

PROJECT FILE REPORT

Peel Region

Lakelands Wastewater Pumping Station
New Offline Storage Facility
Municipal Class Environmental Assessment

FEBRUARY 2025

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REVISIONS PAGE

Lakelands Wastewater Pumping Station
New Offline Storage Facility
Municipal Class Environmental Assessment

Client:

Engineer:

Peel Region

Associated Engineering (Ont.) Ltd.

Revision/ Issue	Date	Description	Prepared by/ Reviewed by	Client Review
1	2024-11-07	Project File Report – v1	AL/PS	
2	2025-02-13	Project File Report – v2	AL/PS	

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EXECUTIVE SUMMARY

INTRODUCTION

Associated Engineering (Ont.) Ltd. (Associated) was retained by Peel Region (Peel) to assist with the completion of a Municipal Class Environmental Assessment (MCEA) for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* (the Study), in the City of Brampton. The Study developed and evaluated alternative solutions for the location of a new offline storage facility that will provide 2-hour emergency storage with return pumping. In accordance with the Municipal Engineers Association's (MEA) Municipal Class Environment Assessment process, this Study follows the planning process for a Schedule B.

The Study Area for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* encompasses the drainage area of the Lakelands WWPS which is comprised of the Lakelands Village residential development. The Study Area is bound by Highway 410 to the north, Bovaird Drive East (RR107) to the west, Williams Parkway to the east, and the treeline behind Showboat Crescent, Martree Crescent and Tobermory Crescent to the south (Figure E-1-1).



Figure E-1-1: Study Area

STUDY OBJECTIVES

The purpose of this Study was to develop and evaluate potential off-site locations within the vicinity of the WWPS for the placement of the new offline storage facility considering technical constraints, the existing environment as well as

stakeholder input in accordance with the MEA MCEA guidelines. In developing alternatives, the Study team took into consideration the objectives of the Study:

- Alleviate capacity constraints at the Lakelands WWPS;
- Mitigate the risk of basement flooding and surcharging of the wastewater system within the Lakelands Village neighbourhood; and
- Minimize impacts on the surrounding environments with the implementation of a new offline storage facility.

The alternatives proposed to achieve the study objectives are outlined in Section 5 as are the evaluation of alternatives and identification of the preferred alternative.

PHASE I: IDENTIFICATION OF PROBLEMS AND OPPORTUNITIES

The Problem and Opportunity Statement provides a clear statement of the problem and opportunities that need to be addressed for a specific undertaking. The various analyses (e.g. archaeological assessment, natural environment assessment) and existing conditions provide input for and contribute to the identification and description of the problem or opportunity. The prevailing deficiencies within the Study Area can be summarized by the following statement.

Problem and Opportunity Statement

The Lakelands Wastewater Pumping Station (WWPS), located in the City of Brampton, services the Lakelands Village residential development. The WWPS was constructed in 2004 and has a current firm capacity of 64.0 L/s, with an expected buildout capacity of 72.0 L/s. The existing WWPS requires upgrades to meet the current Peel Region design standards and increase its firm peak flow capacity to 72.0 L/s. The WWPS also requires the addition of 2-hour emergency storage.

Through previous assessments it was determined that the existing WWPS site does not have adequate space or capacity to provide the 2-hour emergency storage and a piped storage system was not feasible due to hydrogeological constraints. Hence, the 2-hour emergency storage will need to be in the form of an offline storage facility, which will require property acquisition by Peel. Therefore, Peel has initiated a Municipal Class Environmental Assessment (MCEA) to develop and evaluate potential off-site locations within the vicinity of the WWPS for the placement of the new offline storage facility. Alternative locations will be considered based on proximity to the WWPS site, impacts to the natural environment, impacts to residents during construction and operation (i.e.: noise and odour), characteristics of the subsurface soil and groundwater conditions, and accessibility for maintenance and operation by Peel Operations staff.

PHASE II: IDENTIFICATION AND EVALUATION OF ALTERNATIVE SOLUTIONS

Considering the Problem and Opportunity Statement and previous assessments completed, three (3) locations for the siting of the offline storage facility have been identified for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* MCEA study including:

- Alternative 1: Do Nothing
- Alternative 2: Storage Tank Location 1 – Northern portion of Lakelands Village Park, southeast of the Southlake Boulevard and Stoneylake Avenue intersection

- Alternative 3: Storage Tank Location 2 – Southeastern portion of Lakelands Village Park, north of the Stonylake Avenue and Deep Sea Drive intersection
- Alternative 4: Storage Tank Location 3 – Eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection

Each of these alternatives are discussed and evaluated in Section 5.

Evaluation of Alternatives

The following evaluation criteria (Table E-1-1) have been identified and further broken down to comparatively assess the proposed alternatives and select the best alternative to address the Problem Statement outlined in Section 3.

Table E-1-1: Evaluation Criteria

Evaluation Criteria	Performance Measure
Technical Environment	<ul style="list-style-type: none"> • Constructability and complexity of implementation • Impacts on existing utilities and infrastructure • Accessibility for construction and operation and maintenance • Addresses study problem • Compliance with the Region of Peel's design and operating requirements
Natural Environment	<ul style="list-style-type: none"> • Potential encroachment to designated natural areas and regulated areas • Impacts on significant wildlife and their habitat, including Species at Risk (SAR) • Impacts on vegetation communities • Surface water impacts • Groundwater impacts
Social Environment	<ul style="list-style-type: none"> • Impacts on private property/residential properties • Impacts on neighbourhood greenspaces and parklands • Impacts on road access to residential properties • Nuisance impacts (vibration, dust and noise issues during construction)
Cultural Environment	<ul style="list-style-type: none"> • Disruption of built and cultural heritage features • Impact on areas of archaeological potential
Economic Environment	<ul style="list-style-type: none"> • Construction Capital Costs • Region's operating and maintenance costs • Land acquisition and/or easement requirements

Details of the evaluation process are provided in Section 5.2.

Selection of Preferred Solution

Based on the evaluation completed, *Alternative 4: Storage Tank Location 3 – Eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection* is identified as the recommended preferred solution for

the location of the new offline storage facility for the Lakelands WWPS. While this Location has greater impact on the City of Brampton’s greenspace surrounding the Lakelands Village Park as it will impact the passive use area next to the Lakelands playground, these impacts are mostly temporary, with permanent impacts being mitigated with the final siting of the facility as close to the SWM pond and Deep Sea Drive right-of-way as feasible. Locations 1 and 2 have significant constructability concerns including conflict with major storm infrastructure (1200mm diameter) and inability to provide passive overflow, and accessibility during construction and operation and maintenance of the facility, respectively.

Full details of the preferred solution are provided in Section 7.

Potential Impacts and Proposed Mitigation Measures

Mitigation of potential effects was considered throughout the MCEA process, however, despite efforts to reduce effects, not all can be avoided. Table E-1-2 provides a summary of potential environmental and construction impacts that may occur during the construction phase and proposed measures to mitigate any adverse impacts.

Table E-1-2: Construction Consideration

Construction Impacts	Proposed Mitigation Measures
Traffic Delays within local streets due to construction vehicles and necessary connection works	<ul style="list-style-type: none"> • Prepare construction phasing plan/detour plan and review with City of Brampton; secure Road Occupancy Permit
Air quality impacts from construction equipment	<ul style="list-style-type: none"> • Develop a dust control plan, use water, and dust suppressants during construction, keep idling of construction equipment to a minimum, address and monitor air quality complaints
Noise disturbance to adjacent land uses	<ul style="list-style-type: none"> • Develop a noise control plan, construction must conform to Municipal Noise By-Laws, keep idling of equipment to a minimum, address and monitor noise complaints
Impacts to surface water quality due to sedimentation and introduction of deleterious substances to storm collection system/natural environment	<ul style="list-style-type: none"> • Develop an Erosion and Sediment Control Plan (ESCP), include measures for managing water flows into and out of the site, manage fuel, excess materials, and debris appropriately (ie: silt fence, construction fencing, straw bales, mud mats, etc)
Restricted access to public park area	<ul style="list-style-type: none"> • Erect construction fencing to delineate work area from public space; coordinate with City of Brampton on phasing and construction details; restore area to existing or better conditions

Further details of the potential impacts and proposed mitigation measures are provided in Section 8.

Public Consultation

Throughout the project, stakeholders, including the public and property owners, Indigenous communities, authorities, government agencies and utilities, were given a variety of opportunities to review and comment on the project process, key findings, proposed alternatives, and recommended solution. Numerous consultation activities were undertaken as part of the Study, including:

- Development of a stakeholder contact list, which was updated throughout the Study;
- Communication with Indigenous communities by mail and/or email;
- Development of a study page on Peel Region's website with Study updates and contact information (<https://peelregion.ca/construction/environmental-assessments/lakelands-wastewater-pumping-station-new-offline-storage-facility>);
- Project notices;
- An Online Public Information Centre (PIC);
- Consultation with key stakeholders; and
- Public release of this Project File Report.

Key concerns and considerations that were raised as part of the public consultation process are summarized in Table E-1-3.

Table E-1-3: Summary of Key Concerns and Considerations for Consultation

Public/ Stakeholder/Indigenous		
Liam Smythe – Ministry of Citizenship and Multiculturalism	Provided acknowledgement of study and information regarding archaeological and heritage requirements	Noted; ongoing communication and sharing of necessary documents with Ministry throughout study
Chunmei Liu, Regional Environmental Planner – MECP	Provided acknowledgement letter and supporting documents	Noted and considered during study
Tom Tran – Brampton Heritage	No comments on provided Heritage Report; inquired on Stage 1 Archaeological Assessment Report	Provided copies of Heritage Report and Stage 1 Archaeological Assessment report for consideration
Karla Barboza - Ministry of Citizenship and Multiculturalism	Confirmed receipt of Heritage Report	Noted
Liam Smythe – Ministry of Citizenship and Multiculturalism	Reviewed Heritage Report and provided comments	Reviewed report – no comments to address
Jaskiran Bajwa – City of Brampton	Reviewed Technical Memo #2 with alternatives and evaluation and confirmed acceptance of Location 3; provided conditions/requirements to follow for ultimate City approval during design	Conditions and requirements noted; will be addressed during design.

Public/ Stakeholder/Indigenous Group	Comment/Question	Study Team Response
Shirin Varzgani – TRCA	Provided response letter noting project is not within TRCA regulated limits so require no further consultation; remove from contact list	Noted and updated contact list
Huron-Wendat – Dominic Ste Marie	Acknowledged and asked to be kept updated on Study and Stage 1 Archaeological Assessment results; reviewed and confirmed no comments on Stage 1 Archaeological Assessment Report	Sent Stage 1 Archaeological Assessment Report asking for review and comment; no comments received
Hiawatha First Nation – Sean Davison	Study is outside of Williams Treaty Settlement Area – Hiawatha will not focus efforts outside of treaty area	Noted; contact list updated
HDI – Rae Lumsdon	Confirmed receipt of Notice of Online Public Information Centre; will review and reach out to schedule a meeting; requested PFR to review	Confirmed receipt of email; Noted draft PFR will not be prepared until after PIC is completed and comment period closes; will circulate copy of the PFR for review and commenting once prepared
SNGR – Tanya Hill-Montour	Requested copy of the Stage 1 Archaeological Assessment Report; had questions regarding the Region's Land Acknowledgement and provided some context	Stage 1 Archaeological Assessment Report was provided for review; apologized for mistakes in Land Acknowledgement and noted Peel will review and update.
Huron-Wendat – Benjamin Labbe	Huron-Wendat is interested in reviewing Stage 1 Archaeological Assessment Report	Noted that report was previously shared with Community in February 2024

Details of public and stakeholder consultation and communication throughout the Study are provided in Section 6.

CONCLUSIONS AND RECOMMENDATIONS

The preferred solution is to install a new offline storage facility at Location 3, the eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection. The new offline storage facility will include the following:

- Provision of 2-hour emergency storage at the peak flow of 72 L/s constructed below the basement flooding elevation (232.5m);
- Underground concrete storage tank with a proposed volume of approximately 500m³, with an approximate structure size of 20m long by 10m wide by 7.8m deep;

- An emergency overflow pipe will be constructed from an existing maintenance hole (MH59A) in the existing gravity sewer collection system which will ultimately overflow into the new offline storage facility;
- A pumping station would be incorporated into the storage facility so that after the emergency event has ended, wastewater can be pumped back into the wastewater collection system via the return forcemain;
- Storage tank will have tipping buckets for flushing once the emergency event has ended;
- A superstructure will be constructed on top of the tank to house control instruments and access stairs into the tank; and
- A deep shoring system such as secant pile wall is likely expected for the deep excavation of the tank.

Conceptual design of the new offline storage facility has been prepared for the preferred solution. Following completion of the MCEA study, detailed design, permitting, land acquisition and construction will be undertaken to implement the preferred solution and remedy the identified problems.

During the MCEA study, recommendations for additional works and implementation measures were identified. These items should be taken into consideration during the detailed design and include, but are not limited to, the following items:

- Confirm design criteria for offline storage facility;
- Complete further geotechnical investigation to assess soil conditions and develop an excess soils management plan;
- Complete hydrogeological assessment to confirm groundwater conditions and need for dewatering permitting. Self-registration on the Environmental Activity Sector Registry of Ontario would be required for construction dewatering between 50,000-400,000 litres per day;
- Develop and implement Erosion and Sediment Control Plan to minimize risk of sediment transport into adjacent pond;
- Confirm preferred construction methodologies to be utilized;
- Continue to engage with interested Indigenous Communities throughout design, as necessary;
- Complete Arborist Report to support development of a Tree Inventory and Removal Plan;
- Continue coordination with the City of Brampton to finalize property acquisition or easement agreements, and ensure alignment on design elements that may impact surrounding areas (e.g., access points, pathway works, aesthetics);
- Identify and secure all necessary permits and approvals from relevant regulatory agencies to facilitate construction and establish a clear timeline for obtaining them before construction activity begins;
- Utilize Subsurface Utility Engineering (SUE) services to map all existing underground utilities within the Study area;
- Confirm all utility infrastructure and identify potential conflicts and need for relocations, if required; and
- Finalize capital construction cost estimates of proposed works.

Prior to construction, Peel will inform the public and adjacent landowners of the upcoming construction works including construction schedule, construction staging and implementation.

TABLE OF CONTENTS

SECTION	PAGE NO.
Executive Summary	i
Table of Contents	viii
List of Tables	x
List of Figures	xi
List of Abbreviations	xii
1 Introduction	1
1.1 Description of Study Area	1
1.2 Study Purpose and Objectives	1
1.3 Project Background	2
1.4 Planning and Policy Context	3
2 Study Process	10
2.1 The Municipal Class Environmental Assessment Process	10
2.2 Study Documentation	12
2.3 30 Day Public Review and Section 16(6) Order	12
2.4 Study Organization and Study Team	14
2.5 Study Schedule and Consultation Process	14
PHASE I: IDENTIFICATION OF PROBLEMS AND OPPORTUNITIES	15
3 Problem and Opportunity Statement	15
PHASE II: IDENTIFICATION & EVALUATION OF ALTERNATIVE SOLUTIONS	16
4 Existing Conditions	16
4.1 Lakelands Wastewater Pumping Station (WWPS)	16
4.2 Socio-Economic Environment	20
4.3 Source Water Protection	20
4.4 Natural Environment	21
4.5 Cultural Environment	24
5 Alternative Solutions	27
5.1 Identification of Alternative Solutions	27
5.2 Evaluation Process	34
6 Consultation and Communications	45
6.1 Summary of Consultation Activities	45
6.2 Project Notices	45
6.3 Public Engagement	46
6.4 Stakeholder Consultation	48

6.5	Consultation with the Ministry of the Environment, Conservation and Parks	48
6.6	Indigenous Communities Consultation	49
7	Implementation of the Preferred Solution	50
7.1	Design Features of Preferred Solution	50
7.2	Property Requirements	51
7.3	Approval Requirements	51
7.4	Proposed Construction Schedule and Cost Estimate	52
7.5	Detailed Design Commitments and Considerations	53
8	Potential Impacts and Proposed Mitigation Measures	54
8.1	Private Property and Adjacent Land Use	54
8.2	Natural Environment	54
8.3	Socio-Economic and Cultural Environment	56
8.4	Climate Change Considerations	56
8.5	Construction Considerations	56
8.6	Monitoring and Maintenance	57
9	Conclusions and Recommendations	59
9.1	Conclusions	59
9.2	Recommendations	60
	Closure	
	References	
	Appendix A – Natural Environment Assessment Reports	
	Appendix B - Archaeological Assessment Reports	
	Appendix C - Cultural Heritage Report	
	Appendix D - Study Notices	
	Appendix E - Public and Stakeholder Comments	
	Appendix F - Public Information Centre	
	Appendix G - Indigenous Correspondence	
	Appendix H – Conceptual Drawings	
	Appendix I - Cost Estimate	

LIST OF TABLES

	PAGE NO.
Table E-1-1: Evaluation Criteria	iii
Table E-1-2: Construction Consideration	iv
Table E-1-3: Summary of Key Concerns and Considerations for Consultation	v
Table 2-1: Phases of the MCEA Process	11
Table 2-2: Study Team	14
Table 2-3: Key Milestone Dates	14
Table 5-1: Evaluation Criteria	34
Table 5-2: Evaluation Scale	35
Table 5-3: Evaluation Matrix	36
Table 6-1: Comment Summary for Study	47
Table 6-2: Indigenous Communities Consultation Summary	49
Table 7-1: Approval Requirements	52
Table 8-1: Construction Considerations	57

LIST OF FIGURES

	PAGE NO.
Figure E-1-1: Study Area	i
Figure 1-1: Study Area	1
Figure 1-2: Conservation Authority Natural Heritage System (Figure 8, Region Official Plan)	4
Figure 1-3: Water Resource System Features & Areas (Schedule A-1, Region Official Plan)	5
Figure 1-4: Highly Vulnerable Aquifers (Schedule A-2, Region Official Plan)	5
Figure 1-5: Natural System Features and Areas (Schedule 6B, City Official Plan)	7
Figure 1-6: Parks and Open Space (Schedule 7, City Official Plan)	8
Figure 2-1: MEA MCEA Process	10
Figure 4-1: Lakelands WWPS Drainage Area	17
Figure 4-2: Conceptual Layout of In-Line Storage Tunnel	18
Figure 4-3: TRCA Regulated Area (purple) outside project sites	21
Figure 4-4: NHIC Mapping of Study Area	22
Figure 4-5: Existing Ecological Conditions	23
Figure 4-6: Results of Archaeological Assessment Stage 1	25
Figure 5-1: Study Alternatives – Offline Storage Facility Locations	27
Figure 5-2: Surcharged Sewers after 2-Hour Shutdown at Lakelands WWPS	28
Figure 5-3: Configurations of Storage Tank at Location 1	29
Figure 5-4: Existing Infrastructure and Proposed Overflow Piping (Configuration A)	30
Figure 5-5: Storage Tank Configuration at Location 2	32
Figure 5-6: Storage Tank Configuration at Location 3	33
Figure 7-1: Preferred Solution Layout	51
Figure 7-2: Proposed Construction Phase	52

LIST OF ABBREVIATIONS

BHRs - Built Heritage Resources

C of A – Certificate of Approval

CHLs - Cultural Heritage Landscapes

CTC - Credit Valley Conservation –Toronto and Region Conservation – Central Lake Ontario Conservation

EAA - Environmental Assessment Act

EBAs - Event-based modelling areas

ESC - Erosion and Sediment Control

ESCP - Erosion and Sediment Control Plan

ESR - Environmental Study Report

GHG – Greenhouse Gas

HCCC - Haudenosaunee Confederacy Chiefs Council

HDI - Haudenosaunee Development Institute

HH – Halton Hamilton

HVAs - Highly Vulnerable Aquifers

HWL – High Water Level

ICAs - Issues Contributing Areas

IPZs - Intake Protection Zones

MCEA - Municipal Class Environmental Assessment

MCFN - Mississauga of the Credit First Nation

MEA - Municipal Engineers Association

MECP – Ministry of Environment, Conservation and Parks

MH – Maintenance Hole

MNRF - Ministry of Natural Resources and Forestry

NER – Natural Environment Report

NHIC - Natural Heritage Information Centre

OBBA - Ontario Breeding Bird Atlas

ORAA - Ontario Reptile and Amphibian Atlas

PFR – Project File Report

PIC – Public Information Centre

PPS – Provincial Planning Statement

PSW - Provincially Significant Wetlands

ROW – Right of Way

SAR – Species at Risk

SGBLS - South Georgian Bay –Lake Simcoe

SGRAs - Significant Groundwater Recharge Areas

SNGR - Six Nations of the Grand River Territory

SUE – Subsurface Utility Engineering

SWM – Stormwater Management

SWPS – Stormwater Pumping Station

TBM – Tunnel Boring Machine

TRCA - Toronto and Region Conservation Authority

WHPAs - Wellhead Protection Areas

WWPS – Wastewater Pumping Station

1 INTRODUCTION

Associated Engineering (Ont.) Ltd. (Associated) was retained by Peel Region (Peel) to assist with the completion of a Municipal Class Environmental Assessment (MCEA) for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* (the Study), in the City of Brampton. The Study developed and evaluated alternative solutions for the location of a new offline storage facility that will provide 2-hour emergency storage with return pumping. In accordance with the Municipal Engineers Association's (MEA) Municipal Class Environment Assessment process, this Study follows the planning process for a Schedule B.

