway 20 West, Haist Street, Bigelow Crescent, and Shoalts Drive, and
- The existing reservoir and pumping station location at 5 Shoalts Drive

The Stage 1 AA determined there were 33 previously registered archaeological sites within one (1) kilometer of the preferred EST location. ASI completed a site visit on April 20, 2022 and confirmed that a Stage 2 AA was required for portions of the study area.

The Stage 2 AA was completed on June 14 to 17, 2022 for the location of the new EST at 220 Tice Road. ASI completed test pit surveys at 5 m intervals and judgmental test pit surveys at 10 m intervals on the site.

No archaeological resources were encountered during the Stage 1 and 2 AA, and no further archaeological assessments were recommended. An overview of the areas assessed as part of the Stage 1 and 2 AA, and the recommendations of the report are presented in the table below.

The Stage 1 and 2 AA Report is included in Appendix F.

Table 5-2 – Overview of Archaeological Assessment Areas and Recommendations

Status	Area	Stage 1 and 2 AA Report Recommendations
Areas Previously Assessed with No Further AA Recommended	• Portions of Lookout Street (Right-of-Way) • Highway 20 (Right-of-Way) • Portions of Haist Street (Right-of-Way)	• Previously assessed. • No further AA recommended.
Areas Previously Disturbed	• Portions of Lookout Street (Right-of-Way) • Portions of Haist Street (Right-of-Way) • Bigelow Crescent (Right-of-Way) • Shoalts Drive (Right-of-Way) • Existing Shoalts Drive Reservoir	• Previous disturbance confirmed, no archaeological potential. • Stage 2 AA not required. • No further AA recommended.
Areas of Archaeological Potential	• New EST Location (220 Tice Road, South of Driving Range)	• Stage 2 AA completed by ASI. • No further AA recommended.

5.5.3 Cultural Heritage Report

A Cultural Heritage Report documenting the existing conditions and preliminary impact assessment was completed by Archaeological Services Inc. (ASI). The study area of the report looked at the preferred new EST location and areas where the system improvements to support the new EST would be completed, including:

- The location of the new EST (at the end of the golf course driving rate - at 220 Tice Road)
- Portions of the rights-of-way of Lookout Street, Highway 20 West, Haist Street, Bigelow Crescent, and Shoalts Drive
- The existing reservoir location at 5 Shoalts Drive

The report noted that there were three (3) previously identified built heritage resources within the study area. An additional eight (8) built heritage resources and one (1) cultural heritage landscape were identified during the associated fieldwork for the report. The built heritage resources and cultural heritage landscape identified were shown in the figure below. Refer to Appendix G for a larger version of the figure.

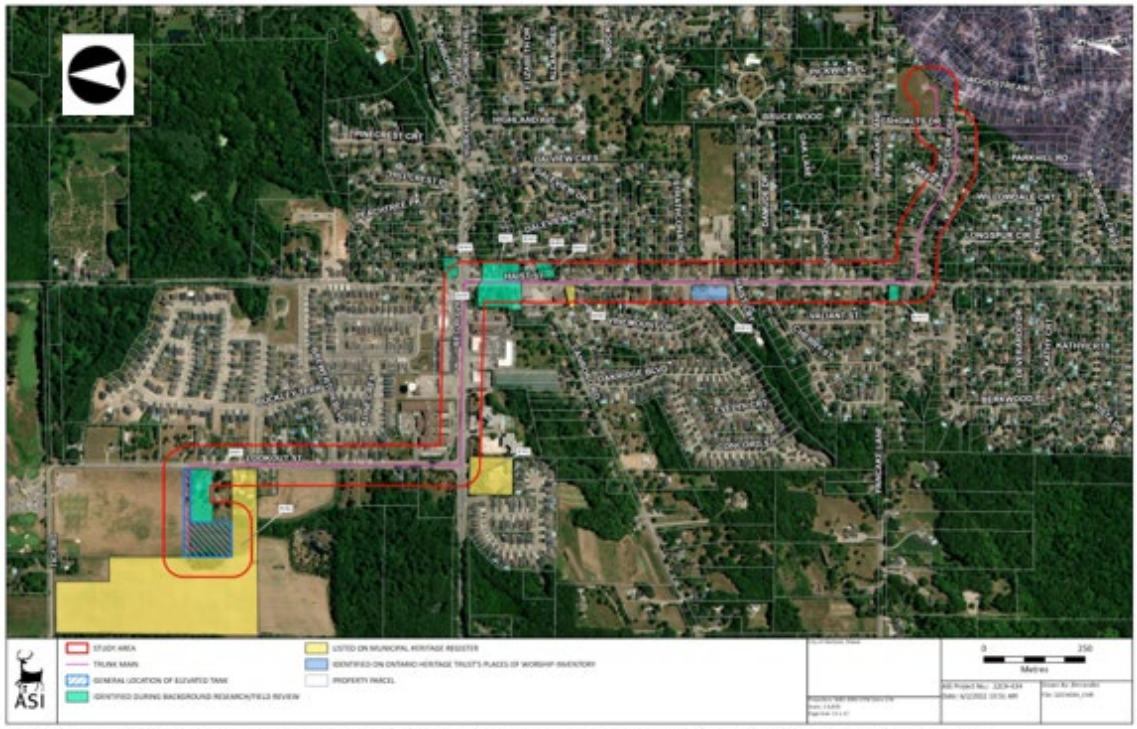


Figure 9: Location of Identified Built Heritage Resources (B.H.R.) and Cultural Heritage Landscape (C.H.L.) in the Study Area (Overview Sheet)

Figure 5-9 – Excerpt of Cultural Heritage Report by ASI Showing Identified Built Heritage Resources and Cultural Heritage Landscapes

In reviewing the built heritage resources and cultural heritage landscape, the report concluded there are no direct adverse impacts as a result of the proposed work.

There is potential for indirect visual impacts to build heritage resources at 1584 Lookout Street and 1574 Lookout Street based on the preferred location of the new EST. It was recommended that a Cultural Heritage Evaluation Report (CHER) be completed to determine if these properties have cultural heritage value or interest (CHVI). It was recommended that a CHER be completed as part of the detailed design process.

Additionally, there are potential vibration impacts to all the built heritage resources and the cultural heritage landscape due to construction vibration. It is recommended that a Baseline Vibration Assessment be completed as part of the geotechnical investigation during detailed design to confirm where vibration monitoring should occur and whether any impacts are anticipated.

Overall, the cultural heritage report recommends that construction activities and staging be suitably planned and undertaken to avoid negative impacts to identified built heritage resources and cultural heritage landscapes. Avoidance measures may include, but are not limited to, erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.

The Cultural Heritage Report is included in Appendix G.

5.5.4 Geotechnical and Hydrogeological Investigations

A preliminary geotechnical and hydrogeological investigation of the preferred location will be completed as part of the conceptual design process following the completion of this Class EA. Additionally a Phase One Environmental Site Assessment (ESA) will be completed, followed by a Phase Two ESA if required.

5.5.5 Topographic Survey

A topographic survey of the preferred location will be completed as part of the conceptual design process following the completion of this Class EA.

5.6 Recommended Alternative Solution

Based on the supporting studies completed and the evaluation of the short-listed alternatives, the recommended solution is to construct the new Pelham EST at Site Alternative 3 (South of the driving range) and implement System Improvements Scenario 3. This includes:

- A new EST being constructed on the property south of the Golf Course Driving Range at 220 Tice Road, with an overflow pond in case of emergency overflow incidents or for planned maintenance of the EST.
- An access road from Lookout Street to the new EST.
- A new, larger, dedicated transmission main from the existing Shoalts Drive Reservoir, with new pumps, to fill the new EST.
- A new watermain from the new EST discharge line to the existing local watermain at Lookout Street, to connect to local distribution system.
- A new valve chamber at Highway 20 West and Haist Street for pressure control and allow isolation of the new infrastructure as required for maintenance, emergencies, etc., and
- Demolition of the existing Pelham EST and Booster Pumping Station once the new infrastructure is operational.

Figure 5-10 – Map of Preferred EST Location Alternative

5.6.1 Artistic Rendering of New EST

Three artistic renderings of the new EST were developed to help visualize what the EST would look like in the surrounding environment once constructed are presented below.

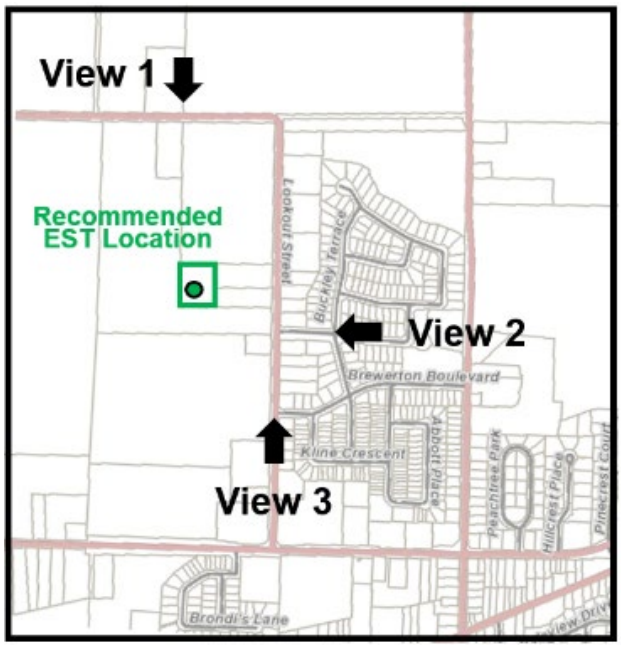


Figure 5-11 – Key Plan for Artistic Renderings

Figure 5-12 – View 1: Tice Road at Existing Driving Range Looking South

Figure 5-13 – View 2: Marlene Stewart Drive and Near Buckley Terrace Looking West

Figure 5-14 – View 3: Lookout Street Near Brewerton Boulevard Looking North

5.6.2 Confirmation of Class EA Schedule for the Recommended Alternative Solution

Following the identification of the recommended alternative solution, the Project Team confirmed that the previously noted Class EA schedule was still valid. Overall, it was determined that this project was still classified as a Schedule B Class EA, and that the appropriate planning process was being followed.

Table 5-3 – Confirmation of Class EA Schedule for the Recommended Alternative Solution

Scope of Preferred Alternative	Class EA Schedule	Description of Permitted Activity
Construction of a New EST and Associated Infrastructure to Replace the Existing EST	Schedule B	Water Item B6: Establish new or expand/replace existing water storage facilities.
Connection of the New EST to the Existing Water Distribution System via a New Transmission Main and Watermain, Including New Valve Chambers, etc.	Schedule A+	Water Item A+1: Establish, extend, or enlarge a water distribution system and all works necessary to connect the system to an existing system or water source, provided all such facilities are in either an existing road allowance or an existing utility corridor, including the use of Trenchless Technology for water crossings.
Upgrade of the Existing Distribution Pumps at the Shoalts Drive Reservoir/Pumping Station	Schedule A	Water Item A2: Increasing pumping station capacity by adding or replacing equipment where new equipment is located within an existing building or structure.
Construction of a new overflow pond	Schedule B	Wastewater Item B2: Establish new stormwater detention/retention ponds or tanks and appurtenances or infiltration systems including outfall to receiving water body where additional property is required
Connection of the New Overflow Pond to the Existing Sanitary Sewer System to Drain the New EST During Maintenance Activities or Overflow Events	Schedule A+	Wastewater Item A+1: Establish, extend or enlarge a sewage collection system and all necessary works to connect the system to an existing sewage or natural drainage outlet, provided all such facilities are in either an existing road allowance or an existing utility corridor, including the use of Trenchless Technology for water crossing.

5.7 Considerations for Potential Construction Impacts, Long-Term Impacts, and Mitigation Measures

5.7.1 Considerations for Climate Change

As part of the Class EA process, the Provincial's Guide "Considering Climate Change in the Environmental Assessment Process" was reviewed. The Guide sets out MECP's guidelines and expectations for consideration of climate change for the Class EA process. The project was reviewed to identify the potential impacts of climate change, the effects of climate

change on the project, and identify mitigation measures to minimizing the effects. Two considerations for assessment of the project's preferred alternatives were evaluated as follows:

1. Climate Change Mitigation – Project's expected production of greenhouse gas emissions and impacts on carbon sinks; and,
2. Climate Change Adaptation – Resilience or vulnerability of the undertaking to changing climatic conditions.

5.7.1.1 CLIMATE CHANGE MITIGATION

The following design practices, construction methodologies, and operational practices can be considered for this implementation of this project, to reduce GHG emissions and impacts on carbon sinks:

- A climate lens assessment will be considered following the preliminary design of the facilities, which includes a greenhouse gas emissions assessment and a climate change resilience assessment. Following Infrastructure Canada's Climate Lens guidance document, the climate change resilience assessment for this project will be based on the Public Infrastructure Engineering Vulnerability Committee (PIEVC) Protocol, using a simplified risk assessment methodology to compare the level of risk under existing climate conditions to future climate scenarios.
- During construction, low emission and high fuel efficiency construction equipment will be selected and kept in good working order. Construction methodologies and practises will be reviewed by the Contractor to improve efficiency and reduce run-time. Overall, the length of the construction time and use of heavy machinery is minimized, if possible.
- Optimization of hauling routes for material transport to reduce travel time and use of locally sourced material to reduce emissions associated with transportation where possible.
- Review and select materials, for example fence materials (i.e., steel versus wood) to reduce embodied GHG emissions, review and consider recycled or alternative paving materials and increase the use of slag in concrete mix design to reduce concrete material. Where possible, select materials to lower energy consumption, reduce GHG emissions and reduce raw materials usage.
- Process equipment selection to include energy efficient considerations to conserve energy and reduction of GHG emissions.

- Vegetation and tree planting surrounding the study area to create "carbon sinks" to absorb GHG emissions. Vegetation and trees lost through construction will be replaced, and removal will be kept to a minimum. The construction timing windows would be scheduled to mitigate the negative impacts on local vegetation, and native species.
- Landscaping opportunities will be reviewed during design to minimize disturbances and aesthetics to the nearby residences.
- Review and identify operational improvements to standard operating procedures to improve operational efficiencies and energy consumption (i.e., pump run times, lightning run times, etc.).
- Best practices for climate change would be considered during the design to mitigate the impact of the new EST and associated infrastructure. For example, water and energy reducing features would be incorporated into the design (e.g., energy efficient lighting systems).

5.7.1.2 CLIMATE CHANGE ADAPTATION

The following considerations will be reviewed for the preferred alternatives design to account for future climate change concerns at this location:

- Best practices for structural building requirements to accommodate extreme weather would be incorporated to the EST design (e.g., wind and snow load on the EST).
- If an excess soil management plan is required for this project, preference for site hauling will be given to sites closer to the project location, rather than further away.
- Efforts will be made in the grading plan to equalize the cut/fill balance such that soil transportation.
- The facility will be equipped with a standby emergency diesel generator, with on-site fuel storage to operate the facility in case of future power outages. The generator will be designed to meet MECP's air emissions regulations, will be weatherproof and will have an acoustic enclosure.
- On-site stormwater management and a stormwater management plan, for the EST site, to account for changes in severity of storms will be reviewed as part of the designed per the Stormwater Management guidelines by NPCA, MECP, etc.
- For flooding potential and extreme weather events, design consideration for recent wet weather event impacts and use of data to assess the magnitude of frequency and risk. For example, consideration of response to major flooding and resiliency to extreme weather events for the EST design. Stormwater management design would need to consider historical and recent weather events, water levels, etc.

- Climate change is not anticipated to have a large effect on the operation, decommissioning, or post-closure of the EST. The preferred location of the EST is at a relatively high elevation in Pelham, which would reduce the risk of flooding, etc. from local water bodies.

5.7.2 Considerations for Aesthetics and Community Impacts

Temporary visual, noise, and traffic impacts are anticipated during construction in residential areas and long-term visual impacts of the new EST on the near the new EST location residents are anticipated. Long-term visual impacts for residents beside the existing EST will be eliminated. Rezoning will be required as the property is currently zoned as agricultural with an amendment to allow the Golf Course.

Mitigation measures for aesthetics and community impacts for the new EST and associated infrastructure will include:

- A detailed visual impact assessment (VIA) on the Fonthill Kame cultural landscape should be included during detailed design, including discussions on mitigation measures for both visual impacts and impacts on cultural heritage resources located at 1574 and 1584 Lookout Street.
- A detailed VIA on the scenic resources of the Niagara Escarpment should be included during detailed design, including discussion on mitigation measures for visual impacts on key views of concern identified by the NEC (Appendix H).
- Design for landscaping using native vegetation where possible to provide natural habitat for wildlife and aesthetics. Landscaping should also consider blocking the view of the new EST and site works from the local residential houses and blending the EST into the natural landscape as much as possible.
- Long-term, the appearance of the new EST will be maintained. The design for coating system should consider longevity to minimize aesthetic impacts and frequency of recoating. Routine maintenance of the EST long term will be completed to help maintain the appearance.
- A Shadow Impact Study will be completed during the conceptual/detailed design process to determine impacts on surrounding properties.
- During construction, at least one lane of traffic should be maintained on local and major roads. Traffic control (i.e., flag persons, timed streetlights) will be required in certain parts of the construction.
- Construction operations to abide local noise by-laws and within time periods.
- Access for emergency response vehicles and personnel always should be maintained along with public access to private residences and businesses.

- Construction specifications will limit all but emergency construction to normal daytime hours and will require environmental controls to limit runoff from sites, as well as noise and vibration impacts.

5.7.3 Considerations for the Natural Environment

5.7.3.1 VEGETATION

As per Section 4.2.1, an existing wooded area was noted on the west side of the property of the new EST. This wooded area is considered Core Natural Heritage Environmental Protection Area and an Environmental Conservation Area. Mitigation measures for the construction of the new EST and associated infrastructure will include:

- Tree removal within the wooded area on the west side of the new EST site should be avoided. The limit of disturbance should be delineated with the appropriate tree protection measures (i.e., installation of tree protection fencing) within the project area to help protect trees to be retained.
- Where tree removal is proposed as part of the detailed design phase, a tree inventory should be completed with an assessment of wildlife habitat trees. If required, implement timing windows, relocation of plantings of interest, and the restoration of the area.
- The natural vegetation in the study areas should be protected as much as possible to maintain native plant diversity and the wildlife habitat it provides. Any vegetation that must be removed during construction should be replaced with plantings of native species once development is complete. Revegetated areas should be monitored to ensure the successful establishment of native plantings.

5.7.3.2 WILDLIFE AND WILDLIFE HABITATS

Mitigation measures for the construction of the of the new EST and associated infrastructure will include:

- The natural vegetation in the project work area should be protected as much as possible to maintain native plant diversity and the wildlife habitat it provides. Design for landscaping using native vegetation where possible to provide natural habitat for wildlife and aesthetics. Minimize vegetation, tree removal, and the construction area to the extent possible.

- Barn Swallows often make use of anthropogenic structures (i.e., buildings) for nesting, habitat up to 200m from the nesting sites are identified as Category 1 to 3 habitats. Follow up screening is required at detailed design prior to commencing project works. If active nests are found, further consultation with the MECP will be required to ensure compliance.
- It is also recommended to inspect the construction site for wildlife before initiating work each day. Any wildlife species should be safely removed from the construction area. Any SAR species encountered should be properly handled, moved and reported, following SAR handling protocol under the Endangered Species Act (Government of Ontario, undated). Construction staff should be trained on the identification of potential SAR that could occur in the area to aid in daily monitoring and reporting.
- It is the responsibility of the proponent to ensure that Species at Risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the proposed activities to be carried out on the site. If the proposed activities cannot avoid impacting protected species and their habitats, then the proponent will need to apply for an authorization under the Endangered Species Act (ESA). If the proponent believes that their proposed activities are going to have an impact or are uncertain about the impacts, they should contact SAROntario@ontario.ca to undergo a formal review under the ESA.
- For bat species, where any works propose tree or building removal, a screening for suitable maternity roosting habitat and individuals of this species should be completed during the month of June according to MNRF protocol for Species at Risk Bat Surveys for Buildings and Isolated Trees. If this species is found in the screening, further consultation with MECP will be required to ensure compliance with the Endangered Species Act.

5.7.3.3 CONSIDERATIONS FOR THE TERRESTRIAL ENVIRONMENT

As per Section 4.2.1, the new EST and associated infrastructure fall within the Fonthill Kame Delta Area of Natural and Scientific Interest (ANSI) and the Niagara Peninsula Tender Fruit and Grape Specialty Crop Area. As a result:

- Consultation with the NEC, MNRF, NPCA, etc. will be required during the detailed design to mitigate visual and physical impacts to these areas.
- Stripping of the natural vegetation should be kept to a minimum. Ground cover should be re-established as soon as possible.
- Grading works should be kept to a minimum and slopes should be cut to ensure stability as soon as possible.

- Areas of disturbance and impervious surfaces should be limited/minimized.
- Viewscapes should be preserved, where possible. Visual impacts and viewscapes to be coordinated with the Town of Pelham and NEC to determine whether a Visual Impact Assessment is required as part of the detailed design.

5.7.3.4 CONSIDERATIONS FOR THE AQUATIC ENVIRONMENT

There are no impacts anticipated to the aquatic environment at this time. Existing watercourses, waterbodies, etc. are not within the anticipated project area, thus impacts to the associated species/ habitats typically found in these locations are not anticipated.

5.7.4 Considerations for Surface and Groundwater Water Protection

5.7.4.1 DEWATERING REQUIREMENTS

Dewatering requirements, if any, will be determined by the geotechnical and hydrogeological investigations completed as part of the conceptual and detailed design processes. If dewatering is required, it is anticipated that mitigation measures for the construction new EST and associated infrastructure could include:

- Status of, and potential impacts to any private well water supplies should be identified and addressed.
- For potential construction or decommissioning of monitoring wells, Ontario Regulation 903 should be followed.
- Potential impacts on groundwater-dependent natural features should be identified and addressed.
- Determine if a Permit to Take Water (PTTW) is required during construction. Any potential impacts identified to groundwater features, groundwater taking, or discharge will be addressed and incorporated during detailed design.
- The dewatering of the work area(s) by pumping the discharge flows through a filter bag (or other more stringent controls as required) to disperse them through a vegetated area at least 30 m from any water bodies, as per MECP guidelines.
- A spill management plan by the Contractor which detailing measures for spills reporting, spill control and spill containment. Directions on stockpiling of materials, leak monitoring and refueling of equipment will be incorporated in the contract documents and avoid construction activities and laydown areas adjacent to watercourses and natural areas.

5.7.4.2 SURFACE WATER

In-water works for this project are not required, as such minimal impacts to surface water are anticipated. Mitigation measures for the construction of the new EST and associated infrastructure could include:

- Stormwater runoff quality and quantity control measures should be considered for all impervious areas, and where possible, existing surfaces. The stormwater management plan for new infrastructure will be developed in detailed design.
- Sediment and erosion controls will be incorporated into the construction contract documents and implemented to mitigate impacts on potential receiving water bodies. The controls will be regularly monitored, and excess sediment will be removed from the controls as required during construction.

5.7.4.3 SOURCE WATER PROTECTION

The new EST and associated infrastructure are outside of the Source Protection Plan area for the Welland WTP which supplies water to the Pelham service area, and construction is not anticipated to impact private groundwater wells nor surface water sources at this time.

5.7.5 Considerations for Archaeological Resources

As discussed in Section 5.4.2, the Stage 1 and 2 Archaeological Assessment did not discover any archeological resources. No further archaeological work for the study area was recommended. The Region will continue to consult with First Nation communities after the completion of the Class EA and during the design phase.

In the case of archaeological resources being unexpectedly encountered during construction, in spite of the completion of archaeological assessment, the proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified. See Appendix F for more legislation compliance advice.

5.7.6 Considerations for Built Heritage Resources and Cultural Heritage Landscapes

Eleven (11) Built Heritage Resources were identified as part of the Cultural Heritage Report, as per Section 5.4.3. Considerations for Built Heritage Resources during the implementation of this project will include:

- Identified resources are to be included in project mapping.
- Completion of a CHER during detailed design to determine whether the identified properties (1574 and 1584 Lookout Street) have cultural heritage value or interest.

- Determination of the potential for vibration impacts during construction on the Built Heritage Resources. A Baseline Vibration Assessment will be completed as part of the geotechnical investigation during detailed design. If vibration impacts are confirmed to be a concern, a Vibration Monitoring Plan will be developed and implemented during construction.
- Contractor to be informed of the potential cultural heritage landscapes and avoid encroachment onto the resources when delivering materials and equipment to the preferred water supply and water storage locations.
- Pre and post construction condition assessment or recording of the site/building should be taken prior to construction. Post-construction rehabilitation to return resources to pre-construction conditions, to be completed if required.
- Construction activities and staging should be suitably planned and undertaken to avoid negative impacts to identified built heritage resources and cultural heritage landscapes. Avoidance measures may include, but are not limited to erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.

One (1) Cultural Heritage Landscape was identified as part of the Cultural Heritage Report, as per Section 5.5.3. Considerations for Cultural Heritage Landscapes during the implementation of this project will include:

- Identified resources are to be included in project mapping.
- Determination of the potential for vibration impacts during construction on the Cultural Heritage Landscape. A Baseline Vibration Assessment will be completed as part of the geotechnical investigation during detailed design. If vibration impacts are confirmed to be a concern, a Vibration Monitoring Plan will be developed and implemented during construction.
- Contractor to be informed of the potential cultural heritage landscapes and avoid encroachment onto the resources when delivering materials and equipment to the preferred water supply and water storage locations.
- Pre and post construction condition assessment or recording of the site/building should be taken prior to construction. Post-construction rehabilitation to return resources to pre-construction conditions, to be completed if required.
- Construction activities and staging should be suitably planned and undertaken to avoid negative impacts to identified built heritage resources and cultural heritage landscapes. Avoidance measures may include, but are not limited to erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.

5.7.7 Considerations for Facility Air Quality and Noise Emissions

5.7.7.1 APPLICABLE REGULATIONS AND GUIDELINES

The following table outlines the applicable regulations and guidelines related to air and noise emissions. These regulations and guidelines will be further reviewed during detailed design to confirm compliance and determine the appropriate approvals required to support the project.

Table 5-4 – Applicable Regulations & Guidelines

Code/Standard	Description of Use
Drinking Water Works Permit (DWWP)	• A DWWP provides the description of the overall drinking water system, including treatment, storage, pumping and distribution, and outlines the requirements to use/operate, establish/alter the drinking water system. • For new DWWPs or amendments to an existing permit to reflect changes to a drinking water system, a DWWP application needs to be completed. Section 10 of the DWWP application requires any discharges to the air to be identified, and supporting information typically required for the approvals under Section 9 of the Act to be provided, where applicable. • Alternatively for existing drinking water systems, a Form 3 – Record of Addition, Modification, or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere, can be completed, where applicable. The form requires an Emission Summary Table to be prepared by a Professional Engineer in accordance with the Act and O.Reg. 419/05.
Environmental Protection Act (Act)	• Defines approval requirements, limits, etc. for activities which may cause adverse effects to the environment. • Section 9 of the Act notes that any activity (use, operation, construction, alteration, extension or replacement any plant, structure, equipment, apparatus, mechanism or thing) that discharges contaminant(s) to the natural environment are not permitted (other than water), unless an Environmental Compliance Approval (ECA) or Environmental Activity and Sector Registry (EASR) has been completed. Requirements of an ECA are under Part II.1 of the Act, and requirements of the EASR are under Part II.2 of the Act.

Code/Standard	Description of Use
	• Under the Act, an ECA or EASR do not need to be completed if the activity meets the exemption criteria under O. Reg. 524/98.
Ontario Regulation 524/98: Environmental Compliance Approvals - Exemptions from Section 9 of the Act (O. Reg. 524/98)	• Defines activities which are exempt from the approval (ECA or EASR) process under Section 9 of the Act. • Even if activities are exempt from approval under this regulation, air and noise limits under O.Reg. 419/05 and NPC-300 should still be met as part of the design process.
O. Reg. 1/17: Registrations Under Part II.2 of the Act - Activities Requiring Assessment of Air Emissions (O. Reg. 1/17)	• Defines the prescribed activities which are permitted to apply for an EASR under Section 9 of the Act. If the activity is not a prescribed activity under O.Reg. 1/17 and has not been exempt under O.Reg. 524/98, an ECA is required.
Ontario Regulation 419/05: Air Pollution – Local Air Quality (O. Reg. 419/05)	• Defines requirements for allowable levels of contaminants emitted to the air by equipment/ facilities to minimize impacts to overall local air quality. At the time of this report, Schedule 3 Standards are in effect. • Outlines requirements of emission analysis/ modelling to confirm compliance with the allowable emission levels, and reporting in the form of an Emission Summary and Dispersion Modelling (ESDM) report to support applicable approvals and/or design requirements.
Guideline A-10: Procedure for Preparing an Emission Summary and Dispersion Modelling (ESDM) Report	• Provides guidance on the requirements to produce an ESDM report under O.Reg. 419/05. • ESDM reports to compile air dispersion modelling information and emission information to assess concentration of a contaminant in the local air.
NPC-300 Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning, August 2013 (NPC-300)	• A guideline on the proper control of sources of noise emissions to the environment to ensure sources of noise are adequately controlled to prevent potential negative effects. • Defines requirements for allowable noise emissions from equipment/facilities at points of reception such as residential dwellings, schools, hospitals, etc. to support applicable approvals and/or design requirements.