1.1 Description of Study Area

The Study Area for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* encompasses the drainage area of the Lakelands WWPS which is comprised of the Lakelands Village residential development. The Study Area is bound by Highway 410 to the north, Bovaird Drive East (RR107) to the west, Williams Parkway to the east, and the treeline behind Showboat Crescent, Martree Crescent and Tobermory Crescent to the south (Figure 1-1).



Figure 1-1: Study Area

1.2 Study Purpose and Objectives

The Lakelands WWPS is located at 26 Stonylake Avenue, in the City of Brampton, within the Lakelands Village residential development. The WWPS was constructed in 2004. The wastewater generated in the residential development flows to the Lakelands WWPS through a series of gravity sewers. The current firm capacity of the WWPS is 64.0 L/s as indicated by the Certificate of Approval (CofA), with an expected buildout capacity of 72.0 L/s.

Upgrades are being undertaken at the Lakelands WWPS to ensure the station meets current Peel design standards, increase its firm peak flow capacity through various site works and the addition of an offline 2-hour emergency storage facility. From previously completed assessments (Associated, 2019) various inline and offline emergency storage options were considered, with the ultimate recommendation of proceeding with a 2-hour offline storage facility accepted by Peel.

A new offline storage facility will require property acquisition by Peel. Therefore, the purpose of this Study was to develop and evaluate potential off-site locations within the vicinity of the WWPS for the placement of the new offline storage facility considering technical constraints, the existing environment as well as stakeholder input in accordance with the MEA MCEA guidelines. In developing alternatives, the Study team took into consideration the objectives of the Study:

- Alleviate capacity constraints at the Lakelands WWPS;
- Mitigate the risk of basement flooding and surcharging of the wastewater system within the Lakelands Village neighbourhood; and
- Minimize impacts on the surrounding environments with the implementation of a new offline storage facility.

The alternatives proposed to achieve the study objectives are outlined in Section 5 as are the evaluation of alternatives and identification of the preferred alternative.

1.3 Project Background

In 2016 Associated was retained by Peel to complete the design and construction for planned upgrades to the Assignment 4 pumping stations, including the Lakelands WWPS. For the Lakelands WWPS, Associated completed several reviews and investigations to confirm the proposed upgrades at the station and optimal storage solution. This included:

- Assessment of 1-hour versus 2-hour emergency storage at the projected build-out peak flow of 72.0 L/s. It was recommended and accepted by Peel to implement a 2-hour emergency storage tunnel at the WWPS.
- Following detailed geotechnical and hydrogeological assessments it was identified that a substantial dewatering requirement and potential settlement existed for the proposed storage tunnel construction.
- A detailed investigation of the stormwater and sanitary collection system throughout the Lakelands Village Development was completed to identify other locations that could accommodate an overflow from the sanitary collection system and a 2-hour emergency storage tank. The recommendation to proceed with the design of a 2-hour offline storage facility was accepted by Peel.

Key information relevant to the proposed offline storage facility and reviewing emergency storage options (Associated, 2019) includes:

- Geotechnical and hydrogeological investigations identified that the groundwater level was approximately 4.4m below the ground level. This shallow water table is believed to be a result of the previous land use of the Lakelands neighbourhood as a gravel pit.
- The initial design option of a hand dug in-line emergency storage tunnel consisting of 100m long by 3m diameter tunnel running adjacent and below the existing sanitary sewer along Stonylake Avenue would result in dewatering rates of up to 7 million litres per day and could result in settlement in the area.

- On-site storage tank option was impractical due to limited area available at the WWPS site, high water table, depth of the proposed structure, close proximity to other structures, relocation of main power supply to the site and inadequate area for soil excavation management.
- An offline storage tank would consist of a concrete tank structure sized for approximately 500m³ of storage, constructed below the sewer surcharge level to prevent basement flooding. In order to manage the high water table this tank would require geo-structural considerations (i.e., secant pile wall construction with either jet grouting or tremie plug).
- Lakelands Village Park was selected as the preferred location for the offline storage facility as it offers adequate space for construction and equipment laydown and offers separation from existing homes, which were constraints for constructing an on-site storage tank at the WWPS.
- Secondary in-line storage tunnel option consisting of 1.7m/1.8m diameter tunnel with an approximately 200m radius curve to be constructed without area-wide dewatering by tunnel boring machine. Watertight launch and retrieval shafts would be required and would be maintained as permanent structures or maintenance holes. This option would require the closure of one lane for a portion of Stoneylake Ave to accommodate soils management from the tunnel.
- Recommendation was to construct an offline storage facility due to lower construction costs and minimal impacts to the public due to temporary road closures and proximity to homes compared with in-line storage tunnel option.

Refer to Section 4 for additional background information on existing conditions, background investigations and storage options.

1.4 Planning and Policy Context

1.4.1 Peel Region Official Plan (2022)

Peel Region's Official Plan (April 2022) provides Regional Council with a long-term policy framework for decision making. It sets the Regional context for more detailed planning by protecting the environment, managing resources and directing growth and sets the basis for providing Regional services in an efficient and effective manner.

From our review of Peel's Official Plan, relevant information regarding the study area has been summarized below.

Natural Heritage System

Figure 1-2 is a conceptual depiction of the regional scale natural heritage system based on conservation authority studies. The natural heritage system, as mapped by the conservation authorities, identifies lands in existing natural cover and lands with the potential to be restored or enhanced and provides a science-based foundation for the implementation of natural heritage system planning by the local municipalities. The natural heritage system mapping shown on Figure 1-2 includes natural features and areas that are subject to protection in accordance with provincial policies.



Figure 1-2: Conservation Authority Natural Heritage System (Figure 8, Region Official Plan)

Within the Study Area, Lakelands Village Park has been identified as an existing natural cover. During the MCEA study, an ecological background study was prepared followed by the preparation of a Natural Environment Report (NER) to support the preferred solution design and construction by identifying key natural environment considerations and mitigation measures that should be included to protect the Natural Heritage System natural cover. Refer to Section 4 for further details.

Water Resource System

Water resources are comprised of complex interrelated systems, features and areas such as aquifers, ground water recharge and discharge areas, seepage areas and springs, rivers, streams, ponds, wetlands, lakes, and stormwater. These systems depend on the hydrological cycle of precipitation, ground water infiltration, evapotranspiration and surface runoff. The ground water features and areas, surface water features and areas, and their associated hydrologic functions make up Peel's Water Resource System (Figure 1-3 and Figure 1-4). The sustained social, economic and environmental well-being of the Region is dependent on the proper protection, management and conservation of Peel's Water Resource System and related Greenlands System.

Development and site alteration that may have an immediate or cumulative impact on water resources must be supported by appropriate hydrological and hydrogeological studies in accordance with provincial policy and the policies of Peel's Official Plan. Study requirements, as appropriate, shall be confirmed when applications for development or site alteration are proposed within designated vulnerable areas or key hydrologic areas, or on lands within 120 metres of a sensitive surface water feature, sensitive ground water feature or key hydrologic feature.

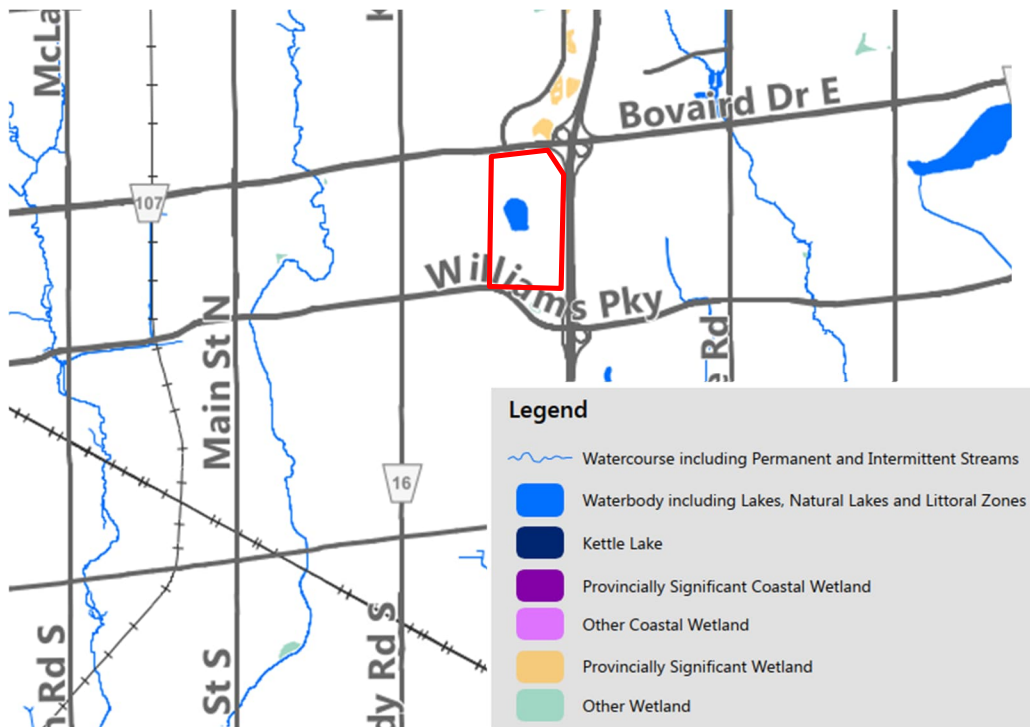


Figure 1-3: Water Resource System Features & Areas (Schedule A-1, Region Official Plan)

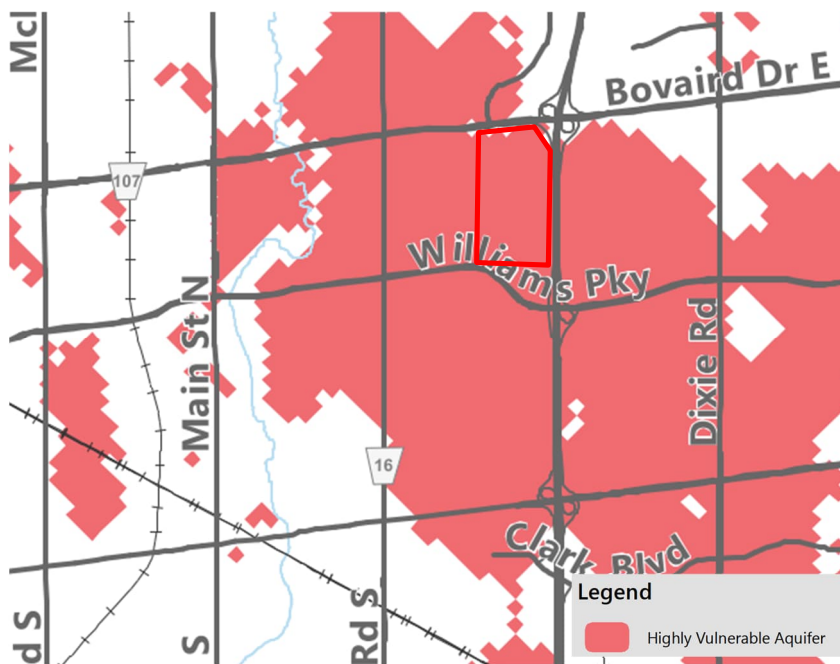


Figure 1-4: Highly Vulnerable Aquifers (Schedule A-2, Region Official Plan)

Within the Study Area, Lakelands Lake is a water resource system feature, while the entire Study Area is within a highly vulnerable aquifer. The impacts of the proposed work to these features were considered when determining the preferred solution and mitigation measures have been identified. During design, a hydrogeological assessment will be completed for the project area.

Source Water Protection

In Peel Region, the Credit Valley Conservation –Toronto and Region Conservation – Central Lake Ontario Conservation (CTC), South Georgian Bay –Lake Simcoe (SGBLS) and Halton Hamilton (HH) Source Protection Committees have led the preparation of source water protection plans, all of which apply to various portions of the Region. The applicable land use planning policies have been incorporated into the Region's Official Plan. These policies must be read in conjunction with the applicable source protection plans and local municipal official plans.

The Study Area for the *Lakelands Wastewater Pumping Station New Offline Storage Facility* is part of the CTC Region Source Protection Plan area.

Regional Structure

The Study Area for the *Lakelands Wastewater Pumping Station New Offline Storage Facility* is within the Urban System of the Regional Structure as per Schedule E-1 of the Official Plan. Lands within the Regional Urban Boundary are identified as the Urban System. Furthermore, the Study Area is within the Built-Up Area, where development is concentrated and which has a mix of land uses, as shown in Schedule E-3 of the Official Plan.

1.4.2 City of Brampton Official Plan (2023)

The City of Brampton's Official Plan (2023) (referred to as Brampton Plan) sets out a strategic and comprehensive approach to guiding growth and development in a manner that reflects the unique context of Brampton. The Official Plan explains where the City is currently and provides policies to achieve the strategic vision for 2051 and beyond.

From our review of the Brampton Plan, relevant information regarding the study area has been summarized below.

Designations

Brampton Plan establishes a range of designations which form a strategy for building an urban city. The City's strategy to build an urban city implements the policies of their City Structure and the City-Wide Building Blocks. The policies of each designation must be read together to understand the vision and intent for each area.

The Study Area for the *Lakelands Wastewater Pumping Station New Offline Storage Facility* is within a Neighbourhood designation area. The Neighbourhood designation is found throughout the city and will support the achievement of 15-minute neighbourhoods. Lands located within the Neighbourhoods designation include mainly residential communities with other locally-serving community services and amenities.

Natural Heritage System

Brampton's Natural Heritage System policies set the context for conservation and protection within the City-Wide Growth Management Framework. The Natural System, made up of the Natural Heritage System and Water Resource System, will be protected, maintained, restored, and enhanced for the long-term sustainability of the System.

It is a core objective of Brampton Plan to achieve no net loss and, if possible, a net gain, enhancing natural features and areas within the Natural Heritage System. Permanent protection of natural and water resource system features

and areas will provide essential climate mitigation and adaptation services, such as water storage and filtration, carbon storage, cleaner air and habitats, support for pollinators, and moderating the urban heat island effect.

The City also values the unique water related ecosystems of the fourteen lake-pond systems that generally occur within the Etobicoke and Spring Creek watersheds. Ten lake-ponds are the result of aggregate extraction of the buried Brampton Esker and Brampton Kame deposits, including Lakelands Lake. The City has prepared a City-Wide Lake Assessment and Management Study that recognizes that these lake-ponds must be properly conserved and managed to maintain and enhance their ecological features and functions that contribute to the environmental health of the community.

Development and site alteration within the Natural Heritage System (Figure 1-5) will be prohibited with some exceptions including: essential infrastructure exempted, pre-approved, or authorized under an Environmental Assessment process. New or expanded infrastructure may only be permitted within the Natural System where it is clearly demonstrated through an Environmental Assessment or Environmental Implementation Report that it is the preferred alternative for the location of the infrastructure. For infrastructure projects within the Natural System, the City will require specific mitigation and compensation measures to address impacts to natural features and functions caused by the infrastructure.

As noted in the Region's Official Plan and shown in Figure 1-4 above, the Study Area is within a highly vulnerable aquifer. Brampton Plan will require that the hydrologic function of these areas be protected, and the linkages and related functions of these features be maintained through the planning and development applications process. Specifically, where development or site alteration is proposed with a significant groundwater recharge area or highly vulnerable aquifer, a hydrogeological assessment may be required to demonstrate that the quality and quantity of water will be protected, improved, or restored.

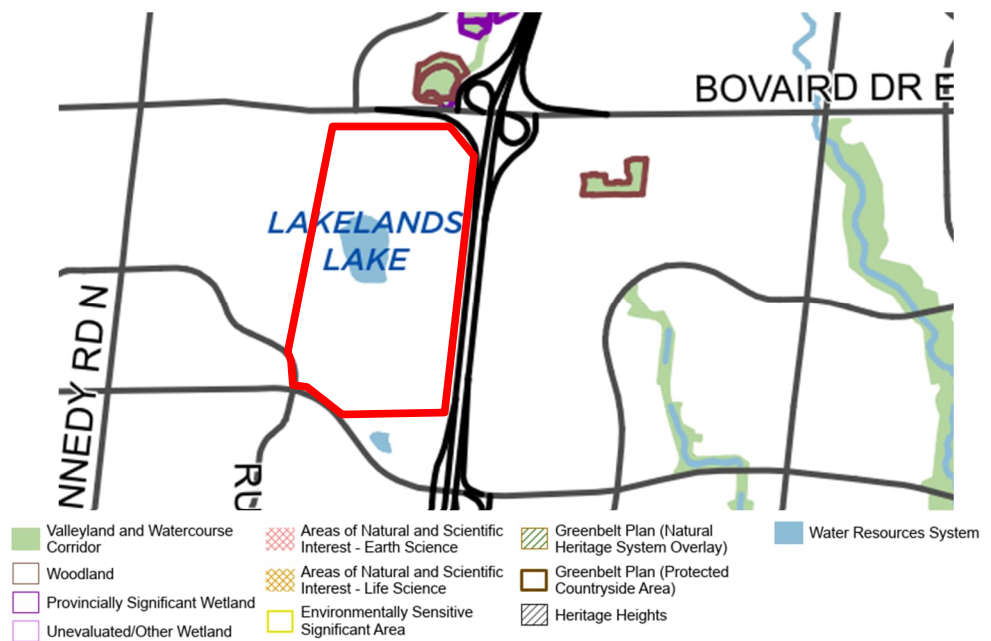


Figure 1-5: Natural System Features and Areas (Schedule 6B, City Official Plan)

Parks and Open Space

Public parks and open spaces are valuable community assets that provide opportunities for social interaction, recreation, programmed activities, as well as areas for quiet contemplation and relaxation. The City’s parks and open spaces also provide many ecosystem services such as biodiversity and clean air and help to both mitigate and adapt to the impacts of climate change. To further support implementation of our parks and open space policies, a parkland hierarchy has been established that is characteristic of the distribution and demand needs of the community.

Neighbourhood Parks generally represent the smallest park type, servicing the needs of the immediate or local neighbourhood. The scale, size and appeal of Neighbourhood Parks provide opportunities for less organized and unstructured, passive leisure and social activities. They are also important places that support and enhance the connectivity of parkland and other open spaces.

The Study Area for the *Lakelands Wastewater Pumping Station New Offline Storage Facility* contains a neighbourhood park, Lakelands Village Park (Figure 1-6), associated with the greenspace surrounding Lakelands Lake.

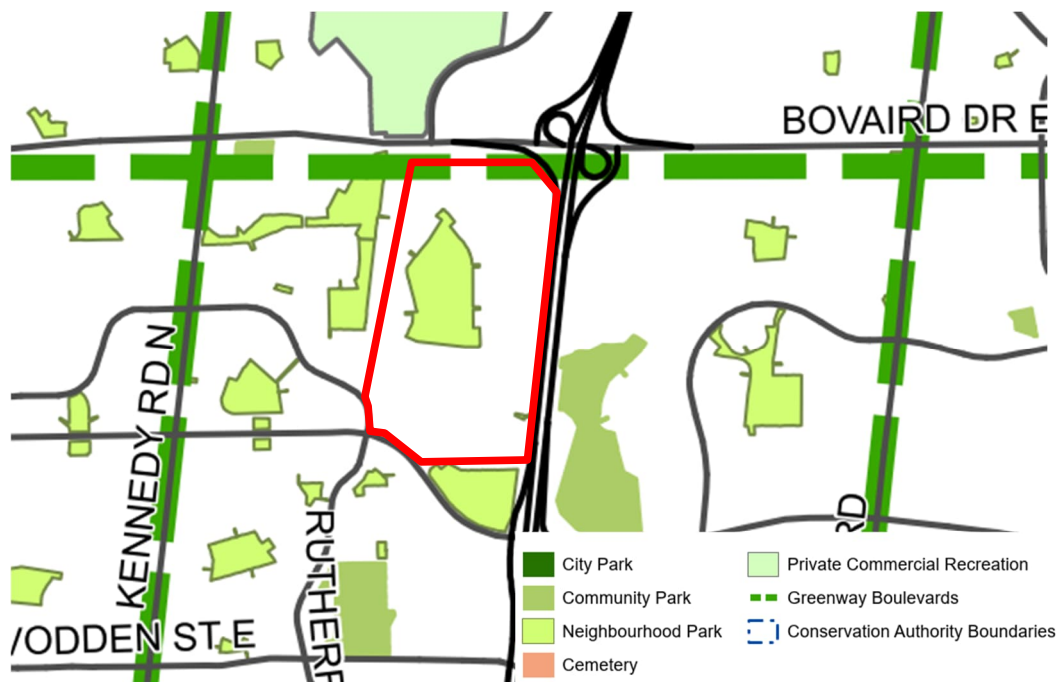


Figure 1-6: Parks and Open Space (Schedule 7, City Official Plan)

Wastewater

In Brampton, municipal wastewater services are provided by Peel Region who is responsible for wastewater treatment, trunk sanitary sewers, local sanitary sewers, force mains, and sewage pump stations. The sanitary sewers and pumping stations collecting flow from Brampton that ultimately drain to the wastewater treatment facilities will require upgrading in accordance with Peel’s Water and Wastewater Master Plan for the Lake-Based Systems.

The City expects, through coordination, that Peel will provide appropriate and timely sanitary sewerage facilities to serve the city’s growth and development subject to the following principles: ensure appropriate protection, conservation and mitigation of the Natural System’s features, functions, and linkages in which sanitary sewerage

facilities may be located; operate sewer systems on a gravity flow basis to avoid the need for pumping stations to the extent practicable and feasible; and, sanitary sewer collection systems designed on the basis of long-term development patterns as provided for in the City's Official Plan and in accordance with Peel's Water and Wastewater Master Plan for the Lake-Based Systems and wastewater design standards and specifications.

Furthermore, to continue to provide wastewater services, wastewater servicing will be installed and maintained in accordance with Regional and Provincial requirements to adequately service the built-up and new developing areas of the City.

1.4.3 Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) (2024) provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario's policy-led planning system, the PPS sets the policy foundation for regulating the development and use of land province-wide, helping achieve the provincial goal of meeting the needs of a fast-growing province while enhancing the quality of life for all Ontarians.

Chapter 3 of the PPS provides direction to municipalities regarding infrastructure and public service facilities. Key policies state that infrastructure "shall be provided in an efficient manner while accommodating projected needs." Policies 3.1.2 and 3.1.3 state that the use of existing infrastructure should be optimized before consideration is given to developing new infrastructure and infrastructure should be strategically located to support effective and efficient delivery of emergency management services.

With respect to wastewater, key sections of Policy 3.6.1 state that planning for wastewater services shall:

- Ensure that these systems are provided in a manner that i) can be sustained by the water resources upon which such services rely; ii) is feasible and financially viable over the lifecycle, and iii) protects human health and safety, and the natural environment;
- Promote water conservation and water use efficiency; and
- Integrate servicing and land use considerations at all stages of the planning process.

Chapter 4 provides for the protection of natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits. Policy 4.1 Natural Heritage identifies that natural features and areas shall be protected for the long term. Specifically, site alteration shall not be permitted in or adjacent to significant wetlands, significant woodlands and valleylands, significant wildlife habitat and significant areas of natural and scientific interest unless the ecological features and areas have been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions. Mitigation measures may be considered to protect, improve or restore sensitive surface water features, sensitive ground water features and their hydrologic functions.

2 STUDY PROCESS

The *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* MCEA is considered to be a Schedule 'B' undertaking pursuant to the Municipal Class Environment Environmental Assessment (MCEA) document (MEA, 2000 as amended in 2007, 2011, 2015, 2023 and 2024). The MCEA process is a process used for the planning of municipal infrastructure projects (roads, water and wastewater, and transit) to ensure that project planning and predesign proceeds in accordance with the *Environmental Assessment Act* (EAA). A Schedule 'B' project includes public and review agency consultation, an evaluation of alternatives, an assessment of the impacts of the preferred solution, and identification of measures to mitigate any adverse impacts. Figure 2-1 is an excerpt from the MCEA document and illustrates the process followed in the typical planning and design of projects covered by a MCEA. A further description of the MCEA process is provided in subsequent sections.

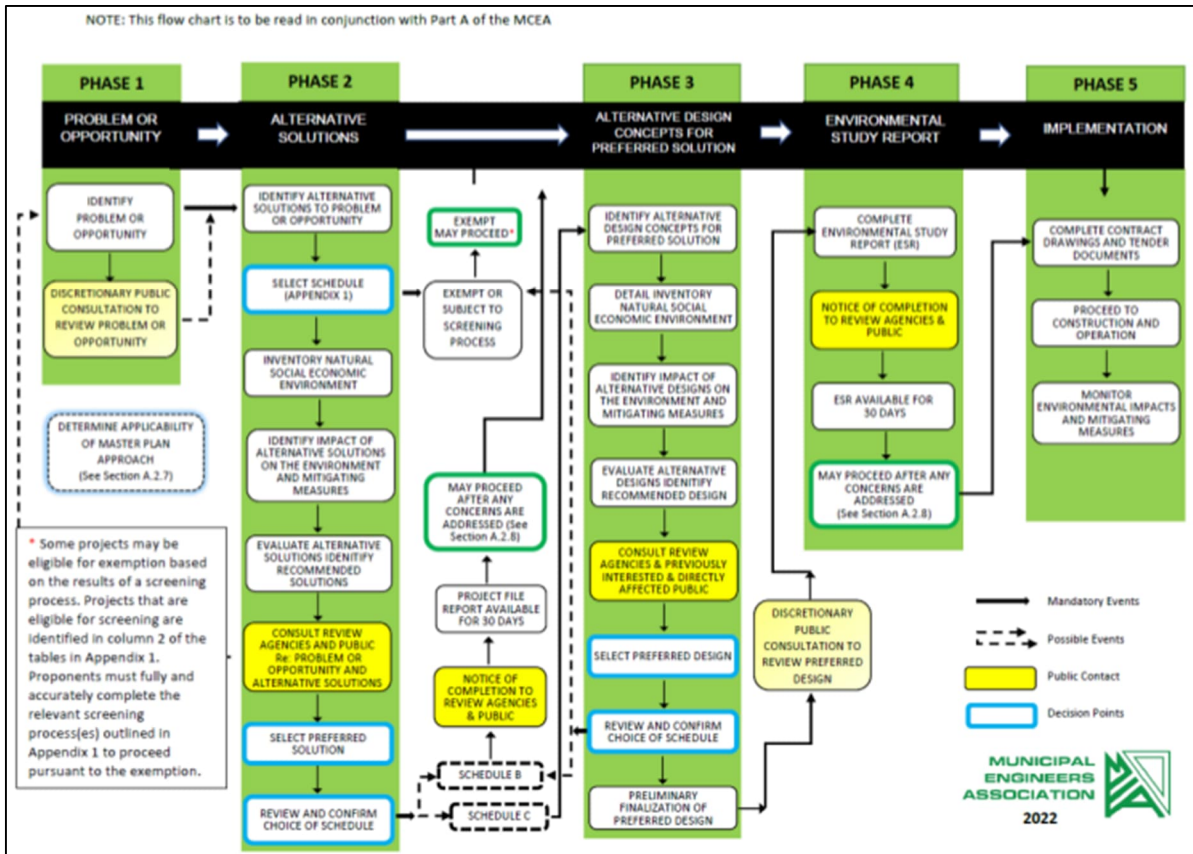


Figure 2-1: MEA MCEA Process

2.1 The Municipal Class Environmental Assessment Process

Every municipality in Ontario is subject to the provisions of the EAA and its requirements to conduct an Environmental Assessment for most public works projects. The MEA's MCEA document provides municipalities with a five-phase planning procedure approved under the EAA which provides direction on how to plan and undertake all municipal projects that recur frequently, are usually limited in scale, and have a predictable range of environmental impacts. Projects considered by the MCEA process include municipal roads and bridges, wastewater, storm water management, water, and transit. The MCEA document also requires that the decision-making process followed by the municipalities

in the planning and implementation of infrastructure is transparent and provides opportunity for public and stakeholder involvement.

Table 2-1 illustrates the steps followed in the planning and design of projects covered under the MCEA process. This table summarizes steps considered essential for compliance with the requirements of the EAA. With increasing complexity and a higher likelihood for adverse environmental impacts, projects are required to complete additional planning steps, termed 'Phases' by the MCEA document, prior to obtaining approval to proceed with a proposed project. The MCEA document provides the following description of the five phases potentially requiring completion before MCEA projects can be approved.

Table 2-1: Phases of the MCEA Process

Phase	Description
Phase 1	Identify the problem (deficiency) or opportunity.
Phase 2	Identify alternative solutions to address the problem or opportunity by taking into consideration the existing environment, and establish the preferred solution considering public, Indigenous Community, and review agency input.
Phase 3	Examine alternative methods of implementing the preferred solution, based upon the existing environment, public, Indigenous Community, and review agency input, anticipated environmental effects and methods of minimizing negative effects and maximizing positive effects.
Phase 4	Document, in an Environmental Study Report a summary of the rationale, and the planning, design and consultation process of the project as established through the above Phases and make such documentation available for review by agencies, Indigenous Communities, and the public.
Phase 5	Complete contract drawings and documents and proceed to construction and operation, monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the completed facilities.

Based on the MCEA document, projects are classified as either exempt (previously classified as Schedule 'A' or 'A+'), Schedule 'B' or 'C' projects. Each of these classifications require a different level of review to complete the requirements of the MCEA, and thus comply with the EAA, as noted below.

Exempt projects are limited in scale and have minimal adverse environmental effects. These projects are pre-approved and may proceed directly to Phase 5 for implementation without following the other phases. However, the public is to be advised prior to project implementation.

Schedule 'B' projects have the potential for some adverse environmental effects. The proponent (i.e. Peel Region in the case of this MCEA) is required to undertake a screening process involving mandatory contact with directly affected public, Indigenous groups and relevant government agencies to ensure that they are aware of the project and that their concerns are addressed. A Schedule 'B' activity requires the proponent to conduct two mandatory points of public contact: two in Phase 2. Additionally, the proponent may elect to undertake a discretionary public consultation at the end of Phase 1 to review and present the problem or opportunity identified.

Phases 1 and 2 of the MCEA process must be followed and a Project File Report (PFR) must be prepared and submitted for review by the public. A Notice of Completion must be submitted to Indigenous communities, review agencies and the public and a period of at least 30 calendar days is provided for comment and input on the PFR.

As long as there are no outstanding concerns raised by the public and/or relevant government agencies, the proponent may proceed to project implementation. However, should a person or party have a concern or objection, they are expected to consult with the proponent to try to resolve the concern.

Schedule 'C' projects are those that have the potential for significant adverse environmental effects and must proceed under the full planning and documentation procedures (Phases 1 to 5) specified in the MCEA document. A Schedule 'C' project is required to complete an Environmental Study Report (ESR), as opposed to a PFR for Schedule 'B' undertakings.

The proponent is required to undertake consultation during multiple phases during the MCEA involving mandatory contact with directly affected public, Indigenous groups and relevant government agencies to ensure that they are aware of the project and that their concerns are addressed. Schedule 'C' projects involve 3 points of mandatory public contact: once during Phase 2, once during Phase 3 and again during Phase 4 after the ESR document is placed on public record. Schedule 'C' projects require that an ESR be prepared and submitted for review by the public. Similar to Schedule 'B' undertakings, should a person or party have a concern or objection, they are expected to consult with the proponent to try to resolve the concern.

2.2 Study Documentation

This PFR documents the planning and design process followed to determine the recommended undertaking and environmentally significant aspects for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility Study*, in accordance with the procedures for Schedule 'B' projects, setting out the planning and decision-making process, including consultation with interested and affected parties and technical agencies, which has been followed to arrive at the preferred solution. The PFR also sets out the mitigating measures proposed to avoid or minimize environmental impacts.

The PFR is organized chronologically in such a way as to clearly demonstrate that the appropriate steps in Phases 1 and 2 have been followed. The report is intended to be a traceable and easily understood record of the proponent's decision-making process. The PFR generally describes the following:

- The problem or opportunity and other background information;
- A description/inventory of the environment;
- The alternative solutions considered, and the evaluation process followed to select the preferred solution;
- The mitigating measures and follow-up commitments, which will be undertaken to minimize environmental impacts including any monitoring necessary during construction; and
- The consultation process and an explanation of how concerns raised by interested and affected parties have been addressed in developing the project.

2.3 30 Day Public Review and Section 16(6) Order

Public, review agency and Indigenous consultation is a key part of the MCEA process. In a Schedule 'B' project, such as the implementation of additional emergency storage requiring property acquisition considered under this MCEA Study, the proponent is required to provide opportunity for the public to be consulted about the proposed project. Consultation is intended to inform interested and affected parties about the proposed project, the various alternative

solutions considered and their anticipated environmental impacts, as well as the preliminary preferred solution. It is also intended that the public be given opportunity to provide input or raise concerns prior to the completion of the MCEA process. It is intended that issues be identified early into the project by means of public involvement and that resolutions between the proponent and the person or party with the objection be achieved through consultation.

It is incumbent on the public that concerns about the environmental effects of a proposed project, or the planning process being followed are brought to the attention of the proponent early in the planning process, when the proponent has greater flexibility to accommodate changes in the project development and the process. Interested persons may provide written comments to the proponent at any point during the study process and up to 30 calendar days from issuance of Notice of Completion.

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. Requests should include the requester contact information and full name for the MECP.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate, or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the MECP is able to efficiently begin reviewing the request.

The request should be sent in writing or by email to:

Minister of the Environment, Conservation and Parks
 Ministry of the Environment, Conservation and Parks
 777 Bay Street, 5th Floor
 Toronto, ON M7A 2J3
 minister.mecp@ontario.ca

Director, Environmental Assessment Branch
 Ministry of the Environment, Conservation and Parks
 135 St. Clair Ave. West, 1st Floor
 Toronto, ON M4V 1P5
 EABDirector@ontario.ca

Paul Rastrullo
 Project Manager
 Peel Region
 10 Peel Centre Drive
 Brampton, ON L6T 4B9
 Paul.rastrullo@peelregion.ca

Visit the MECP's website for more information on requests for orders under Section 16 of the *Environmental Assessment Act* at: <https://www.ontario.ca/page/class-environmental-assessments-section-16-order>

2.4 Study Organization and Study Team

Peel Region retained Associated to conduct the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility* MCEA Study. The Study team, as outlined in Table 2-2 consisted of Peel staff, Associated staff, and sub-consultants providing specific knowledge and expertise to address the requirements for this project in accordance with the *Environmental Assessment Act*.

Table 2-2: Study Team

Team Member	Role	Organization
Greg Beams/ Paul Rastrullo	Project Manager	Peel Region
Paula Steel, P.Eng.	Prime Consultant (Project Manager)	Associated Engineering (Ont.)
Andrea LaPlante, P.Eng.	Environmental Assessment Lead	Associated Engineering (Ont.)
Lisa Merritt, M.Sc.	Archaeologist	Archaeological Services Inc. (ASI)
Lindsay Graves, MA	Cultural Heritage Specialist	Archaeological Services Inc. (ASI)
Austin Adams, M.Sc., EP	Ecologist	Palmer (SLR)

2.5 Study Schedule and Consultation Process

As part of the planning process, several steps have been completed to inform government agencies, Indigenous groups, affected landowners and the local community/general public of the nature and scope of the project and to solicit any comments.