Code/Standard	Description of Use
	• Noise limits outlined in NPC-300 are used in Primary Noise Screening Forms, Secondary Noise Screen Forms, and Acoustic Assessment Reports to support applicable approvals.
NPC-115 Construction Equipment	• Defines noise emission standards for various types of construction equipment. Due to the temporary and unavoidable nature of construction, these guidelines stipulate limits on individual pieces of equipment instead of a receptor-based performance limits.
NPC-118 Motorized Conveyances	• Defines sound emission standards for motorized conveyances of various types. This publication sets limits for noise generated by each individual piece of equipment/heavy vehicle type.

5.7.7.2 AIR EMISSIONS

During the detailed design of this project, the new EST will need to have any emissions to the atmosphere (air) assessed. The detailed design process will need to assess the cumulative (facility-wide) air emissions for each contaminant at the Point(s) of Impingement (POIs). At this time, the POI is anticipated to be the property line of the EST location.

Table 5-5 below provides a high-level overview of the possible equipment at the new EST, the potential contaminants released to the air, the compliance levels set out by O.Reg. 419/05, and potential mitigation measures, if determined to be required.

Any significant sources of emissions determined during detailed design will be documented through the appropriate approval application process, where required.

Table 5-5– Potential Emissions to the Air

Possible Emission Sources[1]	Potential Air Emissions	O.Reg. 419/05 Schedule 3 Standards	Potential Mitigation Measures (If Required)
Standby Power Generator[2]	NOx (CAS# 10102-44-0)	1-hr: 400 µg/m^3 24-hr: 200 µg/m^3	Addition or extension of exhaust stack to disperse emissions
	CO (CAS# 630-08-0)	0.5-hr: 6000 µg/m^3	
	Suspended Particulate Matter	24-hr: 120 µg/m^3	
Chemical Storage Tanks (e.g., Chlorine)[3]	Chlorine (CAS# 7782-50-5)	24-hr: 10 µg/m^3	Addition of an air scrubber to remove chemicals before release to atmosphere

Notes:

1. Any equipment, apparatus, mechanism or thing that is part of a large municipal residential system or a small municipal residential system, as defined in Ontario Regulation 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002*, are exempt from the Act based on O.Reg. 524/98. Note that while exempt from the Act, emissions should still comply with O.Reg. 419/05. This will be reviewed during detailed design.
2. Standby Power Generators may be exempt from the Act if the criteria set out under O.Reg. 524/98 is met such as: using diesel or natural gas as fuel, the unit is designed to meet Tier 1 Emission Standards (USEPA), meets the maximum NOx levels noted, has a sound level less than 75 dB(A) at a distance of 7m, unit is properly maintained and tested no more than 60-hrs in a 12-month period, etc. Note that while exempt from the Act, emissions should still comply with O.Reg. 419/05. This will be reviewed during detailed design.
3. Emissions from chemical storage tanks may be considered negligible/insignificant sources of emissions if they meet the criteria set out in Guideline A-10. For example, contaminants that are emitted from a specific facility may be identified as negligible when they are below emission thresholds that are developed using the formula provided in the guideline. This will be reviewed during detailed design.

5.7.7.3 NOISE EMISSIONS

Similar to the air emissions, during the detailed design of this project the new EST will need to have any noise emissions assessed. The detailed design process will need to assess the cumulative (facility-wide) noise emissions at the nearby Point(s) of Reception (PORs) at outdoor PORs and/or the plane of window for noise sensitive spaces as appropriate. At this time, the PORs are anticipated to be the existing residential houses located beside the preferred location for the EST.

Additionally, the area where the new facilities will be located are anticipated to be considered as Class 3 Area (a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as a small community or agricultural area).

Table 5-6 below provides a high-level overview of the possible equipment at the new EST which may be sources of noise, the compliance limits set out by NPC-300, and potential mitigation measures, if determined to be required.

Any significant sources of noise determined during detailed design will be documented through the appropriate approval application process, where required. Confirmatory noise testing can be completed during construction, if deemed to be required as part of the detailed design and/or approval process.

Table 5-6 – Potential Noise Emissions

Possible Noise Sources[1]	NPC-300 Class 3 Noise Compliance Limits[3]	Potential Mitigation Measures (If Required)
Standby Power Generator[2]	7AM – 3PM: 50 dB(A) 3PM – 11PM: 45 dB(A) 11PM – 7AM: 45 dB(A)	• Silencers on generator intake, exhaust, and stack • Acoustic louvres on intake/exhaust dampers if installed indoors • Acoustic, weatherproof enclosure if installed outdoors • Acoustic barrier between generator and POR
Distribution Pumps at the Shoalts Drive Reservoir	7AM – 3PM: 45 dB(A) 3PM – 11PM: 40 dB(A) 11PM – 7AM: 40 dB(A)	• Acoustic louvres on intake/exhaust dampers of existing reservoir
HVAC Equipment (e.g., fans, air handling units, etc.)[4]	7AM – 3PM: 45 dB(A) 3PM – 11PM: 40 dB(A) 11PM – 7AM: 40 dB(A)	• Acoustic louvres or silencers on intake/exhaust points • Acoustic enclosure surrounding the HVAC unit

1. Any equipment, apparatus, mechanism or thing that is part of a large municipal residential system or a small municipal residential system, as defined in Ontario Regulation 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002*, are exempt from the Act based on O.Reg. 524/98. Note that while exempt from the Act, emissions should still comply with NPC-300. This will be reviewed during detailed design.

2. Standby Power Generators may be exempt from the approval requirements of the Act if the criteria set out under O.Reg. 524/98 is met such as: using diesel or natural gas as fuel, the unit is designed to meet Tier 1 Emission Standards (USEPA), meets the maximum NOx levels noted, has a sound level less than 75 dB(A) at a distance of 7m, unit is properly maintained and tested no more than 60-hrs in a 12-month period, etc. Note that while exempt from the Act, emissions should still comply with NPC-300. This will be reviewed during detailed design.
3. Allowable noise limits for emergency equipment operating in non-emergency situations (e.g., testing and maintenance) are permitted an additional 5 dB(A) allowance. Noise limits do not apply to emergency equipment operating in emergency situations. This will be reviewed during detailed design.
4. HVAC equipment may be exempt from the approval requirements of the Act, if the criteria set out under O.Reg. 524/98 is met such as: using natural gas as fuel, designed to have a maximum thermal input capacity of each combustion unit not greater than 10.5 million kilojoules per hour, etc. Note that while exempt from the Act, noise levels should still comply with NPC-300. This will be reviewed during detailed design.

5.7.8 Considerations for Construction Dust, Noise, Vibration, and Traffic

During construction, the following identified impacts and mitigation measures will be specified:

- Noise and vibration from construction activities and machinery. Increased noise and vibration will be mitigated by planning the working hours following the local Noise By-Law, and construction and machinery equipment and heavy vehicles will comply source sound limits with NPC-115, and NPC-118.
- Dust will be generated from construction activities on/nearby the construction site(s). Construction activities will abide by the local Dust Control By-law. Additionally, material wetting or the use of chemical (non-chloride) suppressants to reduce dust, wind barriers, limiting exposed areas that may be a source of dust, equipment washing, and street cleaning are additional mitigation measures that may be required. It is recommended that best management practices be followed during the demolition, excavation, and construction of new facilities to reduce any air quality impacts that may occur.
- Traffic from construction vehicles travelling to/from the construction areas will be present. The materials and equipment will be brought to the new EST location and along the proposed transmission/watermain routes by trucks/ construction vehicles through local roads. Local roads will be kept open to mitigate impacts on residents and businesses. To minimize the impacts to the residents and businesses, if lane closures

are required, they will be limited to one (1) lane where possible, and when a full closure is needed, alternate routes will be provided.

- The Region will investigate the possibility of restricting any lane or road closure hours during key travel times (e.g., rush hour) for Lookout Street, Highway 20, and Haist Street, and implementing signage for local traffic to use specific roads only, to minimize the impact on traffic overall and reduce the chance of traffic using local roads as a bypass.
- The Region will investigate the possibility of route restrictions for construction vehicles/equipment on local residential streets and incorporate these into the Contract Documents during the design process.
- Residential areas, businesses, etc. are located adjacent to the construction areas. The Contractors will be made aware of this and are to exercise caution for all construction vehicle movements in the area. Contractors are to notify the residents and put-up signage in the immediate area when work begins.
- It is recommended that best management practices be followed during construction to mitigate diesel emissions from the truck traffic and other equipment operation, including:
- Mitigating traffic congestion and reducing or eliminating idling time of vehicles in accordance with the local Idling Control By-Law
- Proper maintenance and operation of engines and exhaust systems of fuel-burning equipment and the use of newer machinery that meets more stringent air emissions standards or retrofit older diesel engines with abatement technologies.
- Loads on haul trucks are to be covered.
- Burning of waste materials will be prohibited.

5.7.9 Considerations for Contaminated Soils

A Phase 1 Environmental Site Assessment (ESA) and a Phase 2 ESA (if required) will be completed as part of the conceptual and detailed design of the project. If it is determined that soil within the areas of construction is contaminated, the appropriate mitigation measures will need to be determined at that time, such as further test procedures and appropriate disposal methods in compliance with Ontario Regulation 153/04 and EPA Part XV.1.

5.7.10 Considerations for Excess Materials Management

A Phase 1 Environmental Site Assessment (ESA) and a Phase 2 ESA (if required) will be completed as part of the conceptual and detailed design of the project. The ESA will confirm whether the soil in the areas of construction is suitable for reuse. Considerations for excess soil management include:

- During detailed design, excavated soil quantities that will not be reused will be calculated. An Excess Soil Management Plan will be developed and incorporated in the Contract Specifications, if required. This will address issues such as identification, assessment, excavation conveyance, treatment, staging and disposal of contaminated soils as required.
- Construction activities involving the management of excess soils (if applicable) will be completed in accordance with O.Reg. 406/19 and MECP's guidelines documented under "Management of Excess Soil – A Guide for Best Management Practices (2014)".
- Excess construction soil will be properly stored, reused and/or disposed of per EPA.
- Waste generated on-site will also be disposed of in accordance with MECP's requirements.

5.7.11 Considerations for Monitoring

It is recommended that the Niagara Region and its representatives develop a monitoring program to ensure all mitigating measures are being implemented as required. Input from review agencies, including the NPCA, MECP, MNRF, and Town of Pelham may be beneficial to program. The Contractor performing these works would be ultimately responsible for implementing all required mitigating measures. The monitoring program should include, but not be limited to, the following:

- Reviewing proposed construction methods and temporary facilities with respect to their ability to implement the stated mitigation measures
- Abiding by the terms of the any permits or approvals for works
- Liaising with area property owners to ensure compliance with noise restrictions, working hours, and accommodation of vehicular and pedestrian traffic

5.8 Anticipated Permits and Approvals Required

The proposed works for this project will require approvals and permits from various agencies and regional/municipal departments. Consultation meetings and design submissions will need to be coordinated as required during the final design.

The preferred location is located outside of the Niagara Escarpment Plan Area and Niagara Escarpment Development Control Area. No Development Permit from the NEC is required. However, the NEC has an interest in ensuring the scenic resources of the Escarpment are maintained and should be consulted during the detailed design for the preferred alternative.

The following permits and/or approvals are anticipated to be required at this time:

Table 5-7 – Potential Permits and Approvals Required

Agency	Approval	Description
Ministry of Environment, Conservation and Parks (MECP)	Drinking Water Works Permit (DWWP)	Amendment of existing DWWP to include the new EST and associated infrastructure
MECP	Permit to Take Water (PTTW)	Permit required for dewatering activities during construction, if required
MECP	Species at Risk (SARS) Permit	In the event impacts cannot be mitigated from affecting SARs.
MECP	ECA Air & Noise	Air and noise emission permit, only if confirmed as required during detailed design
Town of Pelham	Building & Demolition Permits	To construct the new EST and demolish the existing EST and associated infrastructure for both.
Town of Pelham	Site Plan Approval	To construct the new EST and associated infrastructure.
Niagara Peninsula Conservation Authority (NPCA)	NPCA Work Permit	To review technical reports and plans such as Site Plan Control, Stormwater Management Plan, Grading and Drainage Plan, etc.
Niagara Region, Town of Pelham, NPCA, etc.	Zoning By-Law Amendment	Rezoning south side of 220 Tice Road (Golf Course Property)
Electrical Safety Authority (ESA)		Approval of electrical installations during construction.
Niagara Peninsula Energy (NPEI)	Permit	To supply power to the new EST
Technical Standards and Safety Authority (TSSA)	Inspection and Permit	To be completed by Contractor for Standby Generator

6.0 Public, Agency, Stakeholder and First Nations Consultation

The public consultation and communications carried out during this project provided a number of opportunities for the public and government agencies/authorities and First Nations to review information from the project team, to provide comments and feedback, and to receive clarifications in accordance with the Class EA process. A description of the stakeholders and First Nations contacted and opportunities for comment is provided below. Input into the Class EA process from the stakeholders is also summarized in the relevant sections noted below.

6.1 Notices and Communications

6.1.1 Notice of Commencement

The Notice of Commencement was published on May 15, 2019 in the Voice of Pelham and on May 16, 2019 in Niagara This Week. The notice also was emailed or mailed to stakeholders, agencies, and First Nations communities, and published on Niagara Region's website.

The notice advised that the Region was undertaking a study for a new Pelham EST and associated system upgrades. The notice advised that the project was a Schedule 'B' Class EA, and a PIC would be held as part of the Class EA process. The notice also advised that comments on the project should be submitted to the Region or R.V. Anderson Associates Limited.