Table 2-3 outlines the key milestone dates of the project to date and projected to completion, including dates of notification to interested and affected parties and agencies. Further consultation process details are provided within Section 6 of this report.

Table 2-3: Key Milestone Dates

Schedule Item	Date
Initiate MCEA Study	October 2023
Notice of Study Commencement	November 30, 2023
Notice of Online Public Information Centre	September 30, 2024
Online Public Information Centre	October 14 to October 28, 2024
Completion of Project File Report	November 2024
Notice of Study Completion	March 3, 2025
Project File Report 30 Day Review Period	March 3 to April 2, 2025
Detailed Design	2025 to 2026
Construction	Fall 2026 to Spring 2028

PHASE I: IDENTIFICATION OF PROBLEMS AND OPPORTUNITIES

3 PROBLEM AND OPPORTUNITY STATEMENT

The Problem and Opportunity Statement provides a clear statement of the problem and opportunities that need to be addressed for a specific undertaking. The various analyses (e.g. archaeological assessment, natural environment assessment) and existing conditions provide input for and contribute to the identification and description of the problem or opportunity. The prevailing deficiencies within the Study Area can be summarized by the following statement.

Problem and Opportunity Statement

The Lakelands Wastewater Pumping Station (WWPS), located in the City of Brampton, services the Lakelands Village residential development. The WWPS was constructed in 2004 and has a current firm capacity of 64.0 L/s, with an expected buildout capacity of 72.0 L/s. The existing WWPS requires upgrades to meet the current Peel Region design standards and increase its firm peak flow capacity to 72.0 L/s. The WWPS also requires the addition of 2-hour emergency storage.

Through previous assessments it was determined that the existing WWPS site does not have adequate space or capacity to provide the 2-hour emergency storage and a piped storage system was not feasible due to hydrogeological constraints. Hence, the 2-hour emergency storage will need to be in the form of an offline storage facility, which will require property acquisition by Peel. Therefore, Peel has initiated a Municipal Class Environmental Assessment (MCEA) to develop and evaluate potential off-site locations within the vicinity of the WWPS for the placement of the new offline storage facility. Alternative locations will be considered based on proximity to the WWPS site, impacts to the natural environment, impacts to residents during construction and operation (i.e.: noise and odour), characteristics of the subsurface soil and groundwater conditions, and accessibility for maintenance and operation by Peel Operations staff.

PHASE II: IDENTIFICATION & EVALUATION OF ALTERNATIVE SOLUTIONS

4 EXISTING CONDITIONS

4.1 Lakelands Wastewater Pumping Station (WWPS)

The Lakelands WWPS is located at 26 Stoneylake Avenue in the City of Brampton within the Lakelands Village residential development. The wastewater generated in this residential development flows to the Lakelands WWPS through a series of gravity sewers. The current firm capacity of the WWPS is 64.0 L/s as indicated by the CofA, with an expected buildout capacity of 72.0 L/s.

Two gravity sewers, one from the north and one from the south, combine at a maintenance hole. Here the two sewers transition to a single sewer that passes through a final maintenance hole prior to entering the wet well. Currently the Lakelands WWPS and collection system has no overflow.

The Lakelands WWPS was constructed in 2004, and the main existing components are as follows:

- Underground cast-in-place concrete wet well with three (3) submersible pumps (2 duty and 1 standby), level controls and station piping;
- The current pumps are 7.5 KW (10 HP) Flygt submersible centrifugal pumps, each rated for 32.1 L/s at a total dynamic head (TDH) of 17.1 m;
- Valve chamber for forcemain connections, excluding the forcemain bypass; and,
- Generator and control building.

Per Peel's Wastewater Pumping Station Design Standards (Version 1.1, April 16, 2022) the Lakelands WWPS is a Design Style III facility.

Upgrades are being undertaken at the Lakelands WWPS to ensure the station meets current Peel design standards, increase its firm peak flow capacity through various site works and the addition of an offline 2-hour storage facility. From previously completed assessments (Associated, 2019) various inline and offline emergency storage options were considered, with the ultimate recommendation of proceeding with a 2-hour offline storage facility accepted by Peel.

4.1.1 Lakelands WWPS Drainage Area

The Lakelands WWPS receives wastewater generated in the residential development, which flows to the WWPS through a series of gravity sewers. The drainage area for the WWPS is 65.24ha, with 0.8ha of commercial area, 46.1ha of residential area and no industrial or institutional areas. Figure 4-1 depicts the Lakelands WWPS drainage area.



Figure 4-1: Lakelands WWPS Drainage Area

4.1.2 Storage Options

As part of Associated's original assignment for Peel in 2016, several reviews and investigations were completed to determine the optimal storage solution of the Lakelands WWPS. Storage options assessed included: on-site storage tank, in-line storage tunnel and offline storage tank.

To support the assessment of storage options, geotechnical and hydrogeological investigations were carried out in 2017. These investigations revealed that the groundwater level was approximately 4.4m below the ground level. This shallow water table may be a result of the previous land use of the Lakelands neighbourhood as a gravel pit. It was determined that the current water table is significantly higher than the previous groundwater level (by 6m) prior to construction of the subdivision in 2003.

The geotechnical investigations indicate that subsurface soils ranged from sandy silt fill material close to the surface, followed by sand and sandy gravel, and then sand and a lower silt/shale complex. The probable shale bedrock layer could be as deep as 36.0m below grade, based on rock coring results. The hydrogeological investigation revealed that due to the highly permeable nature of the soils in the project area, depending on the method of construction, significant dewatering (millions of litres per day) would be required to construct emergency storage in the dry, which could result in soil settlement in the area.

4.1.2.1 On-Site Storage Tank

On-site storage at the Lakelands WWPS, would consist of a below grade tank which would be constructed on the south-east side of the building. During an emergency situation as the wet well level increases above the normal high-water level (HWL), the wastewater would begin to overflow into the storage tank. The total emergency storage would be a combination of the volume in the new storage tank and the volume in the wet well above the HWL. It is

anticipated that the size of the storage tank would be 10m in length, 5m in width, and 15.5m in depth to provide 2 hours of emergency storage.

Constructability of an on-site storage tank at the Lakelands WWPS site would be difficult due to the limited area available. Traditional excavation methods would not be suitable at this site due to the limited area available, high-water table, depth of the proposed structure and the close proximity to other existing structures (i.e., homes, existing wet well). Therefore, methods such as caisson shoring would need to be used. However, to install caissons in the restricted existing WWPS site area, to the depth required for tank excavation, would require use of a large caisson drilling rig. The construction of this on-site tank was therefore not recommended, as safe set back areas for the required heavy civil machinery, such as drilling rigs and excavators, were not feasible at the station site.

It was also identified that further constraints include the need for relocation of the existing transformer and main power supply for the pumping station, and an area for soil excavation management, given the large volume of materials to be removed for construction of the on-site storage tank.

4.1.2.2 In-Line Storage Tunnel

An in-line storage tunnel option would consist of an overflow from an existing sanitary maintenance hole to a tunnel constructed below the sewer surcharge elevation to provide for two hours of emergency storage (Figure 4-2). A launch shaft on the Lakelands WWPS site and a retrieval shaft at the northwest corner of Stonelyake Avenue and Showboat Crescent, would be required. A 190m long, 1.8m diameter tunnel would be constructed without area-wide dewatering by tunnel boring machine. A 6.5m diameter launch shaft for the tunnel boring machine (TBM) and 6.5m diameter retrieval shaft would be required. The tunnel alignment would include a 200m radius curve due to the property and right-of-way restrictions.



Figure 4-2: Conceptual Layout of In-Line Storage Tunnel

During an emergency, once the wet well level begins to exceed the working volume, the incoming sewers would begin to fill and once the high-water level is reached, sewage would begin to overflow into the launch shaft and subsequently start to fill the 1800mm diameter storage tunnel. This storage tunnel pipe would slope downwards from

the retrieval shaft to the launch shaft, where a pump would be located to pump sewage into the collection system after the system has returned to normal conditions.

Due to the challenging ground conditions and high-water table, using a closed face tunnel excavation methodology, such as microtunnelling, to balance the water head pressure on the TBM during construction is recommended. In addition, the tunnel liner/pipe would act as the finished storage pipe; therefore, it needs to be watertight to resist the water head pressure. The launch and retrieval shafts can be constructed using the 'Sunken Caisson Shaft' methodology, which eliminates the need for dewatering as the structure is completely sealed once the concrete base of the shaft is placed.

Due to the location of the retrieval shaft at the northwest corner of Stonylake Avenue and Showboat Crescent, traffic management would be required. The construction area would require Stonylake Avenue to be reduced to one lane and the south access to Showboat Crescent from Stonylake Avenue to be blocked. No residential driveways would be blocked within the proposed construction area.

It was also identified that a large volume of material would need to be removed from an area that will have restricted access. There would be a requirement for an enhanced soils management and traffic management plan to address the soil removal and the associated noise and dust to minimize impacts on the residents during the construction of the tunnel. Furthermore, an enhanced health and safety plan would be required for construction of the in-line storage tunnel as the construction and proposed closure areas are along a school walking route to access Ashurst Park and the local public and catholic elementary schools.

4.1.2.3 Offline Storage Facility

A new offline storage facility would consist of a concrete tank structure sized for approximately 500m³ of storage, constructed below the sewer surcharge level to prevent basement flooding. To manage the high water table, this tank would require geo-structural considerations (i.e., secant pile wall construction with either jet grouting or tremie plug). For both options, a connecting emergency overflow pipe would be constructed in an existing maintenance hole in the existing gravity sewer collection system which would ultimately overflow into the new offline storage facility. After the emergency event has ended, wastewater would be pumped back into the wastewater collection system.

The construction of an offline storage facility would require land acquisition for both temporary and permanent easements and property acquisition to facilitate both construction activities and regular facility maintenance. Lakelands Village Park has been identified as the preferred location for the offline storage facility as it offers adequate space for construction and equipment laydown and provides separation from existing homes within the Lakelands Village residential development.

4.1.2.4 Storage Option Recommendation

The offline storage facility option was recommended as the preferred storage option, due to constructability concerns with the on-site storage tank option, lower construction costs and minimal impacts to the public due to temporary road closures and proximity to homes compared with the in-line storage tunnel option or on-site storage option.

4.2 Socio-Economic Environment

4.2.1 Land Use and Ownership

The land use designation within the Study Area is primarily residential, with some greenspace associated with the Lakelands Village Park. The existing wastewater gravity sewers are located within City of Brampton owned right-of-ways (ROW), while the Lakelands WWPS is located on a parcel of land owned by Peel Region.

Potential locations for the offline storage facility within the Lakelands Village Park will be within parklands owned by the City of Brampton. Therefore, temporary and permanent easements will be required to facilitate construction of the storage facility.

4.3 Source Water Protection

The *Clean Water Act* (2006) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the *Clean Water Act* include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

In Peel Region, the Credit Valley Conservation –Toronto and Region Conservation – Central Lake Ontario Conservation (CTC), South Georgian Bay –Lake Simcoe (SGBLS) and Halton Hamilton (HH) Source Protection Committees have led the preparation of source water protection plans, all of which apply to various portions of the Region. The Study Area is part of the CTC Region Source Protection Plan area and is within a highly vulnerable aquifer (as shown in Figure 1-4). Impacts of the proposed work will be considered when determining the preferred solution and mitigation measures will be identified.

4.3.1 Toronto and Region Conservation Authority (TRCA)

Based on review of the Toronto and Region Conservation Authority (TRCA) regulation mapping, the Study Area is outside the area regulated O. Reg. 166/06 (Figure 4-3). Therefore, no permitting or approvals are expected from TRCA for the proposed works.



Figure 4-3: TRCA Regulated Area (purple) outside project sites

4.4 Natural Environment

4.4.1 Natural Environment Assessment

Palmer/SLR was contracted to complete a natural environment assessment to support the MCEA Study and proposed upgrades to the Lakelands WWPS.

An initial desktop study was completed to provide a preliminary description of existing ecological conditions, to be used for upgrade design planning and identification of the preferred location for the new offline storage facility. Following field investigations conducted in June and August 2024, a detailed Natural Environment Report (NER) was provided to include a more complete assessment of natural features within the Study Area.

Existing Conditions

The Study Area is located within Ecoregion 6E. As depicted on the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) mapping, the current WWPS is located on a corner lot within an urban, residential neighbourhood and the new offline storage facility is proposed to be located within Lakelands Village Park adjacent to the stormwater management ponds. There are treed trails and a playground in the vicinity. There are no designated natural features such as Provincially Significant Wetlands (PSW) and woodlands (Figure 4-4).



Figure 4-4: NHIC Mapping of Study Area

Vegetation Communities

The Study Area is located within an urban setting. Field investigations identified two community types as comprising the overall Study Area including Single Family Residential (CVR_3) and Parkland (CGL_2). The boundaries of these communities are delineated on Figure 4-5.



Figure 4-5: Existing Ecological Conditions

Species at Risk

A background review was completed for potential SAR habitat opportunities by comparing habitat preferences of species deemed to have potential to occur against current site conditions. The NHIC database, the Ontario Breeding Bird Atlas (OBBA), and the Ontario Reptile and Amphibian Atlas (ORAA) were screened for SAR records in the general vicinity. A total of 21 SAR were screened, as identified through background resources and professional knowledge, including 11 bird species, four mammals, four reptiles, one vascular plant, and one insect. No SAR were recorded during site investigations within the Study Area.

Due to the urban setting and absence of larger trees (>25 cm diameter at breast height (DBH)) there is no potential habitat opportunities for the four Endangered SAR bats. Additionally, the ponds lack structure and aquatic vegetation for turtles and birds.

Impacts Assessment

The proposed works will potentially result in the removal of a limited number of planted trees. Potential impacts to the overall function of the parkland community are not expected. Potential impacts associated with runoff and sedimentation into the stormwater ponds are the primary concern and erosion and sediment control will be necessary.

Potential impacts to wildlife due to construction activity include minor impacts to potential habitat and individuals. Construction activities such as vegetation removal, grading, use of machinery, noise/activity, and other nearby disturbances, should be avoided and/or minimized to the greatest extent feasible. Impacts to wildlife are associated with construction works and are therefore considered short-term.

The Desktop Natural Environment Study technical memo and Natural Environment Assessment technical memo can be found in Appendix A.

4.5 Cultural Environment

4.5.1 Archaeological Assessment (Stage 1)

Archaeological Services Inc. (ASI) was contracted to conduct a Stage 1 Archaeological Assessment for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility MCEA Study*.

The archaeological field work was completed in November 2023, to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. The property inspection determined that the entirety of the Study Area has been subjected to deep soil disturbance events due to aggregate extraction after 1954, construction of the Lakelands Lake, and construction of the surrounding residential subdivision. Therefore, the Study Area does not retain archaeological potential and does not require further archaeological assessment (Figure 4-6).

Based on the findings, the following recommendations are made:

- The Potential Storage Tank Location 1 Study Area, Potential Storage Tank Location 2 Study Area, and Potential Storage Tank Location 3 Study Area do not retain archaeological potential on account of deep and extensive land disturbance. These lands do not require further archaeological assessment; and,
- Should the proposed work extend beyond the current Study Area, further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.



Figure 4-6: Results of Archaeological Assessment Stage 1

The Stage 1 Archaeological Assessment Report prepared by ASI is provided in Appendix B.

4.5.2 Cultural Heritage Report

Archaeological Services Inc. (ASI) was contracted to conduct a Cultural Heritage Report for the *Lakelands Wastewater Pumping Station (WWPS) New Offline Storage Facility MCEA Study*.

Fieldwork was completed in January 2024 with subsequent reporting to provide a summary of the inventory of known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s), identify existing conditions of the project Study Area, provide a preliminary impact assessment, and propose appropriate mitigation measures.

No known built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) were identified within the Study Area. No additional potential B.H.R.s or C.H.L.s were identified during the background information review and fieldwork. Based on the results of the assessment, the following recommendations have been developed:

Peel Region

- Should future work require an expansion of the Study Area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential B.H.R.s and C.H.L.s.
- The report should be submitted to heritage planning staff at the City of Brampton, planning staff at the Regional Municipality of Peel, and the Ministry of Citizenship and Multiculturalism for review and comment, and any other local heritage stakeholders that may have an interest in this project including the Brampton Heritage Board, the Brampton Historical Society, and the Peel Art Gallery, Museum and Archives. The final report should be submitted to the City of Brampton for their records.

The Cultural Heritage Report prepared by ASI is provided in Appendix C.

5 ALTERNATIVE SOLUTIONS

5.1 Identification of Alternative Solutions

Under Phase 2 of the MCEA planning and design process, reasonable and feasible solutions to address the needs, opportunities, and problem (as summarized in Section 3) are identified and examined. Alternative solutions are different ways of potentially solving the problem or addressing the opportunity.

Considering the Problem and Opportunity Statement and previous assessments completed, three (3) locations for the siting of the offline storage facility have been identified (Figure 5-1) and will be evaluated for this MCEA. The alternatives for the MCEA study include:

- Alternative 1: Do Nothing
- Alternative 2: Storage Tank Location 1 – Northern portion of Lakelands Village Park, southeast of the Southlake Boulevard and Stonelyake Avenue intersection
- Alternative 3: Storage Tank Location 2 – Southeastern portion of Lakelands Village Park, north of the Stonelyake Avenue and Deep Sea Drive intersection
- Alternative 4: Storage Tank Location 3 – Eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection



Figure 5-1: Study Alternatives – Offline Storage Facility Locations

Each of these alternatives are discussed and evaluated in the following sections.

5.1.1 Alternative 1: Do Nothing

The *Environmental Assessment Act* (EAA) requires the consideration of the “Do Nothing” alternative. This alternative is included to provide a baseline scenario in which to compare all other alternatives and consider what will happen if there is no addition of a 2-hour storage facility for the Lakelands WWPS. The existing WWPS does not have an overflow nor is an overflow incorporated into the sewage collection system. The sewage collection system has a basement flooding elevation of 232.5m. In the event that the WWPS experiences a 2-hour shutdown, all residential homes that could be affected by surcharged sewers above an elevation of 232.5m are shown in orange in Figure 5-2 below. The risk of basement flooding, however, depends upon the grade elevation of the home relative to the sewer surcharge elevation (i.e. all houses connected to the sewer system highlighted in orange are not at equal risk of basement flooding). Homes with lower basement elevations and those closer to the WWPS are expected to have higher risk of basement flooding in the event of a shut down at the WWPS.



Figure 5-2: Surcharged Sewers after 2-Hour Shutdown at Lakelands WWPS

5.1.2 Alternative 2: Storage Tank Location 1 – Northern portion of Lakelands Village Park, southeast of the Southlake Boulevard and Stonelake Avenue intersection

Location 1 is approximately 390m from the Lakelands WWPS at the northern portion of Lakelands Village Park, southeast of the Southlake Boulevard and Stonelake Avenue intersection (Figure 5-1). The greenspace, which functions as an entry feature to the Lakelands Village Park and trail network, provides an area to construct the offline storage facility. Reviewing the available space and considering the existing underground infrastructure, primarily large diameter storm sewers, two tank configurations were considered: A and B as shown in Figure 5-3.