Copies of the mailing list, notice, and newspaper ads are provided in Appendix B.

6.1.2 Notice of Public Information Centre #1

The Notice of Public Information Centre (PIC) was published on October 23, 2019 in the Voice of Pelham, and on October 24, 2019 and October 31, 2019 in Niagara This Week. The notice was also emailed or mailed to interested public, stakeholders, agencies, and First Nation communities and published on Niagara Region's website.

The notice provided an update on the Class EA status. The notice advised of the date, time, and location for the PIC on November 6, 2019, and that questions and comments on this project should be submitted to the Region or R.V. Anderson Associates Limited.

Copies of the mailing list, notice, and newspaper ads are provided in Appendix B.

6.1.3 Public Information Centre #1

On Wednesday, November 6, 2019, an in-person, "drop-in" style PIC was held at Pelham Fire Station No. 1, located at 177 RR 20 West in Fonthill, Ontario. The PIC was held between 6 p.m. and 8 p.m. and the Region staff and members of the consulting team were available to discuss the project and receive and respond to questions and comments from the public.

The PIC presented the problem and opportunity statement, study area, water storage requirements, the preliminary and short list of location alternatives for the new EST, the evaluation criteria, the evaluation results, the recommended alternative site, artistic renderings of the new EST, and how to provide input on the project.

A total of 17 public members attended the PIC and eight (8) comment sheets were received from the public at the PIC.

Copies of the display materials, and sign in sheet of the PIC are provided in Appendix C.

6.1.4 Notice of Display Board Posting

During PIC #1 the project team was made aware that the PIC notices sent by mail were not received until the day of the event and not all residents who wished to attend the PIC were able to. As such, the project team issued a Notice of Display Board Posting.

The Notice of Display Board Posting was issued on November 19, 2019, emailed or mailed to interested public, stakeholders, agencies, and First Nation communities, and also hand delivered to properties in the area between Lookout Street and Haist Street in Fonthill, and to those who specifically requested hard copies of the PIC materials during the PIC.

The Notice provided information on where to view the PIC #1 panels on the Region's and Town of Pelham's websites and advised how and when to provide comments on the PIC material.

The Notice also advised that another PIC (PIC #2) would be held to provide an update on the comments received on the PIC #1 material and further findings of the Class EA.

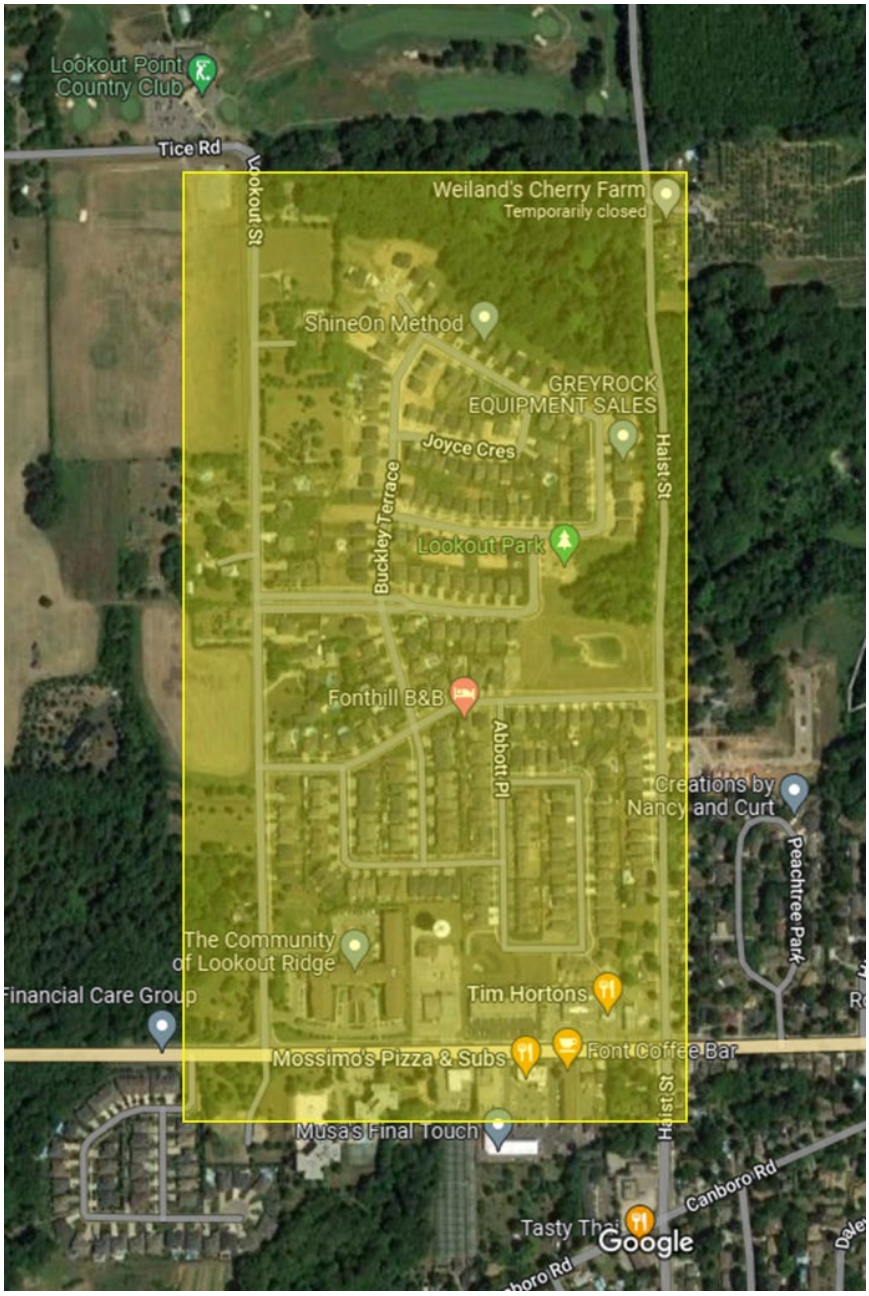


Figure 6-1 – Notice of Display Board Posting Approximate Hand Delivery Area

Copies of the mailing list and notice are provided in Appendix B.

6.1.5 Notice of Public Information Centre #2

Based on the comments received for PIC #1 in November 2019, the need for additional consultation and review of the potential sites for the new EST was identified. As such, the Project Team reconsidered and re-evaluated suitable sites within the Town of Pelham for the construction of a new EST and the necessary improvements to the existing water

service area to identify a recommended solution. The updated study results were presented at a second PIC session, PIC #2.

The Notice of Public Information Centre (PIC) was published on August 18, 2021 in the Voice of Pelham, and on August 19, 2021 and August 26, 2021 in Niagara This Week. The notice was also emailed or mailed to interested public, stakeholders, agencies, and First Nation communities and published on Niagara Region's website, Facebook, and Twitter.

The notice provided an update on the Class EA status. The notice provided instructions to participate in virtual PIC from August 31, 2021 to September 14, 2021, and that questions and comments on this project should be submitted to the Region or R.V. Anderson Associates Limited at the end of the virtual PIC review period.

Copies of the mailing list, notice, newspaper ads, and other documents are provided in Appendix B.

6.1.6 Public Information Centre #2

Due to the COVID-19 Pandemic, PIC #2 was held virtually. Project information, a project overview video walking through the PIC Panels, and transcript were posted on Niagara Region's website for viewing.

All PIC material was posted by August 31, 2021 and the project team requested that any questions or comments be submitted via an online form or by contacting one of the project team members. Questions or comments were requested to be received by September 14, 2021, approximately two (2) weeks following the posting of the PIC material.

The PIC material presented an introduction and overview of the Class EA process, the existing improvements that needed to be addressed, potential sites that were considered for the new EST, the evaluation criteria, the evaluation results, the recommended alternative site, artistic renderings of the new EST.

A total of seven (7) comments were received from the public for PIC #2.

Copies of the PIC panels and transcript are provided in Appendix C.

6.1.7 Notice of Completion

The Notice of Completion will be published on Niagara Region's website, in The Voice of Pelham, and in Niagara This Week upon completion of the study.

A copy of the New Pelham Elevated Storage Tank Class EA Project File Report will be posted on Niagara Region's website for a 30-day review period.

A copy of the notice is provided in Appendix B.

6.2 First Nations and Indigenous Engagement

6.2.1 Engagement as Part of the Class EA Process

Various engagement initiatives were conducted with First Nations and Indigenous Communities throughout the Study. The following communities were contacted, as per the list of potentially affected communities provided by the MECP on June 14, 2019:

- Mississaugas of the Credit First Nation
- Six Nations of the Grand River Territory
- Haudenosaunee Confederacy Chiefs Council

Additionally, the following communities were contacted based on the 2016 MSP mailing list:

- Assembly of First Nations
- Association of Iroquois and Allied Indians
- Niagara Region Metis Council
- Metis Nation of Ontario

Two (2) of the First Nations and Indigenous Communities which were contacted expressed an interest in the project – the Mississaugas of the Credit First Nation and the Six Nations of the Grand River Territory. Communications with the First Nation and Indigenous groups are summarized in Table 6-1.

Copies of the correspondence with the First Nations and Indigenous Communities are provided in Appendix D.

6.2.2 Engagement as Part of the Archaeological Assessment Process

The Mississaugas of the Credit First Nation, Six Nations of the Grand River Territory, and Haudenosaunee Development Institute were informed that Archaeological Services Inc. (ASI) would be completing a Stage 1 and Stage 2 Archaeological Assessment for the project.

Both the Mississaugas of the Credit First Nation and Six Nations of the Grand River Territory expressed interest and were present during the fieldwork completed by ASI during the Stage 2 assessment. No response from the Haudenosaunee Development Institute was received.

Additionally, the draft Stage 1 and 2 report was circulated to all three communities for comment/input.

Records of the engagement for the Stage 1 and Stage 2 Archaeological Assessment are included in Appendix F, along with a copy of the assessment report.

Table 6-1 – Summary of Consultation with First Nations and Indigenous Communities

Community	Contact Points	Comments / Questions	Resolution / Response
Mississaugas of the Credit First Nation (MCFN)	• Notice of Commencement – Emailed	At this time, MCFN does not have a high level of concern regarding the proposed project and therefore, by way of this letter, approves the continuation of this project. However, MCFN requests that you continue to notify us about the status of the project. In addition, we respectfully ask you to immediately notify us if there are any changes to the project as they may impact MCFN's interests and that you please provide us with a copy of all associated environmental and archaeology reports. This includes, but is not limited to changes related to the scope of work and expected archaeological and environmental impacts.	Stage 1 and 2 Archaeological Reports and Environmental Report will be sent for MCFN review once reports are completed.
	• Notice of PIC #1 – Mailed & Emailed • Notice of Display Board Posting – Mailed & Emailed • Notice of PIC #2 – Emailed	No further responses received.	Follow up when Notice of Completion is sent.
Six Nations of the Grand River Territory	• Notice of Commencement - Mailed	No response received.	Follow up with PIC Notice.
	• Notice of PIC #1 – Mailed & Emailed	Thank you for respecting our land rights and the legal duty to consult with our Nation. Be advised, this project notice is within our treaty land and are subject to the unresolved land rights issues of the Six Nations of the Grand River and litigations against Canada and Ontario. Although this property falls outside the Haldimand Treaty area of 1784, it does fall within the 1701 Fort Albany / Nanfan Treaty area. The terms and conditions of the Fort Albany/Nanfan Treaty are affirmed and protected in Canada's Constitution. Six Nations Elected Council would like to thank you for providing the notice on this project. Six Nations is concerned about any development relating to land, water and resources which occur throughout their treaty territory and any archeological issues associated with such development(s). At this time, we have no further comments on this project, however, wish to be kept up to date on this and other developments under your jurisdiction and within our Treaty Lands.	Follow up with Display Board Posting Notice.
	• Notice of Display Board Posting – Mailed & Emailed • Notice of PIC #2 – Mailed & Emailed	No further responses received.	Follow up when Notice of Completion is sent.
Haudenosaunee Confederacy Chiefs Council	• Notice of Commencement – Mailed • Notice of PIC #1 – Mailed & Emailed • Notice of Display Board Posting – Mailed & Emailed • Notice of PIC #2 – Mailed & Emailed	No response received to date.	Follow up when Notice of Completion is sent.
Assembly of First Nations	• Notice of Commencement – Mailed & Emailed • Notice of PIC #1 –Emailed • Notice of Display Board Posting – Emailed • Notice of PIC #2 – Emailed	No response received to date.	Follow up when Notice of Completion is sent.
Association of Iroquois and Allied Indians	• Notice of Commencement – Mailed • Notice of PIC #1 – Emailed • Notice of Display Board Posting – Emailed • Notice of PIC #2 – Emailed	No response received to date.	Follow up when Notice of Completion is sent.

Community	Contact Points	Comments / Questions	Resolution / Response
Niagara Region Metis Council	• Notice of Commencement – Emailed • Notice of PIC #1 – Emailed • Notice of Display Board Posting – Emailed • Notice of PIC #2 – Emailed	No response received to date.	Follow up when Notice of Completion is sent.
Metis Nation of Ontario	• Notice of Commencement – Emailed • Notice of PIC #1 – Emailed • Notice of Display Board Posting –Emailed • Notice of PIC #2 – Emailed	No response received to date.	Follow up when Notice of Completion is sent.

6.3 Agencies, Utilities, and Community Consultation

As part of the consultation process, various agencies, regulatory authorities, utilities, and community groups were contacted for input during the Class EA. A few of the key stakeholders contacted included various government ministries (e.g., MECP), conservation authorities (e.g., Niagara Peninsula Conservation Authority), and utility providers (e.g., Bell and Rogers), and other regulatory agencies (e.g., Niagara Escarpment Commission). For a full list of all agencies/authorities contacted, please refer to Appendix B.

The Niagara Escarpment Commission (NEC) and Ministry of Natural Resources (MNRF) have both been consulted on this project to minimize impacts to the escarpment areas, including viewscapes. Further consultation and approvals will be coordinated during detailed design for the preferred alternative.

Table 6-2 summarizes the feedback and input provided during the Class EA. Copies of the questions/feedback and responses are included in Appendix D.

Table 6-2 – Summary of Agency Contacts and Areas of Interest

Name	Area of Interest	Comment / Input	Resolution / Response
Ministry of the Environment, Conservation & Parks (MECP)	Agency - General Class EA Process & Duty to Consult	June 14, 2019: This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Region of Niagara has indicated that its study is following the MEA Class EA Schedule "B" process in order to determine the preferred alternative for a new elevated water storage tank and transmission system upgrades. The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before the Region of Niagara may proceed with this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of consultation to project proponents while retaining oversight of the process. Your proposed project may have the potential to affect Aboriginal or treaty rights protected under section 35 of Canada's *Constitution Act 1982*. Where the Crown's duty to consult is triggered in relation to your proposed project, the MECP is delegating the procedural aspects of rights-based consultation to you through this letter. The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit. Based on information you have provided to date and the Crown`s preliminary assessment you are required to consult with the following communities who have been identified as potentially affected by your proposed project. Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link: https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process Additional information related to Ontario's *Environmental Assessment Act* is available online at: www.ontario.ca/environmentalassessments You must contact the Director of Environmental Assessment and Permissions Branch (Director) under the following circumstances subsequent to initial discussions with the communities identified by MECP: • Aboriginal or treaty rights impacts are identified to you by the communities; • You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right; • Consultation has reached an impasse; • A Part II Order request or elevation request is expected. The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role the Region of Niagara will be asked to play should additional steps and activities be required. The *EA Act* has provisions that allow interested parties to ask for a higher level of assessment for a Class EA project if they feel that outstanding issues have not been adequately addressed by the project team. This is referred to as a Part II Order request. Please note that such requests must be addressed in writing using the MECP's standard Part II Order Request Form. The standard Part II Order Request Form is available on the Ontario government Forms Repository website (http://www.forms.ssb.gov.on.ca/) and then found by searching "Part II Order" on the Repository's main page. A copy must be sent to the Minister of Environment, Conservation and Parks, as well as to the Director of the Environmental Assessment and Permissions Branch by the end of the and Parks, public review period.	June 14, 2019: Updated mailing list with appropriate contacts for future project communications. A draft copy of the Project File will be sent to MECP once it is ready.

Name	Area of Interest	Comment / Input	Resolution / Response
		A draft copy of the Project File should be sent to me once it is ready. Please allow a minimum of 30 days for MOECC's technical reviewers to provide comments on the draft Project File.	
Crown-Indigenous Relations and Northern Affairs Canada & Indigenous Services Canada	Agency – Indigenous Relations	December 9, 2019: Your inquiry has been forwarded to me as the appropriate person. Thank you for the information.	December 9, 2019: Updated mailing list with appropriate contact for future project communications.
Ministry of Natural Resources and Forestry (MNRF)	Agency – Natural Resources, Species at Risk, Regulated Areas, etc.	June 3, 2018: The Ministry of Natural Resources and Forestry (MNRF), Guelph District Office, can confirm receipt of the 'Pelham Elevated Tank Municipal Class Environmental Assessment (EA)' Notice of Study Commencement. My colleague Karina Cerniavskaja from the MNRF Aylmer District Office also forwarded your email to me for review. We understand that the Region of Niagara is reviewing the proposed elevated water storage tank and transmission system upgrades in accordance with a Schedule B Project under the Municipal Class EA. It is also understood that the project team has short-listed five potential locations for the elevated water storage tank. These locations are identified on the maps provided in your email. We can confirm that the Fonthill Kame Delta provincially significant earth science Area of Natural Scientific Interest (ANSI) is within the EA study area. The ANSI was confirmed by the Ministry in 2013. The entire kame delta is a very large deposit of glaciofluvial sand and gravel left by the retreating Wisconsin glaciers. It is one of the most dominant landforms on the Niagara Peninsula, and is characterized as having the highest elevation in Niagara Region at 290 metres above sea level. This contributes to a unique microclimate that is supportive of the production of tender fruits. The Fonthill Kame Delta ANSI captures the best representation of five identifiable geomorphic themes that make up the landform, and which serve to demonstrate the sequence of post-glacial events. Regarding the ANSI related questions in your email, we can offer the project team the following comments for your consideration: **Questions 1 and 3:** For the purposes of this EA, it is recommended that the Fonthill Kame Delta ANSI be included in the evaluation of the project's potential impacts on the environment. Based on our Ministry's mandate to promote healthy and sustainable ecosystems, conserve biodiversity, and wisely manage natural resources, we encourage that the Region avoid impacting the ANSI. However, we do appreciate that the purpose of the Municipal Class EA is to consider, and to balance, the potential impacts of a project on the environment in a broad sense. If the evaluation of the alternatives may result in infrastructure being sited in the ANSI, we recommend that the Region limit any significant grading of the ANSI's landform features, and maintain the educational values of these features (e.g. important viewscapes). The attached Fontfill Kame Delta ANSI Inventory Checklist may provide some useful information on the landform features and the sensitivity of these features.	May 30, 2019: We have been retained by the Regional Municipality of Niagara for the Pelham Elevated Tank Class Environmental Assessment and Enhanced Conceptual Design project. Consequently, we have identified five alternative locations for the elevated tank, and we are currently in the process of evaluating them. Please find attached the aerial image and the MNRF natural heritage map showing the five options being considered. From the maps, it appears that Options 2A, 2B and 3 are located at areas designated as "provincially significant earth science ANSI" area. Many of the options also appear to be in "Ecoregion-7E". Our enquiry is as follows: 1. Are there any restrictions from using any of the options for the location of the elevated tank? 2. What are the permitting requirements for these options? 3. Are there any special precautions that should be taken when siting an infrastructure in any of the identified locations?

Name	Area of Interest	Comment / Input	Resolution / Response
		Question 2: An authorization from the Ministry is not required to address the Fonthill Kame Delta ANSI. We would also like to take this opportunity to highlight some additional information regarding the Greenbelt Plan and the Aggregate Resources Act (ARA) to inform the project team's review of the EA. It appears that several of the short-listed locations for the water storage tank are within the Protected Countryside of the Greenbelt Plan. This also includes the Greenbelt Natural Heritage System. The Greenbelt Plan provides provincial policy direction (e.g. Sections 4.2, 4.2.1 and 4.2.2) for new or expanding infrastructure in the Protected Countryside. It is recommended that the project team review the relevant policies of the Greenbelt Plan to support the decision-making for the EA. Location 'Option 6' also appears to be on lands that are currently licensed under the ARA to Lafarge Canada Inc. Please not that this license must be surrendered, or partially surrendered, to the MNRF prior to any development commencing within the licensed area that would be inconsistent with the approved ARA site plans. It is recommended that the Region discuss the existing ARA license with Lafarge to inform the review of Option 6. When the information becomes available, the MNRF would appreciate the opportunity to review any draft reporting in support of the EA that addresses the comments above. If further comment or clarification is required, please contact the undersigned.	
Niagara Region - Planning and Development Services Department	Agency - Planning and Development Services Department	June 26, 2019: I've screened the sites shown in the email trail below and provide the attached maps and following natural heritage-related comments: 1. All options outside the urban area are located within the Greenbelt Plan (2017) Protected Countryside. Greenbelt policies permit infrastructure approved through an EA process subject to the conditions listed in the Greenbelt Plan Sections 4.2.1 and 4.2.2. 2. Option 1 is located in the urban area – no environmental features. 3. Options 2A and 2B are both located within the Provincially Significant Fonthill Kame Delta Earth Science Area of Natural and Scientific Interest (ANSI). Regional policies permit development and/or site alteration within Earth Science ANSIs provided "no significant negative impacts" on the features or functions for which the area was identified. Infrastructure is permitted "if there is no reasonable alternative location" and it's "designed to avoid or minimize negative impacts." These sites are also located in proximity to Significant Woodland and Fish Habitat (i.e., key natural heritage and hydrologic features as per the Greenbelt Plan) which should be avoided. 4. Option 3 is also located within the ANSI, and the small woodlot at the rear of the property is designated as Significant Woodland. 5. Option 4 appears to be located within the urban area, but a portion may be located within the Niagara Escarpment Plan area – it's difficult to tell from the map provided. Significant Woodland is located on or adjacent the property. 6. I do not see an Option 5 and there are no environmental features in the Option 6 area. Let me know if you have any questions or need further information.	June 26, 2019: Thank you for passing that along. It is very similar to the data we found from NPCA and MNRF. So it's good to get the confirmatory information from the Region's environmental dept as well.

<table>
<tr><th>Name</th><th>Area of Interest</th><th>Comment / Input</th><th>Resolution / Response</th></tr>
<tr><td></td><td></td><td>Regional staff reviewed the 3 shortlisted sites from the display boards against policies in the 2014 Provincial Policy Statement (PPS), the 2017 Greenbelt Plan, the 2019 A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan) and the Regional Official Plan (ROP). Relevant policies in the ROP should be considered as part of the EA, including policies regarding the provision of adequate water, sewer, and stormwater services to meet existing and future needs as a result of existing and planned developments in the service area. Specifically, it is noted that under Policy 4.C.1.1 b) the Region will promote intensification within the Built-Up Area by supporting infrastructure development and improvements in municipally designated intensification areas where upgrades to Regional infrastructure works are required. Policy 4.C.5.1 f) calls for Greenfield Areas to be planned as compact, complete communities by ensuring that the provision of municipal servicing is in accordance with the water and wastewater servicing master plans. Section 8 of the ROP contains additional policies relative to infrastructure. The following chart summarizes the policy designations for the 3 short listed sites:</td><td></td></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Site</th><th>PPS</th><th>Greenbelt</th><th>Growth Plan</th><th>Regional Official Plan</th></tr>
<tr><td>2B: 1542 Lookout Street</td><td>Prime Agricultural Land- Specialty Crop Area</td><td>Protected Countryside Area</td><td>Natural Heritage System</td><td>Unique Agricultural Area</td></tr>
<tr><td>3: South of Existing Driving Range (220 Tice Road)</td><td>Prime Agricultural Land- Specialty Crop Area</td><td>Protected Countryside Area</td><td>Natural Heritage System</td><td>Unique Agricultural Area</td></tr>
<tr><td>4: 1621 Lookout Street (Existing Bell Tower)</td><td>Settlement Area</td><td>N/A</td><td>Greenfield Area</td><td>Urban Area</td></tr>
</table>
</td><td></td></tr>
<tr><td></td><td></td><td>Constraints
The following chart summarizes the constraints for the 3 short listed sites:
<table>
<tr><th>Site</th><th>Archaeology</th><th>Core Natural Heritage</th></tr>
<tr><td>2B: 1542 Lookout Street</td><td>High potential - watercourses within 300m</td><td>Provincially Significant Earth Science Area of Natural and Scientific Interest (ANSI)- Fonthill Kame Delta (entire property identified)</td></tr>
<tr><td>3: South of Existing Driving Range (220 Tice Road)</td><td>High potential - watercourses and historic transportation route (Tice Road) within 300m</td><td>Significant woodland (west edge of the area proposed for the ET)
Provincially Significant Area of Natural and Scientific Interest (ANSI)- Fonthill Kame Delta (area south of existing driving range identified)</td></tr>
<tr><td>4: 1615 Lookout Street (Existing Bell Tower)</td><td>No potential (to be verified by Town of Pelham based on their Heritage Master Plan)</td><td>No features</td></tr>
</table>
</td><td></td></tr>
</table>

Name	Area of Interest	Comment / Input	Resolution / Response
		Archaeology Based on Provincial screening criteria, sites 2B and 3 exhibit high potential for the discovery of archaeological resources. The Town of Pelham has an approved Heritage Master Plan and, therefore, has jurisdiction on matters related to archaeological resources. The project team should refer to Town comments on any archaeological requirements during the EA or warning clauses respecting the possible discovery of deeply buried remains during construction being placed on contractor drawings. **Core Natural Heritage** As identified on the chart above, the Region's Core Natural Heritage mapping identifies environmental features on site 2B and 3. According to Regional Official Plan (ROP) Table 7-1 and associated policies, an Environmental Impact Study (EIS) is required to demonstrate that over the long term, there will be no significant negative impact on these features if development is proposed within 120m. As part of the EA process, consideration should be given to the impact of the proposed ET if it is proposed within 120m of the environmental features on the preferred site. Furthermore, staff recommend that the project team conduct due diligence prior to *any future works* on the preferred site to ensure they are not in contravention of the *Endangered Species Act*. The information and comments above are provided to assist the project team in the completion of the Class EA. Regional Planning and Development Services staff appreciate the opportunity to provide comments as part of the Class EA. Please keep us informed as this project proceeds, including the circulation of any future notices and a copy of the final Class EA upon completion. Should you have any questions concerning the above comments, please feel free to contact me.	
Niagara Escarpment Commission	Agency – Niagara Escarpment	November 12, 2019: I received the attached Notice of PIC for a Municipal Class Environmental Assessment for an elevated water tank in Pelham at the edge of the Niagara Escarpment area of Development Control. Please be advised that we have an interest in this EA and request to receive all associated information for review and comment. Please ensure to include us in future correspondence relating to this EA. September 14, 2021: Thank you for sending the Notice of Public Information Centre #2 for the Pelham Elevated Tank Municipal Class Environmental Assessment to Niagara Escarpment Commission staff. NEC staff have reviewed the presentation and note that Alternatives 1 and 2 are within the Niagara Escarpment Plan (NEP) Area and within the NEC's Development Control Area. NEC staff understand that these locations have not been selected, however if there are any revisions to the location, an NEC Development Permit would be required in these locations. Given the proximity of Alternatives 1 and 2 to the Escarpment Brow, visual impacts would be a significant concern and the application may not satisfy the scenic resources policies of the NEP. Alternative 3 has been selected as the alternative under review. Alternative 3 is not within the NEC Development Control Area or Niagara Escarpment Plan Area. However, NEC staff have an interest in ensuring that the Escarpment environment is protected. NEC staff have some concerns about the impact on the scenic resources of the Escarpment. NEC staff request additional information about the visual impact of the water tower in its proposed location: Are there additional photo simulations available for this location (i.e., additional views from Tice Road and Lookout Street)? Information on water tower design (lighting, signage, colour, telecommunications or other structures/arrays).	November 12, 2019: Added to project mailing list for future communications. August 25, 2021: On behalf of the Regional Municipality of Niagara, please see enclosed the Notice of Public Information Center #2 for the Pelham Elevated Tank Municipal Class Environmental Assessment and Enhanced Conceptual Design. This notice is sent to your attention as it was deemed that you may be an interested stakeholder. Should you wish to stop receiving notices pertaining to this project or would like to direct it to alternate recipient, please advise the undersigned. November 22, 2021: Thank you for your email below, we are working on providing a response to NEC's questions and hope to have that to you soon. With regards to the NEC Development Permit if Alternatives 1 or 2 were selected, I've left a couple voicemails on your office phone. We are looking for