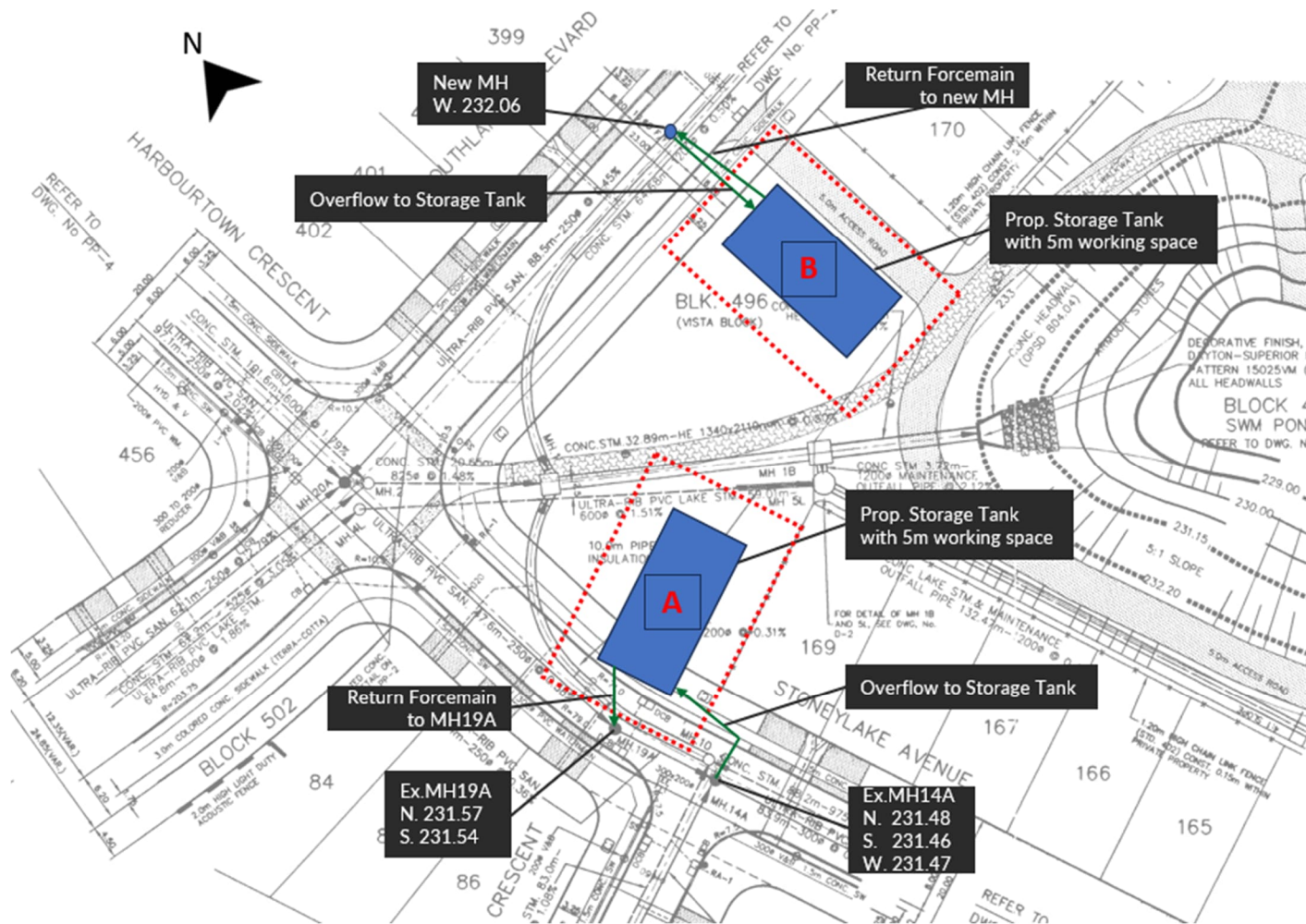


Figure 5-3: Configurations of Storage Tank at Location 1

For each configuration, the proposed offline storage tank is 20m long by 10m wide, with a 5m working space around the perimeter. For Configuration A, a review of the existing sanitary and storm infrastructure on Stoneylake Avenue indicates that an overflow sewer connection from MH 19A would be in conflict with the existing 1200mm diameter storm sewer (Figure 5-4) and not feasible. Connecting the overflow sewer at MH14A is feasible; however, would need to be placed at a lower elevation to avoid conflict with the existing storm sewer. For this scenario, passive overflow at elevation 232.5m is not viable. An automated gate and level instruments would be required in MH14A to only allow bypassing during events above 232.5m. Once the flow surcharged to elevation 232.5m, the gate would be opened and would overflow into the storage tank. After the emergency event has ended, the tank would be emptied by pumping back into the sanitary sewer collection system at MH19A.

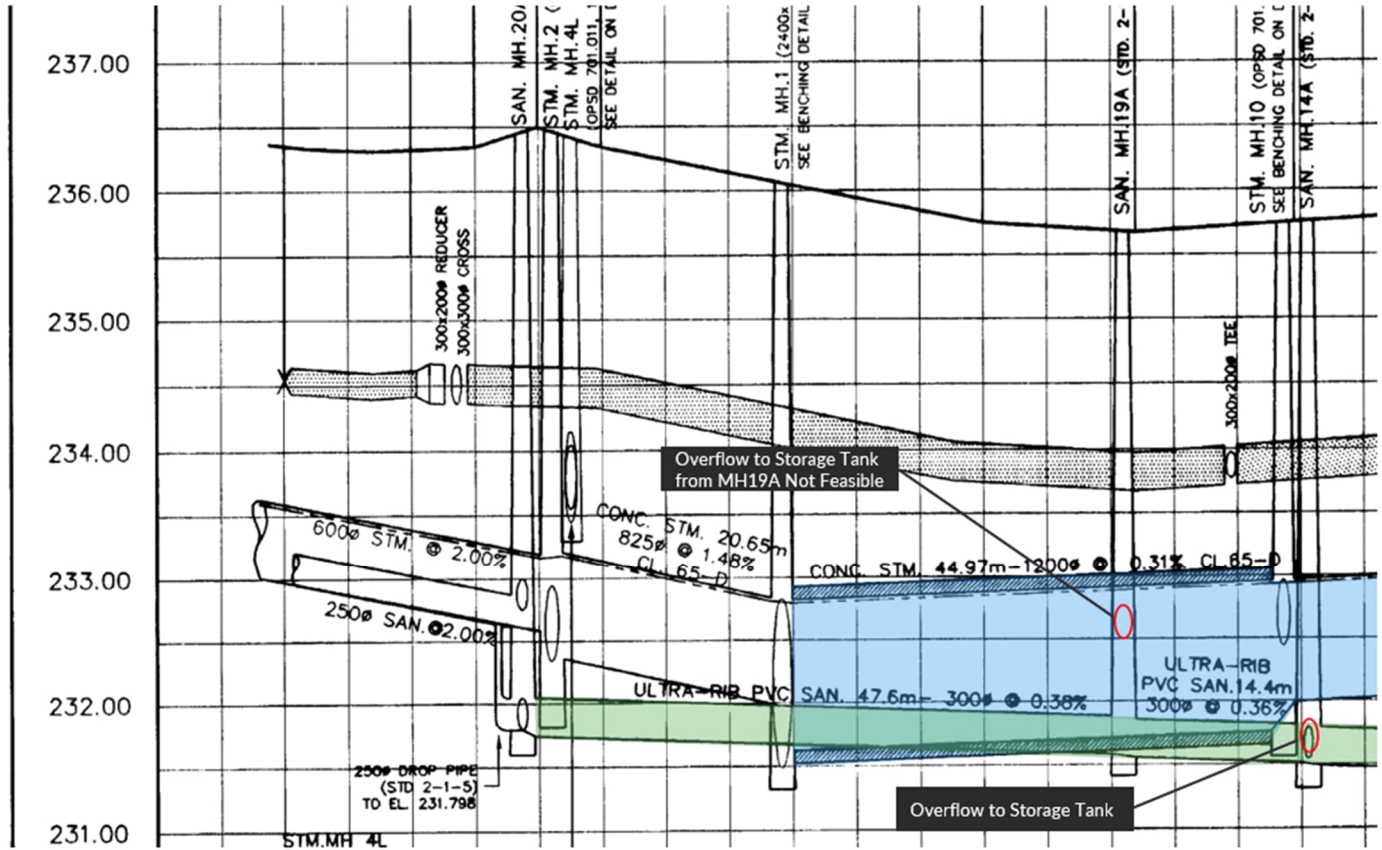


Figure 5-4: Existing Infrastructure and Proposed Overflow Piping (Configuration A)

Excavation approximately 4.7m below the flooding level (232.5m) to reach a bottom elevation of 227.8m, would result in the tank having a total depth of excavation of approximately 8.7m below grade (approximate ground elevation 236.5m).

At Configuration B, an overflow sewer connection would be provided from a new MH upstream of MH20A. A review of the existing sanitary and storm infrastructure on Southlake Boulevard indicates that an overflow sewer connection at elevation 232.5m would be in conflict with the existing 1200mm diameter storm sewer. To avoid conflict with the existing storm sewer, the overflow sewer would need to be placed at an elevation lower than the existing sanitary sewer along Southlake Boulevard, which would require a MH structure to house an automated gate, level instruments and/or drop structure. For this scenario, passive overflow at elevation 232.5m is not viable. An automated gate and level instruments would be required in the new MH to only allow bypassing during events above 232.5m. Once the flow surcharged to elevation 232.5m, the gate would be opened and would overflow into the storage tank. After the emergency event has ended, the tank would be emptied by pumping back into the sanitary sewer collection system at the new MH. Excavation approximately 5.0m below the flooding level (232.5m) to reach a bottom elevation of 227.5m, would result in the tank having a total depth of excavation of approximately 9m below grade (approximate ground elevation 236.5m).

Considerations for Location 1 include:

- Property acquisition from the City of Brampton within the Lakelands Village Park area will be necessary;
- Temporary disturbance of existing sidewalks and pathways will occur during construction;

- Constructability concerns with proximity and location of large storm infrastructure and existing utilities, including conflicts between storm sewers and overflow piping;
- Technical concerns due to requirement for automated gate and level sensors in MH, which is more complicated from an operations perspective, and will require more maintenance compared with passive overflow;
- Negative impacts to neighbouring properties during construction due to noise and dust and close proximity to the construction area;
- Potential negative impacts to neighbouring properties during operation of facility, such as odour and intermittent pedestrian restrictions and lane reduction requirements when Region needs to complete maintenance activities, particularly Configuration A;
- Constructability concerns with high water table;
- No archaeological impacts are anticipated as Location 1 has been cleared of archaeological potential; and
- Minor temporary negative impacts on the natural environment from disturbance of parkland/green space; however, mitigation measures and restoration will minimize any permanent impacts.

Based on the above considerations, it is recommended to remove Configuration A as a viable option, due to the proximity and potential negative impacts to both the adjacent residential dwelling and the existing underground storm infrastructure. Configuration B will be carried forward to evaluation for Location 1.

5.1.3 Alternative 3: Storage Tank Location 2 – Southeastern portion of Lakelands Village Park, north of the Stonylake Avenue and Deep Sea Drive intersection

Location 2 is approximately 140m from the Lakelands WWPS at the southeast portion of Lakelands Village Park, north of the Stonylake Avenue and Deep Sea Drive intersection (Figure 5-1). The greenspace, which functions as a buffer area between residential properties and the Lakelands Park trail network, provides an area to construct the offline storage facility. Reviewing the available space and considering the existing sanitary collection system, two overflow and forcemain configurations were considered: A and B as shown in Figure 5-5.

The configuration at Location 2 includes a 20m long by 10m wide offline storage tank, with a 5m working space around the perimeter. For piping Configuration A, an overflow sewer connection would be provided from a new MH upstream of MH 67A on Stonylake Avenue. Once the surcharge sewers reach an elevation of 232.5m it would overflow into the storage tank. After the emergency event has ended, the tank would be emptied by pumping back into the sanitary sewer collection system at the new MH. Based on this piping configuration, excavation approximately 4.1m below the flooding level (232.5m) to reach a bottom elevation of 228.4m, would result in the tank having a total depth of excavation of approximately 5.6m below grade (approximate ground elevation 234m).

For piping Configuration B, an overflow sewer connection would be provided from a new MH upstream of MH 79A at intersection of Stonylake Avenue and Deep Sea Drive. Once the surcharge sewers reach an elevation of 232.5m it would overflow into the storage tank. After the emergency event has ended, the tank would be emptied by pumping back into the sanitary sewer collection system at the new MH. Based on this piping configuration, excavation approximately 4.3m below the flooding level (232.5m) to reach a bottom elevation of 228.2m, would result in the tank having a total depth of excavation of approximately 5.8m below grade (approximate ground elevation 234m).

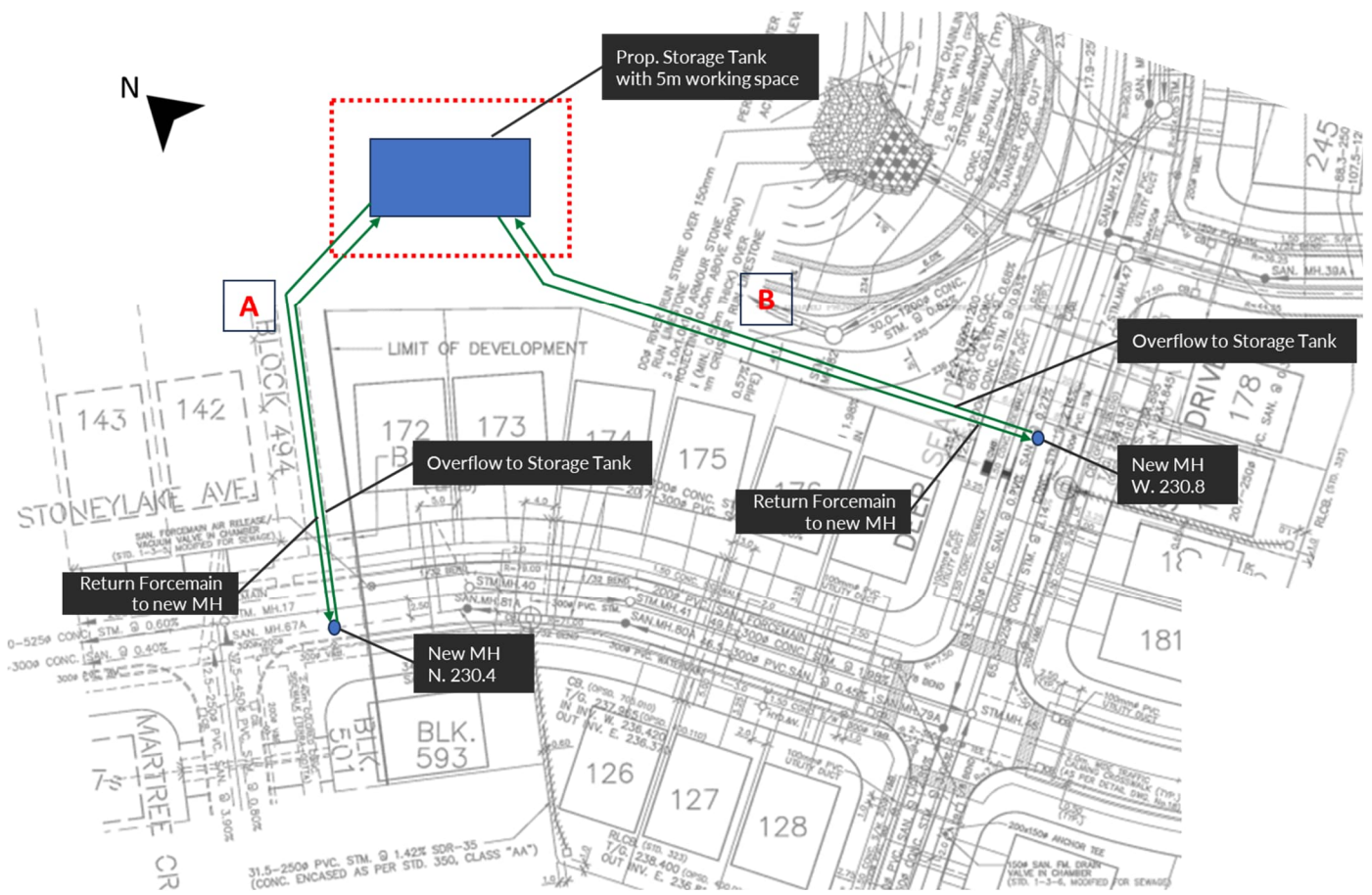


Figure 5-5: Storage Tank Configuration at Location 2

Considerations for Location 2 include:

- Property acquisition from the City of Brampton within the Lakelands Village Park area will be necessary;
- Temporary disturbance of existing sidewalks and pathways will occur during construction;
- Constructability concerns with the accessibility of location by large equipment and vehicles during construction and operation and maintenance;
- Operational concerns related to site security, property damage, and safety of workers in this area with lower public visibility;
- Negative impacts to neighbouring properties during construction due to noise and dust and close proximity to construction area;
- Potential negative impacts to neighbouring properties during operation of facility, such as odour;
- New sewers are within 3m of property lines;
- Constructability concerns with high water table;
- No archaeological impacts are anticipated as Location 2 has been cleared of archaeological potential; and
- Minor temporary negative impacts on the natural environment from disturbance of parkland/green space; however, mitigation measures and restoration will minimize any permanent impacts.

5.1.4 Alternative 4: Storage Tank Location 3 – Eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection

Location 3, at the intersection of Deep Sea Drive and Southlake Boulevard, is approximately 480m from the Lakelands WWPS (Figure 5-1). The park area, adjacent to the play structure and storm pond, provides adequate space to construct the offline storage facility. The configuration at Location 3 (Figure 5-6) includes a 20m long by 10m wide offline storage tank, with a 5m working space around the perimeter. Excavation approximately 3.8m below the flooding level (232.5m) to reach a bottom elevation of 228.7m, would result in the tank having a total depth of excavation of approximately 7.8m below grade (approximate ground elevation 236.5m). An overflow sewer connection would be provided from MH 59A. Once the surcharged sewers reach an elevation of 232.5m it would overflow into the storage tank. After the emergency event has ended, the tank would be emptied by pumping back into the sanitary sewer collection system at MH 59A.