Name	Area of Interest	Comment / Input	Resolution / Response
		Although Alternative 7 has been ruled out through the EA process, this location is preferred from the perspective of visual impacts on the Escarpment. Please note that the selected Alternative 3 is also within the Fonthill Kame Delta Earth Science ANSI. Please keep NEC staff informed throughout the process. If there are any changes to the design or location, please let us know as our comments may change. November 30, 2021: As a follow up to our conversation last week, I am providing a list of the applicable sections of the Niagara Escarpment Plan (NEP) as well as some additional viewpoints for photo simulations. If an alternative within the Niagara Escarpment Plan area is selected (Alternative 1 or 2), the proposal is subject to the policies of the NEP. A link to the NEP can be found here: https://www.escarpment.org/LandPlanning/NEP. The lands for Alternatives 1 and 2 are within the NEC's Development Control Area and as such a Development Permit Application would be reviewed when the EA process is complete.	some additional information on the development permit process and what information NEC would require if one of these alternatives was selected. Would you be able to give me a call to discuss further, or provide some additional information via email?
		The subject lands for both alternatives are designated as Escarpment Protection Area by the NEP. The policies for the Escarpment Protection Area can be found in Part 1.4 of the NEP. Infrastructure is listed as a permitted use, however development is not permitted as of right and must meet the Development Criteria in Part 2 of the NEP. Our concerns would be related to the protection of natural heritage and hydrologic features, and in particular the Fonthill-Kame Delta Earth Science ANSI, prime agricultural lands, and the scenic resources and landforms of the Escarpment. As we had discussed, we do have some concerns from an environmental and visual perspective with the lands that are in the NEP area. We have not completed an analysis of the proposal on the subject lands, however the proposal would be assessed under the following Development Criteria in Part 2: • Part 2.2: General Development Criteria, • Part 2.6: Development Affecting Water Resources, • Part 2.7: Development Affecting Natural Heritage, • Part 2.8: Agriculture, • Part 2.10: Cultural Heritage, • Part 2.12: Infrastructure, and • Part 2.13 Scenic Resources and Landform Conservation **Comments from the NEC's Landscape Architect on Photo Simulations:** I have one comment on the photo simulations already completed: • View 1 – The tower is shown rising above a forested area but I think this is incorrect – this forested area should be behind the water tower, not in front of it. When viewed from the driving range at Tice Road, there would be no vegetation or limited vegetation hiding the base of the tower (based on air photography). Perhaps they can revisit this photo simulation and confirm their findings. I'm suggesting two additional viewpoints (see attached map) to capture views from the Escarpment Plan Area. • View 4 – View from Effingham Road looking toward the brow of the Escarpment. This photo is required to confirm if the tower will be visible rising above the brow. • View 5 – View along Tice Road at the top of the Escarpment.	

Name	Area of Interest	Comment / Input	Resolution / Response
		Photos taken in leaf off conditions are preferred in order to understand the worst case scenario for visual impacts. Panoramic photos may be required to obtain the context for each view. Ensure a min. of 30% overlap between photos in a panorama to minimize distortion. If the Region does intend to pursue Alternative 1 or 2 further, please let us know and we can provide more detailed comments.	
Hydro One Networks Inc.	Utility - Hydro Power Distribution Networks	June 17, 2019: Following our preliminary assessment, we confirm there are no existing Hydro One transmission or distribution assets in the subject area. Please be advised that this is only a preliminary assessment based on current information. No further consultation with Hydro One Networks Inc. is required if no changes are made to the current information. However, if plans for the undertaking change or the study area expands beyond that shown, please contact Hydro One to assess impacts of existing or future planned electricity infrastructure. Any future communications are sent to Secondarylanduse@hydroone.com.	June 17, 2019: No changes to the subject area were made. Hydro One was taken off the mailing list for the project.
Rogers Communications Inc.	Utility - Rogers Communications Towers and/or Antenna	November 14, 2019: Requested call to discuss project. November 18, 2019: Rogers confirm they have equipment and antennas on the existing EST and inquired as to whether their equipment would be relocated to the new EST. Rogers provided map of communications towers in the area owned by Rogers and other major communications carriers. Rogers advised the communications tower across from Marlene Stewart Drive is visible on Google Earth but does not appear to belong to one of the major carriers. The tower likely belongs to a smaller ISP such as Cogeco or Silo Wireless. The municipality would likely have more information on the lease title for the property.	November 15, 2019: Advised intent is to construct the new EST and relocate the required communications devices before the existing EST is decommissioned/removed. Construction is planned for 2022. November 18, 2019: Requested information on the communications tower across from Marlene Stewart Drive. Requested Rogers to review PIC #1 materials and fill out comment sheet if any further concerns.
Bell Canada	Utility - Bell Canada Communication Towers and/or Antenna	June 13, 2019: Sounds like an interesting project, considering this process is non-invasive and you are working with our partners at Niagara Region I approve your accessing the location to conduct the required work. Please be sure to coordinate each site visit with Pat Ugulini, cc'd on this email. If this location becomes of interest, we'll need to bring in all stake holders including our planners and of course Bell Canada. Please keep me posted as this progresses. Yes, if I can be notified when they are on site that would be great – Thanks! June 26, 2019: If and when this location makes the "short list" Bell will have to bring in their engineering team and of course Bell Canada who own this property, construction would need to be approved by them. Cannot comment on setbacks - engineering team dictates. No build approved at this time, only environmental investigation. June 27, 2019: We will need to bring in our RF (radio frequency) engineers to discuss the impact of building a water tower onsite, the trick will be not to "block" our signal from the tower by placing a significant structure at the same site. Before this, need to know the dimensions of the proposed water tower and how the position of that structure would relate to the direction in which we are propagating signal from the communications tower onsite.	June 13, 2019: Will keep Greg in loop in case site becomes a preferred location and partnering required. Asked whether would like to be added to stakeholder list. Noted RVA will coordinate with Pat for specific timing of our subconsultant's visit. They have just advised that their first visit is planned for June 28th. Please confirm that is acceptable. If you wish, we can ask them to call/check in with you when they arrive on site. June 25, 2019: Request for info on any clearance requirements in order to keep the bell tower functional during the construction of the elevated tank. Reminder that nat. environment subconsultant will be out at the site June 28th for the field visit to look for species at risk/habitat of scientific interest. They have been asked to contact Pat when they are on site.

Name	Area of Interest	Comment / Input	Resolution / Response
		Open to partnership once study is completed. To date I've not informed anyone of your interest in using this location for a water tower and as such we are not prepared to have this conversation. In the instance the site "passes" the environmental assessment I will inform our planners and Bell Canada how owns the land. It is possible that they oppose the idea entirely or endorse, but I don't want to take this to them until you've completed this study. July 17, 2019: Bell sent notification internally to the required parties about conference call scheduling and project. Inquired as to what kind of partnership type is envisioned (e.g., land lease vs severance), along with size, and location of the ET to review with RF engineers. July 31, 2019: Bell advised they are not able to proceed any further with this site as a possible ET location - two communication towers with a total of six (6) different companies propagating signals of various kinds that service the local area including 911 services. RF engineers reviewed and determined that if this structure were to be built, it will block and or negatively impact the signal of all of companies located at this site.	June 26, 2019: Confirmed at this time we are only doing an environmental assessment for the potential Elevated Tank sites and Friday this week is when our subconsultant for the natural environment investigation will happen – which is non-intrusive. Clarified clearance requirement the bell tower were requested to help us consider the social and technical impacts (including if the bell tower functionality would be impacted as result of the elevated tank construction), and if yes, how to minimize those impacts, if possible. June 27, 2019: Suggested coordinate a conference call just to have the discussion so we better understand all parameters associated with this potential site as we are in the preliminary evaluation process now. Advised that the Region and Town have narrowed down sites to the Bell Tower Site and another business and are seeking input before the Fall 2019 Public Open House, specifically whether Bell is still open to a partnership. Asked whether possible to set up a conference call next week to discuss further. July 18, 2019: RVA provided preliminary concepts of the ET height, sizing, and site layout. Asked whether a certain buffer distance (for guy wires or to protect workers from radiation etc.) is required? Are there any height limitations/impacts that the water tower will have on the Bell Tower during construction? Can the Bell Tower be kept functional during the water tower construction period (9months-1 year), or will it need to be temporarily relocated? Can the same access be used for construction and post construction, or will a separate access be required? Does the Bell Tower site have any existing geotechnical/hydrogeological information that can be shared with the Region? July 31, 2019: Bell tower site was removed from consideration as a potential location for the new EST.

Name	Area of Interest	Comment / Input	Resolution / Response
Lafarge Canada Inc.	Business – Lafarge Lands and Businesses	June 20, 2019: Thank you for the information provided. Lafarge has decided we are not interested in participating.	June 12, 2019: Summarized call including introduction to the project, requested access to site at Effingham St. and Highway 20 West to perform a natural environmental investigation, and advised of overall intent if site is determined to be a preferred location. June 20, 2019: Lafarge site was removed from consideration as a potential location for the new EST.

6.4 Public and Interested Stakeholder Consultation

Information, comments, and feedback were exchanged with the general public and interested stakeholders through two (2) PICs, as well as conversations and correspondence with the public. A summary of the comments/responses received from the public and interested stakeholders is summarized in the table below:

Table 6-3 – Summary of Public Comments Received & Responses

Name	Project Stage	Comment / Question	Resolution / Response
Public (1)	PIC #1 / Post-PIC #1	We didn't receive the Notice of Public Information Centre (PIC) until the day of the PIC. Some of us didn't have sufficient notice to attend the PIC.	We apologize and will look into the matter about the delayed notice mailing. We had put in the request with Canada Post to coincide the project notice mailings with the Voice of Pelham advertisements that occurred on Oct 23 and Oct 31. However, it appears that the mail outs did not get delivered on the date as originally intended. The same Notice was advertised in local newspapers and also posted on the Town of Pelham website.
Public (2)	PIC #1 / Post-PIC #1	Where can we get the information from the PIC?	The information panels that were presented at the PIC, and comment sheet, will be posted on the Region of Niagara and Town of Pelham websites.
Public (3)	PIC #1 / Post-PIC #1	Was an inground reservoir and pumping station considered (similar to the Shoalts Drive Reservoir)?	Yes, the Region and RVA had discussions regarding inground reservoir and pumping station vs floating storage (i.e. elevated tank). However, an inground reservoir and pumping station would require a large area of land to accommodate a 6 Million Litre reservoir. The life cycle cost (capital and operational & maintenance costs) associated with construction of such a large inground reservoir & pumping station would be much higher than an elevated tank. In addition, the large footprint would result in increased environmental impacts.
Public (4)	PIC #1 / Post-PIC #1	How much bigger/taller will the new elevated tank be?	The current elevated tank is 2.3 Million Litres and the new elevated tank will be 6 Million Litres to address current water storage volume shortage and accommodate growth. The new elevated tank will be 44m above ground, compared to the existing elevated tank at 29.5m above ground. A taller elevated tank is required to have sufficient pressure for the northern developed areas that are at a high elevation. This would mean that the existing elevated tank and associated booster station can be demolished after the new one is operational.
Public (5)	PIC #1 / Post-PIC #1	Although satisfied with the water service, some parts require more pressure	The new larger and taller elevated tank will be able to provide more water pressure. This will help with the northern Fonthill areas that are at a higher elevation.
Public (6)	PIC #1 / Post-PIC #1	Displays were good – easy to read. Very informed and knowledgeable staff at PIC	Thank you.
Public (7)	PIC #1 / Post-PIC #1	Consider 1574 Lookout Street property as a possible consideration – it is agricultural land in the NW part of the property, near Tice Road	Thank you for the suggestion. The project team will look further into this suggestion.

Name	Project Stage	Comment / Question	Resolution / Response
Public (8)	PIC #1 / Post-PIC #1	Great information. Pleased with the renderings of the new water tower and where it will be located (Alternative 3)	Thank you.
Public (9)	PIC #1 / Post-PIC #1	The new water tower's appearance will need to be maintained and avoid mold (on the north side) and discolouration	Yes, the coating technology of the elevated tanks have improved significantly over the years. This will help with the aesthetics of the new elevated tank. Routine maintenance of the tank will also help with the appearance.
Public (10)	PIC #1 / Post-PIC #1	What are the next steps after this PIC? When will the new tank be constructed?	The project team will review the public comments received and will undertake some archaeological and geotechnical field investigations on the preferred location. We will also continue discussion with the property owner of the preferred site (i.e., golf course) about property acquisition. A final report will be issued for public review Spring 2020. The elevated tank is tentatively scheduled to commence construction in 2022
Public (11)	PIC #1 / Post-PIC #1	Don't have a problem with the current water system	Thank you.
Public (12)	PIC #1 / Post-PIC #1	Concerned with the preferred location of new elevated tank due to proximity to the person's property (i.e., right behind their property).	We understand your concern. The project team did consider several other alternative locations, such as the Lafarge site and a few other areas along Tice Road, however these were ruled out due to limited space or refusal of the property owner in selling the land. At the moment, based on the evaluation of the 3 short listed alternatives, Option 3 (area south of the golf course driving range) appears to have the least negative impact overall. The project team would be happy discuss further with you on possible strategies to mitigate impacts.
Public (13)	PIC #1 / Post-PIC #1	Concerned about the mess, disturbance and access issues as result of construction	We understand your concern, and these will be carefully considered and mitigated where possible during design and construction phases of the project. Construction duration is expected to be about 1 year. Access along Lookout Street will be carefully considered and maintained during the design and construction phase of the project.
Public (14)	PIC #1 / Post-PIC #1	Great information. No opposition to Alternative 3 location.	Thank you.
Public (15)	PIC #1 / Post-PIC #1	I don't have water service although there is a watermain on Lookout Street. This is because the watermain is dead-ended and the subdivision behind my house didn't end up connecting to the Lookout Street watermain.	We're sorry to hear about your situation. Although this is not part of the scope of this Class Environmental Assessment, we will relay your comments to the Region/Town.
Public (16)	PIC #1 / Post-PIC #1	Why was the new elevated tank situated in an area that isn't close to where the new developments will be?	There is/was quite a bit of development occurring in this location. The preference is to locate the new elevated tank where the land is already at a high elevation in order to minimize the height of the tank itself. Based on the water model, the new elevated tank will be able to supply water to current and new areas of development in Fonthill and Fenwick.

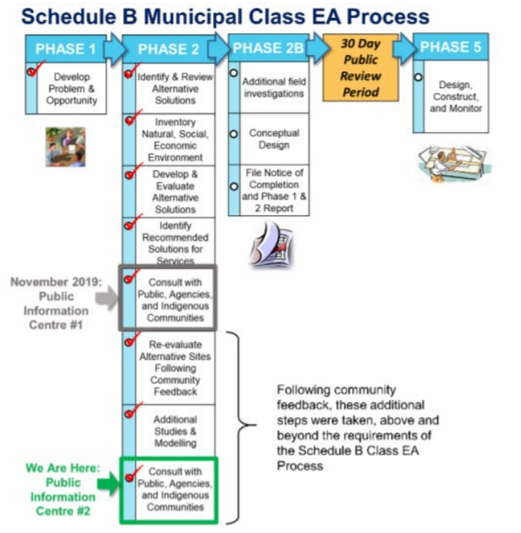
Name	Project Stage	Comment / Question	Resolution / Response
Public (17)	PIC #1 / Post-PIC #1	Did you consider having the tank near the El Crossley high school (Hwy 20)? There are large open fields and similar elevation there. Or somewhere along Canboro so that it's in middle of Fonthill and Fenwick?	Thank you for the suggestion. The project team will look further into this suggestion.
Public (19)	PIC #1 / Post-PIC #1	In agreeance with alternative three's location, but I would love to see the artists interpretation of the view from Marlene Stewart Dr, which you mentioned to exist, before I submit proper comments.	RVA provided the artistic rendering of the new elevated tank from the PIC Panels.
Public (20)	PIC #1 / Post-PIC #1	I turn on the tap and water always comes out. The water is clean and I can drink it. It tastes a little bad so I filter drinking water. Alternative 4 looks great. It provides an excellent aiming point for golfers (both going to the course and while on the course). Alternative 3 is okay also. The higher up the hill the better.	PIC #1 comment sheet sent via mail for project records. No response required.
Public (21)	PIC #1 / Post-PIC #1	Connected to a well that is drilled less than 17 feet from their septic tank. Appalled approval was given to relocate well so close to tank. Original well was at least 50 ft from the septic tank and therefore complied with the Ontario Building Code.	PIC #1 comment sheet sent via mail for project records. Comments do not pertain to this project.
Public (22)	PIC #1 / Post-PIC #1	What companies communication equipment are installed on the existing water tower at the firehall? Are these technologies going to be relocated to the new Pelham Elevated Water Tank Tower located on upper Lookout at once it is installed?	We have been in touch with various communication companies (for example Rogers, Bell etc.) regarding their equipment on the existing water tower and in the nearby areas and continue to be in communication with them as the project progresses. Whether or not the communication companies will want to relocate their equipment from the existing water tower to the new water tower is their choice. However the intention is to decommission the existing water tower once the new one is commissioned and operational.
Public (23)	PIC #1 / Post-PIC #1	Water pressure is excellent in this facility.	Thank you.
Public (24)	PIC #1 / Post-PIC #1	Leave existing ET in service, install new smaller ET at east end of Fonthill close to 406 for the future Fonthill expansion to eliminate Lookout area residents concerns. Or leave existing ET in service, install new smaller ground level tank at the lookout location, so height of tank is masked by trees. Or abandon existing ET, build new ground level tank, masked by trees.	Thank you for the suggestion. The project team will look further into this suggestion.
Public (25)	PIC #1 / Post-PIC #1	I wasn't in attendance for the public meeting, however, when the project description mentions decommissioning of the old water tank, does it mean the old water tower will be removed from the current location?	We would like to advise that the intention is to decommission (take out of service) and remove the existing water tank once the new water tank is commissioned and functional.

Name	Project Stage	Comment / Question	Resolution / Response
Public (26)	PIC #1 / Post-PIC #1	We were extremely disappointed when we learned that an elevated water tower could be placed across the road from us or north of us adjacent to the communications tower. We feel that either location would create an aesthetic eyesore in an upscale community and a reduction in market value of the houses. Had a water tower been there or was going to be built there we would not have purchased the lot. I am fairly familiar with the process of building development due to my engineering management experiences prior to retirement. It's multi-faceted process that takes many items into consideration before final resolution – location, cost, environmental, performance, aesthesis, community reaction etc. etc. I am certainly expressing a negative concern on the aesthetics and community reaction portion of the study. It seems to me that a location could be selected that meets all the other requirements but would not be in the middle of an existing or developing residential area (such as the east side of the Tice/Effingham intersection). Thank you very much for considering our concerns.	Thank you for your comments regarding the new Pelham elevated water tank. Your feedback is important and will be taken into consideration as part of the study. Your contact has been added to our stakeholder list so that you will receive future notices regarding the project.
Public (27)	PIC #1 / Post-PIC #1	Thanks for the follow up letter. I appreciated the openness of our discussion and the information you provided me. Has the decision already been made that the reservoir should be an elevated tower versus an underground tank? No matter what is built, pumps are required to elevate the water into the reservoir. Perhaps the energy balance of pumping water to the top of the tower may offset the cost of boosting the pressure for high elevation homes. This solution could eliminate much or all of the aesthetic concerns.	We recognize that a buried reservoir would be less visually intrusive and address the local residents' aesthetic concerns. However, the elevated tank is currently the preferred choice on basis of technical, financial, environmental considerations and from the size of land required. You are correct that the Pelham water distribution system already has an inground reservoir at Shoalts Drive. It currently pumps water up to the existing elevated tank on a periodic basis. The elevated tank can then feed the rest of the distribution system by gravity based on the 'stored' potential energy/pressure due to the tank's height. Without the elevated tank, the Shoalts drive pumping station would be in continuous operation to maintain the water distribution system at a certain pressure, which would increase the operation and maintenance cost of the system. The new elevated tank is also intended to be high enough to provide adequate pressure to the high elevated homes near the existing elevated tank, which currently have their pressures increased via another booster station dedicated to that higher elevation zone.

Name	Project Stage	Comment / Question	Resolution / Response
Public (28)	PIC #1 / Post-PIC #1	We are writing with our comments on the project. We would like to point out that we were not notified of the meeting on November 6, 2019 (nor of the project in general) even though the preferred location is right behind our residence. We did receive a hand-delivered notice of display board posting on November 19, 2019. We understand that the current water tower capacity is not sufficient for future demands. We also understand that a number of different sites have been considered and ruled out for various reasons. From the information session, it appears as though the preferred site (south of the driving range) has already been selected and possibly procured. Some of the evaluation comments seem to be biased towards the preferred site, with the biggest key being that the land could be acquired at a lower cost. The fact that the ET will be built on the Kame Delta Formation in an area designated as greenbelt is disconcerting for us. We also wanted to point out that the artistic renderings provided are misleading. Both of the views from Marlene Stewart Drive and Lookout Street are from much lower elevations so the perceptions are skewed and the tank is not as visible. We would like to see what an artist rendering would look from the front of our property at 1584 Lookout Street or from what will become the access road. I think the tank will be much bigger than reflected in the artistic renderings shown. Given that the proposed site is immediately behind our property and the access road borders our property, we seem to be affected the most and yet have been provided no information on the process until now. At this point, it seems as though any objections to the preferred site are futile. Therefore, we would like to address some specifics on how our property will be directly impacted by this and what we would like to be done. 1. During construction, we are concerned on the impact it will have on our property. Our backyard is immediately to the south of the proposed access road. If the access road is used for construction, there will be more dust and dirt than normal in our pool, hot tub, patio furniture and exterior of our house. Therefore, we would prefer that an alternative construction road be used. We are fine with the access road being put in, but don't want it used for construction. If it has to be used for construction, we would like compensation for extra cleaning of our property (pool, house, etc.). We would also like measures taken to minimize the dirt effect on our property (e.g. construction mesh barriers). 2. We would also like know what barriers are being put between the driving range, the access road and our property. We have a number of mature trees on that part of our property. We don't want these disturbed or harmed during construction of the access road or tank. If there is any damage, we want the trees to be replaced with similar sized trees.	The Public Information Center (PIC) held on Nov 6th was advertised on the Town of Pelham website and advertised in the Pelham voice. Notices were mailed out and unfortunately residents did not receive them until the day of the Public Information Center. If you did not receive one at all I can't answer as to why as they were delivered by Canada Post. I would like to clarify that the "preferred site" was based on information on hand at the time leading up to the PIC. The purpose of the Pelham Environmental Assessment project is to evaluate alternatives and based on multiple criterion choose a preferred site. At this point we have a shortlist of potential sites. No site has been selected and I can assure you that no property has been procured. No costs have been disclosed at this time therefore the statement regarding land being acquired at a lower cost is completely false. A second Public Information Center will be held in Jan/Feb. The date will be announced as soon as we have evaluated comments and suggestions of the stakeholders up to this point. I cannot address any of your specifics regarding the project and how it would affect your property at this time. No decisions regarding the site selection have been made as of yet. I will ensure you are added to our stakeholder list and receive all communications regarding this project. Thank you for providing your feedback.

Name	Project Stage	Comment / Question	Resolution / Response
		3. Similarly, we want to know what barriers are being put between the overflow pond and our property. We would like landscaping done (such as a hedge) to block the view of the base of the tank and any ponds. 4. Has the shadow impact to the neighbouring properties has been assessed? Have any shadowing studies have been done? We think there will be a shadow impact on our property and would like to see the results of a shadow study. 5. We would like the opportunity to get an opinion from a certified appraiser as to the impact of the tank on our property value. If there is a significant decrease, we want to discuss compensation. We would appreciate a response and further discussion on our concerns. Please confirm receipt of this email.	
Public (29)	PIC #1 / Post-PIC #1	Having reviewed the PIC documents re the above project, I have the following question for consideration. Since the preferred site is on the highest point in the peninsula, why do you need to construct an "elevated" tower? Can you not use a lower profile tank(s) that would have far less impact on neighbouring properties instead? ---------- Thank you for your prompt reply. I suggest that the proposed tower will be substantially higher than the existing one and I assume that our house is one of the few at the same height as the base of the new tower requiring a pumping station. I would recommend that the additional capital cost of this station and ongoing operating costs will be quite small and, when amortized over the volume of litres flowing through the system, will have minimal impact on water rates per litre. A lower profile tank would certainly have much less social impact on neighbouring properties such as ours. Thanks again for your consideration.	Thank you for your interest in the project and for your inquiries. The reason that an elevated tower is needed is because a certain minimum pressure is required in the distribution system (especially for the houses that are at the same high point of the water distribution system as the water tower). Please see below for the diagram that was shown in the public information centre, that has been updated slightly to address your question. The required pressure is achievable by having the water tower high enough to supply that pressure by gravity, or by having a booster station pressurizing water from a water tank/reservoir into the water distribution system. For example, there are some houses in the northwestern portion of Fonthill that were built at a similar ground elevation as the existing elevated tank. These houses do not get sufficient pressure from the existing elevated tank and as a result, a booster pumping station (which results in additional operational, maintenance and energy costs) had to be constructed to service these houses. A lower profile tank/buried reservoir was considered, however it would require a lot more land, and constant pumping to supply water (at the required pressures) to the system. For these reasons (amongst other reasons), this option was not considered further.
			The team has received a number of public comments and we are reviewing them. Another public information centre is being planned for early 2020 after considering the public comments. Future project notice will be issued with more details about the public information centre at a later date. If you have further questions or comments, please feel free to contact the project team. Thank you for your interest.

Name	Project Stage	Comment / Question	Resolution / Response
Public (30)	PIC #1 / Post-PIC #1	Where are the short list proposed sites, will expropriation of privately owned property be involved, will property owners be consulted in person by the region?	Thank you for your inquiry. Please refer to our Project Page: https://niagararegion.ca/projects/pelham-elevated-tank/default.aspx where you can find Frequently asked Questions as well as the Virtual Public Information Centre #2 that is happening from Aug 31 to Sept 14. I kindly ask that you view the presentation and submit your question/feedback via the online form. Responses to all inquiries will be posted on the project page September 28th.
Public (31)	PIC #2 / Post-PIC#2	Disturbance of the existing roadways, Hwy 20 and Lookout St, needs to be minimized for the construction of the transmission lines to the new water tower. Damaged pavement needs to be repaired promptly and complete new road resurfacing should take place as soon as possible. Also, exposed gravel roadway surfaces need to be promptly and regularly treated to minimize dust. Transmission line construction on Hwy 20 and Lookout St will result in traffic being diverted onto neighboring streets. What action will be taken by the Region to prevent traffic circumventing the construction by using Brewerton Blvd as a construction bypass? Also, will all construction equipment traffic be banned from the use of Brewerton Blvd and neighboring residential streets?	Thank you for your comments. Construction of the new watermains would be preferred to be completed within the rights-of-way or the shoulders of the existing roads to minimize the impact on the existing roads and pavement, where possible. However, this depends on the location of existing buried infrastructure and utilities, in order to avoid interference. Where pavement needs to be removed or is damaged during construction, the Contractor will be required to fully restore the area as soon as possible once the work is completed, weather permitting. It is possible that the area is only restored temporarily if the Contractor needs to complete additional work in that area later on, or if final restoration needs to be completed in a certain season to achieve the best results. Dust mitigation will be incorporated into to the requirements for the Contractor during construction. While rights-of-way or shoulders will be used where possible, construction of the watermains may still require lane closures or road closures. Closures will be kept to one lane where possible, to allow local traffic and emergency vehicles to still travel along the road and avoid the requirement of detour routes. There may be some delays anticipated along these routes to allow each side of traffic to alternate passing through the area. The Region will investigate the possibility of restricting any lane or road closure hours during key travel times (e.g., rush hour), and implementing signage for local traffic to use specific roads only, to minimize the impact on traffic overall and reduce the chance of traffic using local roads as a bypass. In cases where a full road closure is required, the duration of the closure will be kept as short as possible. The Region will investigate the possibility of route restrictions for construction vehicles/equipment on local residential streets and incorporate these into the Contract Documents during the design process.
Public (32)	PIC #2 / Post-PIC#2	Locate PRV at Haist and Hwy20 out of the intersection for minimal disruption during construction and also during future maintenance activities. The information was clear and decision process was understandable. I agree with the conclusion and hope that the project moves forward quickly as my fire flows and home water pressure will be improved when this is completed. Thanks for the opportunity to review the project!	Thank you for your comments. Yes, the intent is to locate the PRV chamber as far out or to the side of the intersection at Haist Street and Highway 20 as practicable, to minimize interruption to traffic during construction and for future maintenance activities. The exact location of the PRV chamber will be limited by existing infrastructure through the intersection (e.g., existing watermains, sanitary sewers, hydro, etc.) and will be determined during detailed design.