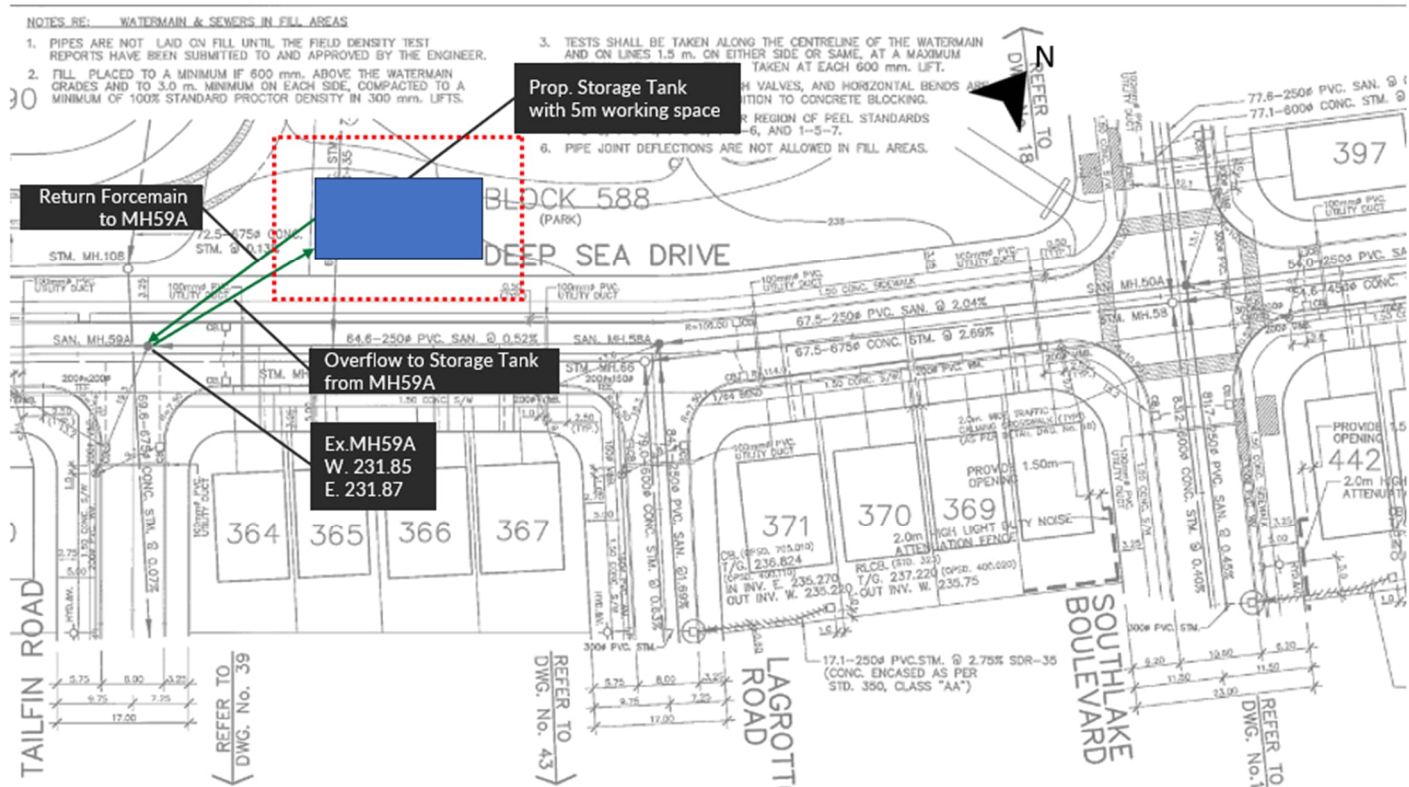


Figure 5-6: Storage Tank Configuration at Location 3

Considerations for Location 3 include:

- Property acquisition from the City of Brampton within the Lakelands Village Park area will be necessary;
- Temporary disturbance of existing sidewalks and pathways will occur during construction, with the need to relocate some pathways to suit final installation;
- Temporary disturbance of neighbourhood parkland space during construction;
- Potential for impact on City's ability to implement additional programming within the parkland space (ie: courts, enhanced shade structure, etc.) depending on final placement of tank and above ground structure;
- Minor storm infrastructure (250mm diameter storm sewer) and no existing utilities in proximity to proposed tank location;
- Adequate construction laydown area(s) available;

- No adjacent neighbouring properties to the facility;
- Constructability concerns with high water table;
- No archaeological impacts are anticipated as Location 3 has been cleared of archaeological potential; and
- Minor temporary negative impacts on the natural environment from disturbance of parkland/green space; however, mitigation measures and restoration will minimize any permanent impacts.

5.2 Evaluation Process

5.2.1 Evaluation Criteria and Process

The following evaluation criteria (Table 5-1) have been identified and further broken down to comparatively assess the alternatives in a qualitative manner and select the best alternative to address the Problem Statement outlined in Section 3.

Table 5-1: Evaluation Criteria

Evaluation Criteria	Performance Measure
Technical Environment	<ul style="list-style-type: none"> • Constructability and complexity of implementation • Impacts on existing utilities and infrastructure • Accessibility for construction and operation and maintenance • Addresses study problem • Compliance with the Region of Peel's design and operating requirements
Natural Environment	<ul style="list-style-type: none"> • Potential encroachment to designated natural areas and regulated areas • Impacts on significant wildlife and their habitat, including Species at Risk (SAR) • Impacts on vegetation communities • Surface water impacts • Groundwater impacts
Social Environment	<ul style="list-style-type: none"> • Impacts on private property/residential properties • Impacts on neighbourhood greenspaces and parklands • Impacts on road access to residential properties • Nuisance impacts (vibration, dust and noise issues during construction)
Cultural Environment	<ul style="list-style-type: none"> • Disruption of built and cultural heritage features • Impact on areas of archaeological potential
Economic Environment	<ul style="list-style-type: none"> • Construction Capital Costs • Region's operating and maintenance costs • Land acquisition and/or easement requirements

A numerical or weighted ranking system was not used; instead, the evaluation focused on the strengths and weaknesses of each alternative to identify the best possible solution. Although set weightings of criteria were not specifically assigned, all evaluation criteria are not necessarily created equal and professional judgement and

knowledge of the area, and issues were used to understand preferences. The process requires considering trade-offs to select the preferred alternative, which needs to take into consideration whether potential impacts can be mitigated or not.

The selection of the preferred alternative is based on the relative advantages and disadvantages of each alternative within the natural environment, social environment, technical and economic evaluation criteria and includes consideration of mitigation measures. The ranking of each alternative solution relative to the specific evaluation criterion was conducted using a colour-coded system as shown in Table 5-2.

Table 5-2: Evaluation Scale

Rating	Colour Code
Preferred	Light Green
Less Preferred	Yellow
Least Preferred	Light Red

5.2.2 Evaluation Matrix

The comparison of each criterion was made horizontally (within a category such as natural environment) between the alternatives and then vertically (between categories such as natural, technical environments) to derive the recommended solution. A summary row is provided where the alternatives are compared against each other within the five categories of natural, social, cultural, technical, and economic environments. The summary rows are then compared to determine the preferred alternative solution based on all aspects of the environment. The alternative solution which demonstrated the greatest number of “most” preferred boxes and/or the fewest “least” preferred boxes relative to their potential environmental effects would likely be the preferred alternative. However, this was dependent on the extent of potential effects and whether they could be mitigated.

The comparative evaluation for each alternative is provided in the Evaluation Matrix provided as Table 5-3.

Table 5-3: Evaluation Matrix

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
Technical Environment	Constructability and complexity of implementation	<ul style="list-style-type: none"> In the absence of storage tank construction, no constructability concerns 	<ul style="list-style-type: none"> Constructability concerns with soil conditions and groundwater levels; tremie method or jet grouting plugs will need to be used to facilitate construction without extensive dewatering Due to elevation change of proposed site between roadway (Southlake Blvd) and trail of approx. 2m, potential for deeper structure or portion of the tank exposed above ground Considerable construction working area available within greenspace; may require temporary relocation of trail 	<ul style="list-style-type: none"> Constructability concerns with soil conditions and groundwater levels; tremie method or jet grouting plugs will need to be used to facilitate construction without extensive dewatering Constructability concerns with accessing construction site with heavy civil equipment anticipated for construction Construction working area restricted in size due to location of trail network, SWM pond and Lake proximity and residential dwellings 	<ul style="list-style-type: none"> Constructability concerns with soil conditions and groundwater levels; tremie method or jet grouting plugs will need to be used to facilitate construction without extensive dewatering Considerable construction working area available within parklands; may require temporary relocation of trail and closure of passive parkland area
	Impacts on existing utilities and infrastructure	<ul style="list-style-type: none"> In the absence of storage tank construction, no impacts on existing utilities and infrastructure 	<ul style="list-style-type: none"> Existing utility infrastructure (pedestals, cabinets) potential to be impacted; possible protection during construction or need to relocate Existing underground storm infrastructure within greenspace to be protected during construction; however 	<ul style="list-style-type: none"> Minimal impacts on existing utilities and infrastructure anticipated due to proposed location of tank Existing utility infrastructure at entrance to trail network on Stonelake Ave potentially impacted and requires relocation, if 	<ul style="list-style-type: none"> Impacts to existing utility infrastructure minimal Existing 250mm storm sewer may require relocation

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
			siting of tank is feasible without major conflict or close proximity <ul style="list-style-type: none"> Conflict with existing 1200mm diameter storm sewer on Southlake Boulevard and proposed overflow piping would remove passive overflow 	chosen location of linear infrastructure	
	Accessibility for construction and operations & maintenance	<ul style="list-style-type: none"> In the absence of storage tank implementation, no concerns with accessibility during construction or operations and maintenance 	<ul style="list-style-type: none"> Accessibility for construction and operation and maintenance of facility will be via Southlake Boulevard with no concerns Existing access road to trail network and SWM pond can be used for permanent access to facility post-construction 	<ul style="list-style-type: none"> Accessibility of site major concern during construction for heavy civil equipment required Permanent accessibility of facility for operations and maintenance difficult without improvements to existing trail network system to be used as access pathway Significant concerns of safety and security of Operations staff due to location of site as well as high potential for vandalism due to visibility of site by public 	<ul style="list-style-type: none"> Accessibility for construction and operation and maintenance of facility will be via Deep Sea Drive with no concerns Permanent access to facility post-construction can be integrated into existing trail network
	Addresses Study Problem	<ul style="list-style-type: none"> Does not address study problem of needing to provide emergency storage for the Lakelands WWPS 	<ul style="list-style-type: none"> Addresses study problem of providing 2-hour emergency storage for the Lakelands WWPS and mitigate risk of basement flooding in neighbourhood homes 	<ul style="list-style-type: none"> Addresses study problem of providing 2-hour emergency storage for the Lakelands WWPS and mitigate risk of basement flooding in neighbourhood homes 	<ul style="list-style-type: none"> Addresses study problem of providing 2-hour emergency storage for the Lakelands WWPS and mitigate risk of basement flooding in neighbourhood homes

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
Natural Environment	Compliance with Region requirements	<ul style="list-style-type: none"> Does not comply with Region's Design and Operation Standards 	<ul style="list-style-type: none"> Will comply with Region's Design and Operation Standards 	<ul style="list-style-type: none"> Will comply with Region's Design and Operation Standards; however, permanent accessibility to the facility could be challenging due to location 	<ul style="list-style-type: none"> Will comply with Region's Design and Operation Standards
	Encroachment on designated natural areas/regulated areas	<ul style="list-style-type: none"> In the absence of storage tank construction, no potential impacts on designated/ regulated areas, if present 	<ul style="list-style-type: none"> No designated natural features such as Provincially Significant Wetlands (PSW) and woodlands Outside of the TRCA's regulation area under O.Reg. 166/06 	<ul style="list-style-type: none"> No designated natural features such as Provincially Significant Wetlands (PSW) and woodlands Outside of the TRCA's regulation area under O.Reg. 166/06 	<ul style="list-style-type: none"> No designated natural features such as Provincially Significant Wetlands (PSW) and woodlands Outside of the TRCA's regulation area under O.Reg. 166/06
	Impact on wildlife and SAR and their habitat	<ul style="list-style-type: none"> In the absence of storage tank construction, no potential impacts on wildlife, SAR and their habitat 	<ul style="list-style-type: none"> 21 SAR species have potential to occur within area; larger trees may present habitat opportunities for SAR bat species Minor tree removal not expected to impact potential habitat 	<ul style="list-style-type: none"> 21 SAR species have potential to occur within area; larger trees may present habitat opportunities for SAR bat species Considerable tree removal required to install linear infrastructure and tank 	<ul style="list-style-type: none"> 21 SAR species have potential to occur within area; larger trees may present habitat opportunities for SAR bat species Minor tree removal not expected to impact potential habitat
	Impacts to vegetation communities	<ul style="list-style-type: none"> In the absence of storage tank construction, no potential impacts on vegetation communities 	<ul style="list-style-type: none"> Parkland land type (Anthropogenic Ecological Land Classification) Impact to existing manicured lawn, and minor deciduous tree plantings 	<ul style="list-style-type: none"> Parkland land type (Anthropogenic Ecological Land Classification) Impact to existing manicured lawn, hedgerows and deciduous and coniferous tree plantings 	<ul style="list-style-type: none"> Parkland land type (Anthropogenic Ecological Land Classification) Impact to existing manicured lawn, and minor deciduous tree plantings

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
	Surface water impacts	<ul style="list-style-type: none"> In the absence of storage tank construction, no potential impacts on surface water 	<ul style="list-style-type: none"> Active construction and excavation will require sediment and erosion controls to minimize impact to SWM pond which has approximately 30m separation from construction site 	<ul style="list-style-type: none"> Active construction and excavation will require sediment and erosion controls to minimize impact to SWM pond and Lakelands Lake, which have approximately 25m and 30m separation from construction site, respectively 	<ul style="list-style-type: none"> Active construction and excavation will require sediment and erosion controls to minimize impact to SWM pond which has approximately 35m separation from construction site
	Groundwater impacts	<ul style="list-style-type: none"> No water taking/dewatering anticipate in the absence of storage tank construction 	<ul style="list-style-type: none"> Tank construction will use either tremie method or jet grouting plug in order to mitigate dewatering requirements Dewatering zone of influence will be confined to volume of the proposed tank excavation zone Minimal water taking anticipated for linear infrastructure construction 	<ul style="list-style-type: none"> Tank construction will use either tremie method or jet grouting plug in order to mitigate dewatering requirements Dewatering zone of influence will be confined to volume of the proposed tank excavation zone Some water taking anticipated for linear infrastructure construction 	<ul style="list-style-type: none"> Tank construction will use either tremie method or jet grouting plug in order to mitigate dewatering requirements Dewatering zone of influence will be confined to volume of the proposed tank excavation zone Minimal water taking anticipated for linear infrastructure construction
Social Environment	Impacts to private property/residential properties	<ul style="list-style-type: none"> Greater risk of basement flooding within the neighbourhood in emergency event with no additional storage provided in the system 	<ul style="list-style-type: none"> Addition of storage facility would mitigate basement flooding within the neighbourhood Proximity of storage facility adjacent to 46 Southlake Boulevard would be approx. 10m and approx. 25m from homes across the street on Southlake Blvd 	<ul style="list-style-type: none"> Addition of storage facility would mitigate basement flooding within the neighbourhood Proximity of storage facility to homes along Stonelake Ave would be approx. 20m from rear of homes Can maintain vegetative screening and 	<ul style="list-style-type: none"> Addition of storage facility would mitigate basement flooding within the neighbourhood No adjacent residential homes to storage facility Homes across from the facility on Deep Sea Drive would have approx. 25m separation

CRITERIA	Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
		<ul style="list-style-type: none"> • Can maintain vegetative screening and incorporate mitigating measures within design to address potential odour and light impacts • During construction there may be settlement concerns due to proximity to homes. This can be monitored by conducting property surveys before and after construction and implementing monitoring of vibration, noise and settlement during construction. 	<p>incorporate mitigating measures within design to address potential odour and light impacts</p> <ul style="list-style-type: none"> • During construction there may be settlement concerns due to proximity to the homes. This can be monitored by conducting property surveys before and after construction and implementing monitoring of vibration, noise and settlement during construction. 	<ul style="list-style-type: none"> • Can incorporate vegetative screening and mitigating measures within design to address potential odour and light impacts
Impacts on neighbourhood greenspaces and parklands	<ul style="list-style-type: none"> • In the absence of storage tank construction, no impacts on greenspaces and parklands 	<ul style="list-style-type: none"> • Greenspace functions as walking and entry feature to the Lakelands Park, pond and trail network • No planned park programming by City of Brampton at this location • During construction trail network can remain functional with appropriate construction fencing and staging 	<ul style="list-style-type: none"> • Greenspace functions as buffer area between houses and Lakelands Park, ponds and trail network • No planned park programming by City of Brampton at this location • Potential impact to existing trail network and/or trail access off of Stoneylake Ave during construction to provide construction access and install linear infrastructure 	<ul style="list-style-type: none"> • Greenspace functions as neighbourhood parkland • Siting of storage facility within parklands could impact City of Brampton's ability to implement future programming within the space • Siting of storage facility as close to roadway and SWM pond as possible to reduce permanent impacts to passive parkland area is proposed • Temporary closure of portion of passive

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
					parkland and trail network to provide construction staging and work area
	Impacts on road access to residential properties	<ul style="list-style-type: none"> In the absence of storage tank construction, no impacts on road access and traffic 	<ul style="list-style-type: none"> Minimal impact on road access and traffic during construction of tank as works will occur within greenspace off of roadway Minor impact on roadway during installation of linear infrastructure 	<ul style="list-style-type: none"> Minimal impact on road access and traffic during construction of tank as works will occur within greenspace behind residential dwellings Minor impact on roadway during installation of linear infrastructure 	<ul style="list-style-type: none"> Minimal impact on road access and traffic during construction of tank as works will occur within greenspace off of roadway Minor impact on roadway during installation of linear infrastructure
	Nuisance impacts	<ul style="list-style-type: none"> In the absence of storage tank construction, no nuisance impacts during construction 	<ul style="list-style-type: none"> Noise, dust and other nuisance impacts during construction can be mitigated through measures identified in design 	<ul style="list-style-type: none"> Noise, dust and other nuisance impacts during construction can be mitigated through measures identified in design 	<ul style="list-style-type: none"> Noise, dust and other nuisance impacts during construction can be mitigated through measures identified in design
Cultural Enviro	Disruption of built and cultural heritage features	<ul style="list-style-type: none"> No potential built heritage resources or cultural heritage landscapes will be impacted 	<ul style="list-style-type: none"> No potential built heritage resources or cultural heritage landscapes will be impacted 	<ul style="list-style-type: none"> No potential built heritage resources or cultural heritage landscapes will be impacted 	<ul style="list-style-type: none"> No potential built heritage resources or cultural heritage landscapes will be impacted
	Impacts on areas of archaeological potential	<ul style="list-style-type: none"> No archaeological resources will be impacted 	<ul style="list-style-type: none"> No archaeological resources will be impacted 	<ul style="list-style-type: none"> No archaeological resources will be impacted 	<ul style="list-style-type: none"> No archaeological resources will be impacted
Economic	Construction capital costs	<ul style="list-style-type: none"> No capital cost in the absence of storage tank construction 	<ul style="list-style-type: none"> Higher capital cost due to additional cost of valves, level sensors, etc. required to facilitate overflow, as passive overflow is not feasible 	<ul style="list-style-type: none"> Higher capital cost due to additional lengths of linear infrastructure required and additional security measures that 	<ul style="list-style-type: none"> High capital cost