Name	Project Stage	Comment / Question	Resolution / Response
Public (33)	PIC #2 / Post-PIC#2	This correspondence is being sent further to our electronic mail message sent on December 3, 2019 after the Public Information Centre (PIC) #1 on November 6, 2019. Despite the passage of over 21 months, to date we have not received a reply to our December 3, 2019 e-mail, in particular, to the following issues raised at that time: 1. Use of an alternative road rather than the proposed access road during construction; 2. Use of barriers between the driving range, the access road and our properties and replacement of any existing trees that may be damaged during construction; 3. Use of barriers between the overflow pond and our properties such as substantive landscaping to block the view of the base of the tank and any ponds; 4. Production of a shadow impact study so that we can assess the impact on our properties; and 5. The opinion of a certified appraiser as to the impact of the tank on our property values. We feel that additional studies must be undertaken and we would like the opportunity to review them, including the following: a) Stage 2 Archaeological Assessment; b) Geotechnical/Hydrogeological study; c) Topographic survey; d) Environmental impact study including effects on wildlife, vegetation, habitats, air quality, noise impact, source water protection and climate change; and e) Land & Use Impact study as the subject site is located in the Greenbelt Area of Natural and scientific Interest (Kame Delta Formation). In summary, it remains our opinion that it is premature to proceed any further with Public Information Centre (PIC) #2 at this time given the failure to complete the above studies or alternatively to provide disclosure of these studies to the public for full public review and public consultation. The failure to do so runs directly contrary to the intent and purpose of a Schedule B Municipal Class EA study and proper public consultation and transparency. The refusal to delay any further public meetings until all studies are completed and disclosed to the public suggests that there has been a pre-determined outcome and that the Region and its consultants are now simply going through the required motions. We sincerely	Niagara Region communication records show an email response was sent Dec. 3, 2019 in reply to the electronic mail message received on Dec. 3, 2019. Issues that were brought forward as part of the Dec. 3, 2019 email were not definitively addressed at that time as they pertain specifically to items that are relevant to the detailed design phase which occurs later in the project schedule. Responses at this time as follows, however may be subject to change during detailed design: The land for the proposed road will be acquired as part of the purchase of the property. This road will likely be constructed first to facilitate the construction of the remaining features. Barriers between the driving range, access road and the adjacent properties will be incorporated into the final design. Any trees damaged or removed will be replaced with 2 trees as per our regular practice. 3. Landscaping features that minimize impacts to surrounding properties will be considered during design. The final design will incorporate optimum placement of the tank to minimize any potential shadow impacts. Studies pertaining to shadow impacts are not generally undertaken as part of Municipal Class EA studies. We will take your recommendation for consideration. Property value impacts are not generally undertaken during the Municipal Class EA studies. We will take your recommendation for consideration. This project has followed all the required steps for the phases undertaken to date (Phase 1 and 2) as outlined as part of the Schedule B Municipal Class Environmental Assessment Process as shown below. 

Name	Project Stage	Comment / Question	Resolution / Response
		hope that this is not the case and look forward to full disclosure of all studies and reports and continued, meaningful discussions before a final decision is made failing which we fully reserve the right to request a Part II Order at the appropriate time. Thank you in advance for your anticipated consideration of our comments and your anticipated timely reply to same.	As part of the evaluation process for Phase 2 of the Municipal Class EA, Natural Heritage desktop studies were completed for the three shortlisted sites. As we begin Phase 2B of the EA, field investigations for the Natural Heritage studies will be executed on the preferred location. In addition, the Stage 1 and 2 Archaeology, geotechnical/hydrogeological and topographical studies will be conducted during the Conceptual Design step of Phase 2B to support these studies. The preferred solution does not become final until these studies are completed and found to be satisfactory. All studies completed by Niagara Region for the project will be included as part of the Final Report and the opportunity to review them will be provided during the 30 day public review period.
Public (34)	PIC #2 / Post-PIC#2	I was interested in your project for a new Pelham Elevated Tank. I have reviewed your PIC#2 materials, including the video. Can you please clarify whether you have investigated the planning elements of the proposed options? For instance, some of the options for the tank location would have it built in the Niagara Escarpment Plan lands (North of Tice Road). Others, on lands protected by the Greenbelt. The most shocking is that you are proposing to build the new tank and overflow pond on lands protected by both the Greenbelt and the Provincial Earth Science ANSI (Area of Natural and Scientific Interest). In fact, you will note from the map, that the Site #3 lands are specifically in the ANSI; please see: https://www.niagararegion.ca/living/icp/pdf/Core-Natural-Heritage-Map.pdf Protecting the Fonthill Kame from further developments took years and years; please see: https://daveaugustynnow.blogspot.com/2013/10/final-ansi-boundary-protects-fonthill.html And, please see this Regional report to help understand the Kame's importance: ICP 62-2013 - Fonthill Kame-Delta ANSI Proposed Boundary, June 20, 2013. It would be a travesty if a water tank to help improve water pressure in the urban area would encroach on and negatively impact this important geological feature! In fact, I am worried that adding the tank there would encourage further erosion of the protections of ANSI. Other developers or property owners (including the quarry) could point to this construction as a wedge to develop their plans. You will note from the Provincial site about the ANSI, they would not even allow the construction of a barn on lands that the owner said had previously had a barn. Also, it appears that the zoning would not allow for the tank. The exemption that allows the golf driving range only allows that or agricultural uses. This urban use is the absolute furthest from an agricultural use. What other options do you have? I see no mention of the Bell Canada site (1615 Lookout Street) which already contains urban infrastructure. Can you please clarify why that was not even evaluated? As well, I wondered if you had thought about using a similar sized tank in Fonthill and adding a tank in Fenwick? The previous Town Council and Regional Councillors were concerned about security of supply of water in Fenwick, if there was ever a break in the line	Thank you for your interest in this Class EA and for forwarding your questions. The Project Team has considered various planning elements, such as those you have mentioned, with regards to the proposed options in order to support the construction of a new elevated water storage tank. Construction of a new elevated water storage tank is needed in order to provide sufficient storage capacity within the Pelham Water System to accommodate growth in Pelham forecasted by the Region to the year 2041, in addition to improving the water pressure in the system. The feasible locations of the new tank are limited, as noted in PIC#2, and for this reason this is why locations within certain planning policies are being considered. For example, for Alternative 2 (West of 229 Tice Road) which located to the north of Tice Road, this site is located in the Niagara Escarpment Plan Area and designated as an Escarpment Protection Area. This designation permits infrastructure and utilities to be constructed here, provided a development permit is obtained from the Niagara Escarpment Commission. For Alternative 3 (South of Driving Range), you are correct that this site is within the Greenbelt Plan, specifically Protected Countryside and Specialty Crop Area – Niagara Peninsula Tender Fruit and Grape Area. New municipal infrastructure can be constructed in these areas in accordance with Section 4.2.1 of the Greenbelt Plan. Additionally in terms of the Fonthill Kame Delta ANSI, this has also been considered and the Ministry of Northern Development, Mines, Natural Resources, and Forestry has been consulted as part of this project. If Alternative 3 is ultimately selected as the preferred location, it is recommended that any significant grading of the ANSI's landform features be limited, and that the educational values of these features (e.g., important viewscapes) be maintained where possible. Additionally, the Project Team is coordinating with Niagara Escarpment Commission who have also provided comments for consideration and noted they would like to ensure the escarpment environment is protected. Furthermore, in terms of zoning for this location, you are correct that this property is currently zoned as Agricultural with an exemption for the Driving Range or

Name	Project Stage	Comment / Question	Resolution / Response
		from Fonthill. Thanks so much for your consideration. I look forward to your response. P.S. I note from PIC#1 that the Bell Site is an option. Yet, I can find no mention / consideration of that site in PIC#2? Can you please explain? (Or did I miss something?) PPS: I'm sorry to bug you again. But, I neglected to include the link for the Provincial information about the ANSI. I hope this link works...if not, you can simply zoom into the area. https://geohub.lio.gov.on.ca/datasets/b88037cdb71e4daf9445afa6fb999194/explore?location=43.048038%2C-79.308908%2C14.99	other agricultural uses. If this site is selected as the preferred location, the area required for the elevated tank could be rezoned from Agricultural to Public, or an update to the exemption may be made, however this is not required as the new elevated tank is considered a special facility/infrastructure and would be permitted in the current zoning. You are correct that the Bell Canada site at 1615 Lookout Street, which has an existing communications tower already on the site, was reviewed and presented as part of PIC #1. The Project Team has corresponded with Bell Canada who indicated they are not open to selling the site or having a new elevated water tower beside their existing communications tower as it would interfere with their operations. As such, it was determined that this site would not be carried forward for further consideration and this conclusion was presented in PIC#1. Based on the comments received at and after PIC#1, and the desire for additional consultation and review of the potential sites for the new elevated water storage tank, the Project Team reconsidered and re-evaluated suitable sites. As the Bell Canada site was already ruled out as a feasible alternative, it was not considered further during the re-evaluation of suitable sites. In the panels for PIC#2, the Bell Canada site would fall under the Land Use Screening of areas ruled out as a potential location (see slide 5). Finally, the recommendation for adding a new elevated water storage tank in Fonthill and decommissioning the existing storage tank is from the approved 2016 Master Servicing Plan (MSP). The MSP looked at the overall Welland Water System which included Fonthill and Fenwick as part of the Town of Pelham, and various improvements throughout the system including potential water storage options and watermain improvements. For Fenwick specifically, the MSP did note the security of supply concerns you have mentioned, and ultimately recommended that a new secondary truck connection or new elevated storage tank in Fenwick was not recommended. The purpose of this Class EA is to carry out the recommendations approved under the 2016 MSP and confirm the final location for the new elevated water storage tank that was recommended. Please refer to the 2016 MSP for further details on the approved recommendations: https://www.niagararegion.ca/2041/master-servicing-plan/default.aspx
Public (35)	PIC #2 / Post-PIC#2	Can you advise me regarding the current status of this project. Is the Class EA ready to be filed soon? What is the expected design timeline and construction timeline as envisioned currently?	Thanks for your inquiry on the New Pelham ET EA project page. We are working on completing a topographical survey and geotechnical investigations in September/October. The conceptual design is anticipated to be finalized and the project report filed prior to year end. Detailed design to follow thereafter in 2023 and construction has been budgeted for 2027. Please don't hesitate if you have any further inquiries. Please don't hesitate if you have any further inquiries. Thank you for your inquiry.

Name	Project Stage	Comment / Question	Resolution / Response
Public (36)	Post-PIC#2	My question to you is more in regards to the Sholtz Street reservoir in Fonthill. I'm looking at potentially purchasing a house that backs onto the reservoir. Would you have any hesitation to this? I don't know, or understand any of the implications of backing onto this reservoir.	Although we would not be able to give you advice on whether or not to purchase the property, we can let you know some of the implications as result of the Pelham Elevated Tank Class Environmental Assessment project. In the near future, there will be interior upgrades to the existing Shoalts Drive Reservoir and Pumping Station, as well as watermain upgrades from the Shoalts Drive Reservoir to the new Pelham Elevated Tank site. Therefore construction activities could be expected in the area. The specifics are unknown at this time as detailed design has not commenced. The Region of Niagara is also currently updating the Master Plan for water and wastewater servicing. Once that is completed, it would provide the long term strategy for the servicing infrastructure. Please advise if you wish to be added to the stakeholder contact list for either the Pelham Elevated Tank Class Environmental Assessment project or the Region's Master Plan. If you are on the stakeholder contact list, you would receive project notices.

7.0 Conclusions

The Project Team has determined through this Schedule B Class EA that the preferred solution for the new Pelham EST and associated system upgrades include the following components to be designed and constructed:

- A new EST being constructed on the property south of the Golf Driving Range at 220 Tice Road, with an overflow pond for emergency overflow incidents and for maintenance purposes for the EST
- An access road from Lookout Street to the EST
- A new, larger, dedicated transmission main from the existing Shoalts Drive Reservoir, with new pumps, to fill the new EST.
- A new watermain from the new EST discharge line, connected to the existing local watermain, to provide treated water to the local water service area.
- A new valve chamber at Highway 20 West and Haist Street for pressure control, isolation for maintenance/emergencies, and back feed to Pressure Zone 248 (East Fonthill) as necessary.
- And demolition of the existing Pelham EST and Booster Pumping Station once the new infrastructure is operational.

The preferred location has the least impact to the property owner and lowest capital costs, while having similar or lesser aesthetic, technical, archaeological, and environmental impacts. The preferred solution meets the needs of the growing community and improves the storage and pressure in the Pelham Water System.

8.0 Next Steps and Schedule

As per the Municipal Class EA Process, Phase 2 of the Schedule B Class EA includes the issuance of the Notice of Completion, the filing of this Project File Report, and a minimum 30-day public review period.

During the minimum 30-day review period, the public and agencies can provide comments on the presented information. If a public member has concerns, they are encouraged to discuss and resolve the concerns with the proponent. If there is an Indigenous treaty rights' concern, it is encouraged to discuss and resolve the concerns with the proponent. If it is not resolved through discussions with the proponent, the Indigenous party raising the concern may write to the Minister of the MECP and request a Section 16 Order (i.e., a "bump-up request"). In this case, the MECP will review the information and prepare a recommendation for the Minister's consideration. The Minister will then decide whether the Section 16 Order will be denied or upheld, or if the matter will be referred to a mediator.

Provided that no Section 16 Order requests are made to the Minister within the public review period, the project is approved and may proceed to design, construction, operation, and monitoring, if specified, for adherence to environmental provisions and commitments.

During conceptual design of the new EST, Niagara Region will complete the topographic survey of the site, and undertake geotechnical and/or hydrogeological investigations for the preferred location of the new EST. Detailed design and construction of the new EST and associated system improvements will then follow. The anticipated schedule for the project is as follows:

Table 8-1 – Next Steps and Schedule

Activity	Anticipated Schedule
Completion of Class EA	Fall 2023
Enhanced Conceptual Design of New EST	Fall 2023
Detailed Design of New EST	2023 to 2024
Construction of New EST	2025 Onwards
Decommissioning Design of Existing EST	2026
Decommissioning Construction of Existing EST	2029