CRITERIA		Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
			due to conflicts with major storm sewer (1200mm diameter)	will be required to be installed	
	Region's operating and maintenance costs	<ul style="list-style-type: none"> No operating and maintenance costs of storage facility; however, additional operating costs of Lakelands WWPS in emergency events 	<ul style="list-style-type: none"> Storage tank will require cleaning after use Requires regular inspection and maintenance Additional operation and maintenance required for valving and level sensors in overflow MH 	<ul style="list-style-type: none"> Storage tank will require cleaning after use Requires regular inspection and maintenance 	<ul style="list-style-type: none"> Storage tank will require cleaning after use Requires regular inspection and maintenance
	Land acquisition and/or easement requirements	<ul style="list-style-type: none"> No land acquisition or easements required 	<ul style="list-style-type: none"> Working and permanent easements will be required from City of Brampton 	<ul style="list-style-type: none"> Working and permanent easements will be required from City of Brampton 	<ul style="list-style-type: none"> Working and permanent easements will be required from City of Brampton
SUMMARY					
Technical Environment	<ul style="list-style-type: none"> Does not address Study problem or Region's design and operation standards 	<ul style="list-style-type: none"> Addresses Study problem with constructability concerns related to conflict of proposed overflow piping and existing 1200mm diameter storm sewer on Southlake Boulevard 	<ul style="list-style-type: none"> Significant constructability concerns related to accessibility as well as operation and maintenance concerns with accessibility, security and safety 	<ul style="list-style-type: none"> Addresses Study problem with constructability concerns which can be mitigated 	
Natural Environment	<ul style="list-style-type: none"> No construction impacts 	<ul style="list-style-type: none"> Fewer construction impacts 	<ul style="list-style-type: none"> Construction impacts with removal of vegetation and trees 	<ul style="list-style-type: none"> Fewer construction impacts 	
Social Environment	<ul style="list-style-type: none"> Greater risk of basement flooding within the neighbourhood in 	<ul style="list-style-type: none"> Impacted greenspace is not passive parkland planned for future 	<ul style="list-style-type: none"> Impacted greenspace is not passive parkland viable for future 	<ul style="list-style-type: none"> Impacted greenspace is passive parkland that is candidate for future 	

CRITERIA	Alternative 1 Do Nothing	Alternative 2 Storage Tank Location 1, Northern Portion of Lakelands Village Park	Alternative 3 Storage Tank Location 2, Southeastern Portion of Lakelands Village Park	Alternative 4 Storage Tank Location 3, Eastern Portion of Lakelands Village Park
	emergency event with no additional storage provided in the system	programming by City of Brampton <ul style="list-style-type: none"> • Closest proximity to residential homes 	programming by City of Brampton <ul style="list-style-type: none"> • Proximity to residential homes can be mitigated via design elements 	programming by City of Brampton <ul style="list-style-type: none"> • Proximity to residential homes can be mitigated via design elements
Cultural Environment	<ul style="list-style-type: none"> • No impact 	<ul style="list-style-type: none"> • No impact 	<ul style="list-style-type: none"> • No impact 	<ul style="list-style-type: none"> • No impact
Economic Environment	<ul style="list-style-type: none"> • Lowest cost 	<ul style="list-style-type: none"> • Higher capital cost with additional operation and maintenance required for valving and level sensors in overflow MH 	<ul style="list-style-type: none"> • Higher capital cost 	<ul style="list-style-type: none"> • High capital cost
OVERALL RANKING	<p>NOT RECOMMENDED</p> <ul style="list-style-type: none"> • No storage is provided to address emergency storage requirements and mitigate basement flooding 	<p>NOT RECOMMENDED</p> <ul style="list-style-type: none"> • Provides storage with constructability concerns related to conflict between proposed overflow piping and existing 1200mm diameter storm sewer; located in greenspace not planned for programming by City of Brampton 	<p>NOT RECOMMENDED</p> <ul style="list-style-type: none"> • Construction and permanent accessibility to site is challenging and site and staff security concerning due to visibility of site 	<p>RECOMMENDED</p> <ul style="list-style-type: none"> • Provides storage with constructability concerns which can be mitigated but located in parklands viable for future programming by City of Brampton

5.2.3 Preferred Solution

Based on the evaluation completed and summarized in Table 5-3, *Alternative 4: Storage Tank Location 3 – Eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection* is identified as the recommended preferred solution for the location of the new offline storage facility for the Lakelands WWPS. While this Location has greater impact on the City of Brampton's greenspace surrounding the Lakelands Village Park as it will impact the passive use area next to the Lakelands playground, these impacts are mostly temporary, with permanent impacts being mitigated with the final siting of the facility as close to the SWM pond and Deep Sea Drive right-of-way as feasible. Locations 1 and 2 have significant constructability concerns including conflict with major storm infrastructure (1200mm diameter) and inability to provide passive overflow, and accessibility during construction and operation and maintenance of the facility, respectively.

6 CONSULTATION AND COMMUNICATIONS

Public and stakeholder consultation is a key feature of the MCEA process. Through an effective consultation program, the proponent can generate meaningful dialogue between the project planners and the public, property owners, Indigenous communities, authorities, and government agencies allowing an exchange of ideas and the broadening of the information base, leading to better decision-making.

6.1 Summary of Consultation Activities

Throughout the project, stakeholders, including the public and property owners, Indigenous communities, authorities, government agencies and utilities, were given a variety of opportunities to review and comment on the project process, key findings, proposed alternatives, and recommended solution. Numerous consultation activities were undertaken as part of the Study, including:

- Development of a stakeholder contact list, which was updated throughout the Study;
- Communication with Indigenous communities by mail and/or email;
- Development of a study page on Peel Region's website with Study updates and contact information (<https://peelregion.ca/construction/environmental-assessments/lakelands-wastewater-pumping-station-new-offline-storage-facility>);
- Project notices;
- An Online Public Information Centre (PIC);
- Consultation with key stakeholders; and
- Public release of this Project File Report.

6.2 Project Notices

6.2.1 Notice of Study Commencement

The Notice of Study Commencement was prepared and issued on November 30, 2023. The Notice was posted on Peel's website. Contact letters including the Notice were mailed/emailed directly to relevant stakeholders including Indigenous communities, regulatory agencies, and authorities. The Notice was mailed via Canada Post to all properties within the Study Area and published in the Brampton Guardian.

The purpose of the Notice was to introduce the project (purpose and objectives), outline the MCEA process, request public involvement and identify contact persons. Contact information for Peel's Project Manager was made available to the public to elicit any initial feedback on the project.

Several comments were received from interested parties following the distribution of the Notice (refer to Table 6-1). A summary list of the stakeholder register, Notice of Commencement published and circulated, and a sample copy of the cover letter sent to stakeholders are provided in Appendix D. Received comments and study team responses are summarized in Table 6-1 and provided in Appendix E.

6.2.2 Notice of Online Public Information Centre (PIC)

A Notice of Online Public Information Centre (PIC) was prepared and issued on September 30, 2024. The Notice was posted on Peel's website. Contact letters including the Notice were mailed/emailed directly to relevant stakeholders

including Indigenous communities, regulatory agencies, and authorities. The Notice was mailed via Canada Post to all properties within the Study Area and published in the Brampton Guardian.

The Notice provided a description of the project, details of the Online PIC, and included a request for comments and input. Contact information for Peel's Project Manager was made available to the public to encourage the submission of comments.

The Notice of Online PIC published and circulated, and a sample copy of the cover letter sent to stakeholders are provided in Appendix D.

6.2.3 Notice of Completion

The Notice of Study Completion was prepared and issued on March 3, 2025. The Notice was posted on Peel's website. Contact letters including the Notice were mailed/emailed directly to relevant stakeholders including Indigenous communities, regulatory agencies, and authorities. The Notice was mailed via Canada Post to all properties within the Study Area and published in the Brampton Guardian.

The Notice informs the public and stakeholders of the completion of the MCEA and provides the locations where interested parties can review the completed Project File Report (PFR). The notice also informs the public of the 30-day review period associated with the conclusion of the MCEA process.

Subject to comments received as a result of the Notice and the receipt of all necessary approvals, Peel intends to proceed with the implementation as documented in this PFR.

The Notice of Completion published and mailed to all residents/property owners, and a sample copy of the cover letter sent to stakeholders are provided in Appendix D.

6.3 Public Engagement

The main opportunities for consultation during Phases 1 and 2 of the Study process included:

- Online Public Information Centre (PIC);
- Release of information on project website; and
- Distribution of notices, letters, and emails at key milestones.

Comments received from the public were compiled and considered in the completion of the Study. Comments received and study team responses are summarized in Table 6-1 and provided in Appendix E.

6.3.1 Online Public Information Centre (PIC)

An online PIC took place between October 14 and October 28, 2024, with material uploaded to Peel's website <https://peelregion.ca/construction/environmental-assessments/lakelands-wastewater-pumping-station-new-offline-storage-facility>. The online PIC consisted of display material, transcript, and recorded presentation being provided for a period of two (2) weeks. During the two (2) week review period, members of the public and stakeholders could view the study material and submit questions and comments to the study team via direct email to Peel's Project Manager.

The online PIC presented the following elements:

- Purpose of the Study and PIC;
- Information on the MCEA process;
- Project Background;
- Problem/Opportunity being considered for the Study;
- Description of the existing conditions;
- Description of alternative solutions;
- Evaluation criteria and process;
- Recommended preferred solution; and mitigation measures; and
- Next steps in the MCEA process.

A copy of the online PIC material is provided in Appendix F.

Received comments during the comment period are summarized in Table 6-1 and provided in Appendix E.

6.3.2 Comment Summary

Received comments and study team responses during the course of the Study are summarized in Table 6-1 and provided in Appendix E.

Table 6-1: Comment Summary for Study

Public/ Stakeholder Group	Comment/Question	Study Team Response
Liam Smythe – Ministry of Citizenship and Multiculturalism	Provided acknowledgement of study and information regarding archaeological and heritage requirements	Noted; ongoing communication and sharing of necessary documents with Ministry throughout study
Chunmei Liu, Regional Environmental Planner – MECP	Provided acknowledgement letter and supporting documents	Noted and considered during study
Tom Tran – Brampton Heritage	No comments on provided Heritage Report; inquired on Stage 1 Archaeological Assessment Report	Provided copies of Heritage Report and Stage 1 Archaeological Assessment report for consideration
Karla Barboza - Ministry of Citizenship and Multiculturalism	Confirmed receipt of Heritage Report	Noted
Liam Smythe – Ministry of Citizenship and Multiculturalism	Reviewed Heritage Report and provided comments	Reviewed report – no comments to address
Jaskiran Bajwa – City of Brampton	Reviewed Technical Memo #2 with alternatives and evaluation and confirmed acceptance of Location 3; provided conditions/requirements	Conditions and requirements noted; will be addressed during design.

Public/ Stakeholder Group	Comment/Question	Study Team Response
	to follow for ultimate City approval during design	
Shirin Varzgani – TRCA	Provided response letter noting project is not within TRCA regulated limits so require no further consultation; remove from contact list	Noted and updated contact list
Trevor Bell, Regional Environmental Planner – MECP	Reviewed draft Project File Report and provided several comments	Updated Project File Report based on received comments

6.4 Stakeholder Consultation

The key stakeholder group identified for this Study was City of Brampton. The City was notified of the Study and provided the opportunity to give feedback and input on the existing issues in the study area, study alternatives and evaluation process.

6.4.1 City of Brampton

Consultation with the City of Brampton occurred at various points during the Study, including:

- At project initiation with the Notice of Commencement;
- At a study review meeting on March 18, 2024, to review study information, alternatives and evaluation process; and
- At project completion with the Notice of Completion and review of the Project File Report.

Following the March 18th meeting, the City confirmed approval of the preferred location of the facility and provided several conditions and requirements that will need to be incorporated into the final design and during construction. These requirements have been incorporated into the detailed design commitments in Section 7.5. Continued communication between Peel Region and the City of Brampton in detailed design and construction will be necessary. The design of the facility will incorporate the City's feedback on aesthetics and operation, ensuring it cohesively integrates with the park.

Meeting minutes and correspondence from the City consultation are provided in Appendix E.

6.5 Consultation with the Ministry of the Environment, Conservation and Parks

An acknowledgement letter was provided from the MECP in response to the Notice of Commencement provided to the MECP Central Region. Several areas of interest were provided for consideration and have been included in this Project File Report. The draft Project File Report was circulated to the MECP for review and comment prior to finalizing the MCEA Study.

MECP correspondence is provided in Appendix E.

6.6 Indigenous Communities Consultation

As required as part of the MCEA process, to satisfy the Crown's legal duty to consult Aboriginal communities, Indigenous communities were contacted at project initiation with the Notice of Commencement. As per the acknowledgement letter provided by the MECP, Indigenous Communities contacted included Mississauga of the Credit First Nation (MCFN), Six Nations of the Grand River Territory (SNGR), both the elected council and Haudenosaunee Confederacy Chiefs Council (HCCC) represented by Haudenosaunee Development Institute (HDI), and Huron-Wendat. Additional Indigenous Communities contacted included Metis Nation of Ontario and Hiawatha First Nation. Table 6-2 provides a summary of consultation with Indigenous Communities for the Study.

Table 6-2: Indigenous Communities Consultation Summary

Indigenous Community	Comment/Question	Study Team Response
Huron-Wendat – Dominic Ste Marie	Acknowledged and asked to be kept updated on Study and Stage 1 Archaeological Assessment results; reviewed and confirmed no comments on Stage 1 Archaeological Assessment Report	Sent Stage 1 Archaeological Assessment Report asking for review and comment; no comments received
Hiawatha First Nation – Sean Davison	Study is outside of Williams Treaty Settlement Area – Hiawatha will not focus efforts outside of treaty area	Noted; contact list updated
HDI – Rae Lumsdon	Confirmed receipt of Notice of Online Public Information Centre; will review and reach out to schedule a meeting; requested PFR to review	Confirmed receipt of email; Noted draft PFR will not be prepared until after PIC is completed and comment period closes; will circulate copy of the PFR for review and commenting once prepared
SNGR – Tanya Hill-Montour	Requested copy of the Stage 1 Archaeological Assessment Report; had questions regarding the Region's Land Acknowledgement and provided some context	Stage 1 Archaeological Assessment Report was provided for review; apologized for mistakes in Land Acknowledgement and noted Peel will review and update.
Huron-Wendat – Benjamin Labbe	Huron-Wendat is interested in reviewing Stage 1 Archaeological Assessment Report	Noted that report was previously shared with Community in February 2024

Correspondence with Indigenous Communities did not lead to the identification of any specific or comprehensive claims or litigation that materially affected the project. The identified communities will be notified of the PFR release, and Peel is committed to working with Indigenous Communities should any issues arise. Continued communication with the identified communities will occur during detailed design and into implementation as required.

All correspondence to the Indigenous communities along with communication log are provided in Appendix G.

7 IMPLEMENTATION OF THE PREFERRED SOLUTION

Based on the feedback received during the Online PIC and from stakeholder groups, the recommended preferred solution was confirmed and will be progressed to detailed design and construction. This section provides a summary of the key design features and considerations of the preferred solution.

7.1 Design Features of Preferred Solution

The preferred solution is to install a new offline storage facility at Location 3, the eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection (Figure 7-1). The new offline storage facility will include the following:

- Provision of 2-hour emergency storage at the peak flow of 72 L/s constructed below the basement flooding elevation (232.5m);
- Underground concrete storage tank with proposed volume of approximately 500m³, with an approximate structure size of 20m long by 10m wide by 7.8m deep;
- An emergency overflow pipe will be constructed from an existing maintenance hole (MH59A) in the existing gravity sewer collection system which will ultimately overflow into the new offline storage facility;
- A pumping station would be incorporated into the storage facility so that after the emergency event has ended, wastewater can be pumped back into the wastewater collection system via return forcemain;
- Storage tank will have tipping buckets for flushing once the emergency event has ended;
- A superstructure will be constructed on top of the tank to house control instruments and access stairs into the tank; and
- A deep shoring system such as secant pile wall is likely expected for the deep excavation of the tank.

In addition to the new offline storage facility construction, various upgrades at the Lakelands WWPS will occur to address deficiencies and increase the firm capacity of the station.

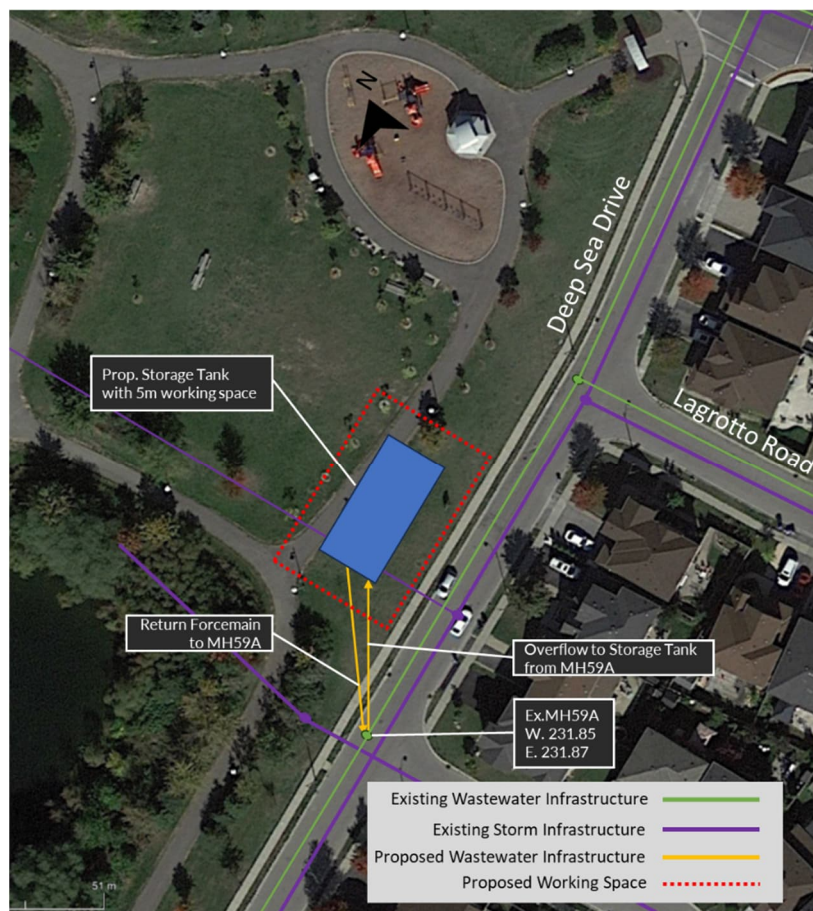


Figure 7-1: Preferred Solution Layout

Conceptual design drawings of the preferred solution, including the layout of the offline storage facility, are provided in Appendix H.

7.2 Property Requirements

The construction of the offline storage facility will require land acquisition for both temporary and permanent easements from the City of Brampton within the Lakelands Village Park. Further coordination with the City during design will be required to secure all necessary easements.

Final easement location and size will be identified during detailed design and secured with the City.

7.3 Approval Requirements

Table 7-1 below summarizes anticipated approval and permitting requirements prior to implementation of the proposed works.

Table 7-1: Approval Requirements

Agency	Approval Mechanism	Details
City of Brampton	Road Occupancy Permit	<ul style="list-style-type: none"> Facilitate construction on local roads
City of Brampton	Site Plan Approval and Minor Variance Adjustment	<ul style="list-style-type: none"> Facilitate construction within City owned lands
City of Brampton	Building Permit	<ul style="list-style-type: none"> Construction of new facility within City of Brampton
Electrical Safety Authority (ESA)	ESA Certificate of Approval	<ul style="list-style-type: none"> Construction of new facility and associated electrical works (to be secured by Contractor)
Peel Region	Public Utility Coordinating Committee (PUCC)	<ul style="list-style-type: none"> Utility impacts associated with construction

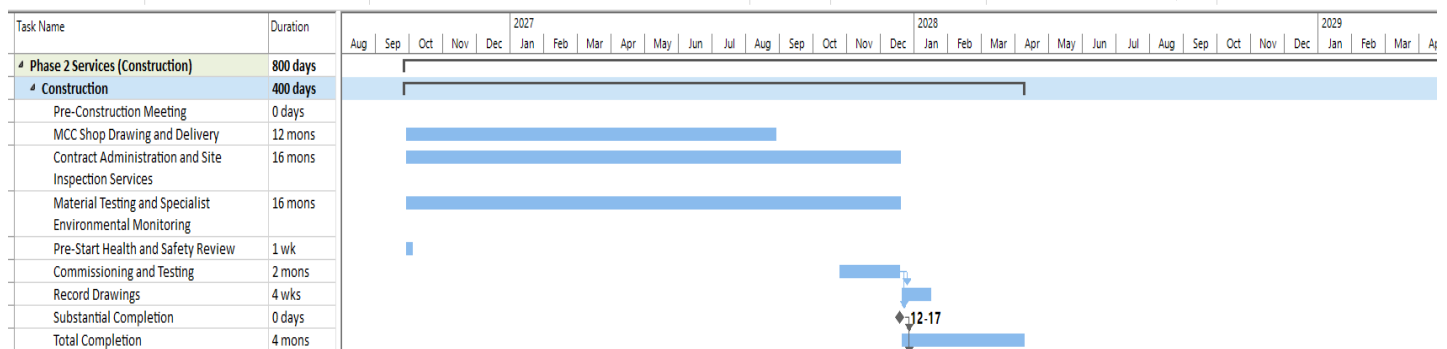
7.4 Proposed Construction Schedule and Cost Estimate

Upon completion of the MCEA study, the following schedule has been tentatively identified:

- Detailed design – 2025 to 2026
- Property Acquisition and Permitting/Approvals – Early Spring 2025 to Spring 2026
- Project Tendering – Spring 2026
- Construction – Fall 2026 to Spring 2028

The upgrades to the Lakelands WWPS and the construction of the Offline Storage Facility are estimated to require approximately a 14 to 16 month construction phase as noted in Figure 7-2.

Figure 7-2: Proposed Construction Phase



The preliminary opinion of probable construction capital cost (-15%/+30%) for the preferred solution is estimated to be approximately \$8.2 million. This estimate includes major infrastructure works; however, excludes property acquisition. See Appendix I for details on the preliminary cost estimate.

7.5 Detailed Design Commitments and Considerations

This section provides a list of specific commitments to be carried forward into Phase 5 of the MCEA process – Implementation Phase (i.e. completion of contract drawings and tender documents, construction and operation and the monitoring for environmental provisions and commitments). Additional works to be completed during the detail design phase of this project, prior to construction, include but are not limited to, the following:

- Confirm design criteria for offline storage facility;
- Complete further geotechnical investigation to assess soil conditions and develop an excess soils management plan;
- Complete hydrogeological assessment to confirm groundwater conditions and need for dewatering permitting. Self-registration on the Environmental Activity Sector Registry of Ontario would be required for construction dewatering between 50,000-400,000 litres per day;
- Develop and implement Erosion and Sediment Control Plan to minimize risk of sediment transport into adjacent pond;
- Confirm preferred construction methodologies to be utilized;
- Continue to engage with interested Indigenous Communities throughout design, as necessary;
- Complete Arborist Report to support development of a Tree Inventory and Removal Plan;
- Continue coordination with the City of Brampton to finalize property acquisition or easement agreements, and ensure alignment on design elements that may impact surrounding areas (e.g., access points, pathway works, aesthetics);
- Identify and secure all necessary permits and approvals from relevant regulatory agencies to facilitate construction and establish a clear timeline for obtaining them before construction activity begins;
- Utilize SUE services to map all existing underground utilities within the Study area;
- Confirm all utility infrastructure and identify potential conflicts and need for relocations, if required; and
- Finalize capital construction cost estimates of proposed works.

8 POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

This section describes the potential effects on the environment as a result of the undertaking and the mitigation measures and commitments made to either minimize or offset these effects. Mitigation of potential effects was considered throughout the MCEA process; however, despite efforts to reduce effects, not all can be avoided. It is expected that the recommended mitigation measures will be further refined during detailed design of the project.

8.1 Private Property and Adjacent Land Use

During construction there will be some nuisance effects, such as noise, odour and dust. As well, construction access and construction activities will be required on property owned by the City of Brampton. During detailed design, the City and Peel will discuss potential construction impacts and mitigation measures necessary. Peel will secure permanent and/or temporary easements to facilitate construction of the offline storage facility. Impacts to the City's property will be minimized with all restoration requirements agreed upon with the City and included in the contract package.

8.2 Natural Environment

During the design phase mitigation measures are to be detailed and coordinated with the design of the proposed works. These measures will include standard mitigation, as well as site-specific measures. Specific mitigation measures applicable to the environmental conditions of the preferred solution will be finalized during the detailed design stage. The following general mitigation and enhancement measures are recommended for consideration through subsequent detailed design phases:

- Vegetation clearing (including tree removals, if required) should not occur between April 1 to August 31, to avoid the breeding bird season, complying with the Migratory Birds Convention Act. In the event that tree removal must occur within the breeding bird window a qualified biologist must screen the area. Clearing in identified nesting areas would be prohibited until such time that it has been confirmed that the young have fledged.
- To minimize the potential for erosion and off-site transport of sediment into surface water features and the natural environment, the project will implement Best Practices related to erosion and sediment control (ESC). ESC measures used by the contractor on all construction should meet guidelines as outlined in the Erosion and Sediment Control Guide for Urban Construction, December 2006 (ESC Guideline) (Toronto and Region Conservation Authority, 2019).
- Environmental protection, specifically ESC fencing, will be installed along the limits of the reconstruction.
- All ESC measures will be inspected for placement and installation prior to commencement of any construction activities.
- Where feasible and necessary, trees proposed to be retained will be protected by tree protection fencing (TPF), which is to be placed at the dripline or in a location to minimize encroachment into the root zone and protect the trunk. Fencing provides protection from potential damage during construction activities such as the use of machinery near trees and branches and stockpiling of materials over the root zone. ESC fencing can be combined with TPF.
- In the unlikely event that SAR are encountered, work will stop and the MECP will be contacted for direction.
- All activities, including the maintenance of construction machinery, should be controlled to prevent the entry of petroleum products, debris, rubble, concrete or other deleterious substances into the natural environment. Refueling should not occur within 30 m of the ponds.

- Construction practices to control the spread of invasive species will be implemented (Ontario Invasive Species Council, 2012).

8.2.1 Air Quality, Dust and Noise

Impacts of air quality during project construction are not considered to be significant. Although dust impacts from heavy construction equipment may impact air quality, this is not a recurring activity as it will be limited to the construction period. Contract provisions will minimize impacts to adjacent properties during construction. Therefore, the impacts from construction on air quality are not considered significant.

Provisions to minimize air quality impacts during construction include removal of construction-caused debris and dust through regular cleaning and maintenance of construction sites and access roads; dust suppression using non-chloride dust suppressants on unpaved areas, subject to the area being free of sensitive plant, water, or other ecosystems that may be affected by dust suppression chemicals; and prompt cleaning of paved streets/roads where tracking of soil, mud or dust has occurred.

There will be construction noise generated during the installation works due to the required use of heavy machinery and other construction equipment. Measures will be taken to manage construction noise including maintaining equipment to prevent unnecessary noise. Any initial noise complaint will trigger verification that noise control measures are in effect. If persistent noise complaints occur, alternative noise control measures will be considered. Mitigation measures to minimize the potential for construction noise impacts will be written into the contract documentation for the contractor and include:

- There should be explicit indication that Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws.
- All equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order.
- Monitor and maintain haul routes to minimize movement over rough ground and potholes which in turn can generate noise.
- All equipment shall be kept in good working order as deterioration may increase equipment sound levels. A documented, regular inspection and maintenance program must be implemented.
- Vehicle on-site speed limits must be met and will be enforced.
- Idling vehicles will be kept to a minimum.
- In the presence of persistent noise complaints, all construction equipment should be verified to comply with MOE NPC-115 guidelines.

8.2.2 Surface Water

During construction, there is a potential impact to surface water quality due to sedimentation and through the introduction of harmful substances to the storm collection system and/or stormwater management ponds. To mitigate this construction impact, an erosion and sediment control plan (ESCP) will be developed. This plan will include measures for managing fuel, excess materials, debris, and water flows into and out of the construction site(s) appropriately, and may include silt fencing, construction fencing, tree protection fencing, straw bales, mud mats, and refueling areas outside of 30m from ponds.

8.3 Socio-Economic and Cultural Environment

8.3.1 Utilities

During detailed design utility companies will be contacted and a SUE investigation will be completed to confirm the presence and location of existing infrastructure within the study area. It is not anticipated that the proposed works will significantly impact any utility locations. All existing utilities located within the study area will require protection during construction to ensure the infrastructure is not damaged by construction works.

8.3.2 Archaeological Potential

Based on the Stage 1 Archaeological Assessment, implementation of the preferred solution should not impact areas identified having archaeological potential. During construction, in the event that archaeological resources or remains are found, alteration of the site must cease immediately, and a licenced consultant archaeologist must be notified to carry out archaeological fieldwork, in compliance with sec. 48(1) of the Ontario Heritage Act.

More information is provided in the completed Stage 1 Archaeological Assessment report in Appendix B.

8.4 Climate Change Considerations

Climate change is an issue that has and continues to evolve on a global scale. Governments at all levels are acknowledging the need to take actions that reduce greenhouse gas (GHG) emissions into the atmosphere to mitigate the effects of climate change. There is also a recognition that climate change is impacting community infrastructure systems. This requires a consideration of adaption measures to mitigate the impact of climate change on levels of service these systems were originally designed to deliver.

Project impacts and resiliency to climate change were taken into consideration during the study. Considering how a project contributes to climate change, through its greenhouse gas emissions or its effects on the natural environment, is important to the planning process as it allows proponents to consider climate mitigation measures to avoid, minimize, or offset such effects. As well, considering how climate change may affect a project, such as through increased flooding or drought, is also critical to the planning process through enabling proponents to make informed decisions around how to design a project to withstand such environmental conditions. Approaches for considering and addressing climate change in project planning are through 1) Reducing a project's effect on climate change; and 2) Increasing the project's resilience to climate change.

Upon review of this Study's undertaking, it is determined that the project is minor in scale and will not have significant climate change impact. However, key elements that were/will be factored into the new offline storage facility that could serve to reduce the overall effect on climate change include GHG reduction initiatives including reduced use of GHG producing materials, specifying local materials to reduce related fuel consumption, and inclusion of recycled materials, where feasible. Furthermore, the offline storage facility will be designed and constructed to Peel's design and construction specifications which consider climate change impacts with respect to operations and construction.

8.5 Construction Considerations

In summary, the following potential environmental and construction impacts may occur during the construction phase. As such, the following measures detailed in Table 8-1 are proposed to mitigate any adverse impacts.

Table 8-1: Construction Considerations

Construction Impacts	Proposed Mitigation Measures
Traffic Delays within local streets due to construction vehicles and necessary connection works	<ul style="list-style-type: none"> • Prepare construction phasing plan/detour plan and review with City of Brampton; secure Road Occupancy Permit
Air quality impacts from construction equipment	<ul style="list-style-type: none"> • Develop a dust control plan, use water, and dust suppressants during construction, keep idling of construction equipment to a minimum, address and monitor air quality complaints
Noise disturbance to adjacent land uses	<ul style="list-style-type: none"> • Develop a noise control plan, construction must conform to Municipal Noise By-Laws, keep idling of equipment to a minimum, address and monitor noise complaints
Impacts to surface water quality due to sedimentation and introduction of deleterious substances to storm collection system/natural environment	<ul style="list-style-type: none"> • Develop an Erosion and Sediment Control Plan (ESCP), include measures for managing water flows into and out of the site, manage fuel, excess materials, and debris appropriately (ie: silt fence, construction fencing, straw bales, mud mats, etc)
Restricted access to public park area	<ul style="list-style-type: none"> • Erect construction fencing to delineate work area from public space; coordinate with City of Brampton on phasing and construction details; restore area to existing or better conditions

8.6 Monitoring and Maintenance

The mitigation measures identified in this report shall be written into the contract specifications. During construction, Peel's contract administrator shall ensure that full-time monitoring/inspection of the project works be undertaken to ensure that all environmental commitments identified in this report are adhered to by the Contractor(s) and other subsequent agency approvals are met. After a period of one year following completion of the construction (i.e. post construction), a final inspection should be undertaken to ensure the effectiveness of the identified mitigation measures.

Recommended effects monitoring during the construction period includes:

- Monitoring of traffic flow within Lakelands neighbourhood to ensure the minimization of delays;
- Minimize construction area within park area to extent possible;
- Public complaints monitoring and follow-up regarding construction disturbances;
- Monitoring of vegetation and tree removal; and

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- Monitoring of the effectiveness of stormwater controls to ensure erosion and sedimentation effects are minimized.

9 CONCLUSIONS AND RECOMMENDATIONS

This study was carried out as a Schedule B project under the Municipal Class Environmental Assessment (MCEA) for Municipal Water and Wastewater Projects and is subject to the requirements of the *Environmental Assessment Act*. This document provides relevant information with respect to Phases I and II of the Environmental Assessment Process. Subsequent phases of the process will involve completion of contract drawings and documents for all proposed works together with appropriate monitoring requirements.

9.1 Conclusions

The Lakelands WWPS is located at 26 Stony Lake Avenue, in the City of Brampton, within the Lakelands Village residential development. The WWPS was constructed in 2004. The wastewater generated in the residential development flows to the Lakelands WWPS through a series of gravity sewers. The current firm capacity of the WWPS is 64.0 L/s as indicated by the Certificate of Approval (CofA), with an expected buildout capacity of 72.0 L/s.

Upgrades are being undertaken at the Lakelands WWPS to ensure the station meets current Peel design standards, increase its firm peak flow capacity through various site works and the addition of an offline 2-hour emergency storage facility. From previously completed assessments (Associated, 2019) various inline and offline emergency storage options were considered, with the ultimate recommendation of proceeding with a 2-hour offline storage facility accepted by Peel.

A new offline storage facility will require property acquisition by Peel. Therefore, the purpose of this Study was to develop and evaluate potential offline locations within the vicinity of the WWPS for the placement of the new offline storage facility considering technical constraints, the existing environment as well as stakeholder input in accordance with the MEA MCEA guidelines.

The preferred solution is to install a new offline storage facility at Location 3, the eastern portion of Lakelands Village Park, west of the Southlake Boulevard and Deep Sea Drive intersection. The new offline storage facility will include the following:

- Provision of 2-hour emergency storage at the peak flow of 72 L/s constructed below the basement flooding elevation (232.5m);
- Underground concrete storage tank with a proposed volume of approximately 500m³, with an approximate structure size of 20m long by 10m wide by 7.8m deep;
- An emergency overflow pipe will be constructed from an existing maintenance hole (MH59A) in the existing gravity sewer collection system which will ultimately overflow into the new offline storage facility;
- A pumping station would be incorporated into the storage facility so that after the emergency event has ended, wastewater can be pumped back into the wastewater collection system via the return forcemain;
- Storage tank will have tipping buckets for flushing once the emergency event has ended;
- A superstructure will be constructed on top of the tank to house control instruments and access stairs into the tank; and
- A deep shoring system such as secant pile wall is likely expected for the deep excavation of the tank.

Conceptual design of the new offline storage facility has been prepared (Appendix H). Following completion of the MCEA study, detailed design, permitting, land acquisition and construction will be undertaken to implement the preferred solution and remedy the identified problems.

9.2 Recommendations

During the MCEA study, recommendations for additional works and implementation measures were identified. These items should be taken into consideration during the detailed design and include, but are not limited to, the following items:

- Confirm design criteria for offline storage facility;
- Complete further geotechnical investigation to assess soil conditions and develop an excess soils management plan;
- Complete hydrogeological assessment to confirm groundwater conditions and need for dewatering permitting. Self-registration on the Environmental Activity Sector Registry of Ontario would be required for construction dewatering between 50,000-400,000 litres per day;
- Develop and implement Erosion and Sediment Control Plan to minimize risk of sediment transport into adjacent pond;
- Confirm preferred construction methodologies to be utilized;
- Continue to engage with interested Indigenous Communities throughout design, as necessary;
- Complete Arborist Report to support development of a Tree Inventory and Removal Plan;
- Continue coordination with the City of Brampton to finalize property acquisition or easement agreements, and ensure alignment on design elements that may impact surrounding areas (e.g., access points, pathway works, aesthetics);
- Identify and secure all necessary permits and approvals from relevant regulatory agencies to facilitate construction and establish a clear timeline for obtaining them before construction activity begins;
- Utilize SUE services to map all existing underground utilities within the Study area;
- Confirm all utility infrastructure and identify potential conflicts and need for relocations, if required; and
- Finalize capital construction cost estimates of proposed works.

Prior to construction, Peel will inform the public and adjacent landowners of the upcoming construction works including construction schedule, construction staging and implementation.

CLOSURE

This report was prepared for Peel Region to satisfy the requirements of the MCEA process and *Environmental Assessment Act* and to set the stage for the detailed design and construction of the Preferred Solution for the Study Area discussed herein.

The services provided by Associated Engineering (Ont.) Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,

Associated Engineering (Ont.) Ltd.

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APPENDIX A – NATURAL ENVIRONMENT ASSESSMENT REPORTS

APPENDIX B - ARCHAEOLOGICAL ASSESSMENT REPORTS

APPENDIX C - CULTURAL HERITAGE REPORT

APPENDIX D - STUDY NOTICES

APPENDIX E - PUBLIC AND STAKEHOLDER COMMENTS

APPENDIX F - PUBLIC INFORMATION CENTRE

APPENDIX G - INDIGENOUS CORRESPONDENCE

APPENDIX H – CONCEPTUAL DRAWINGS

APPENDIX I - COST ESTIMATE