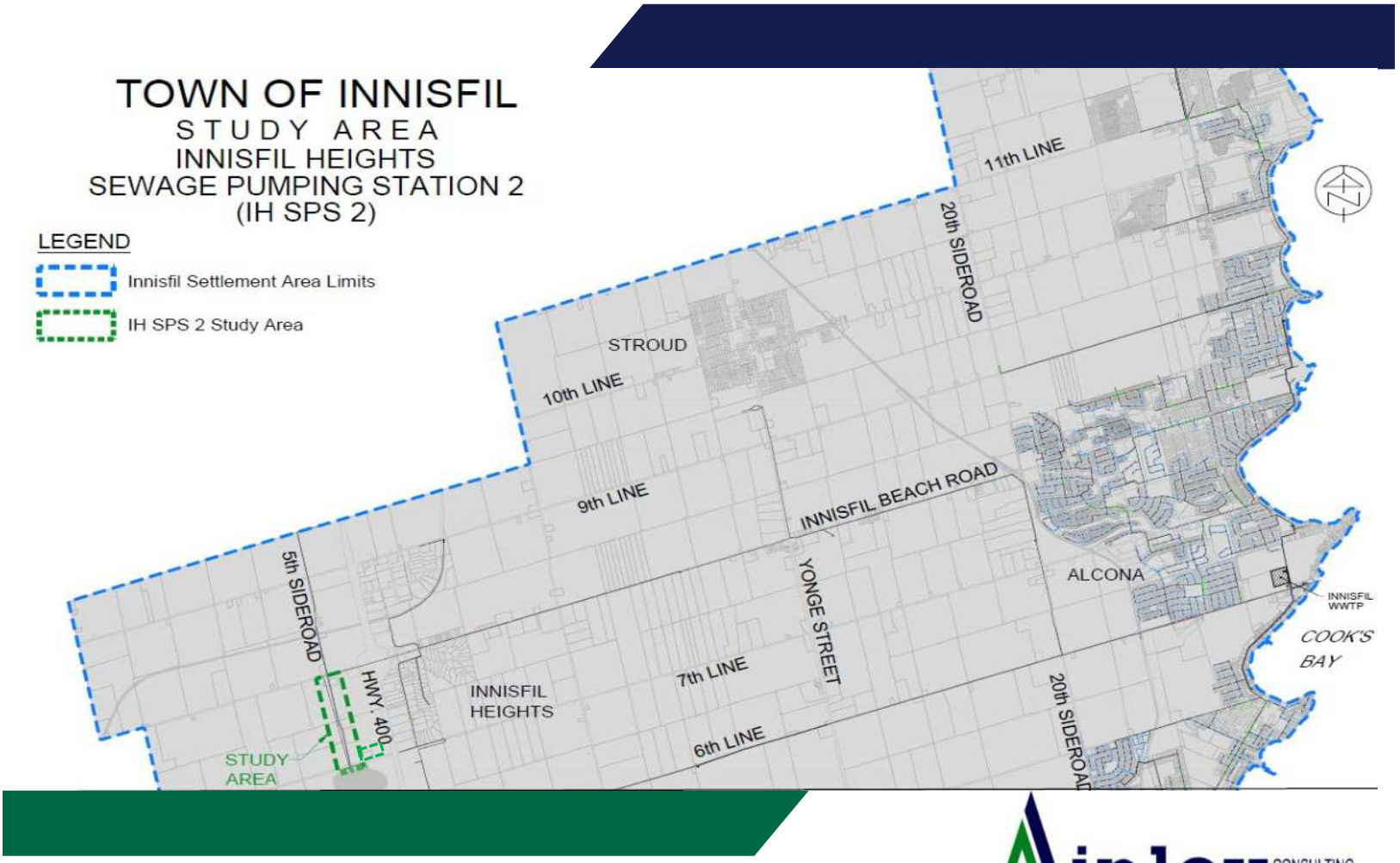
InnServices Utilities Inc.

Innisfil Heights Sewage Pumping Station 2

Schedule ‘B’ Municipal Class Environmental Assessment

PROJECT FILE REPORT



Ainley GROUP CONSULTING ENGINEERS PLANNERS

PREPARED FOR:

InnServices Utilities Inc.

SEPTEMBER 2025

PROJECT NO. 121031

280 Pretty River Pkwy, Collingwood, ON
L9Y 4J5
Tel.: (705) 445-3451
Email: collingwood@ainleygroup.com

WWW.AINLEYGROUP.COM

TABLE OF CONTENTS

1. BACKGROUND 1

1.1 Introduction 1

1.2 Class Environmental Assessment Process 3

1.3 Objective of this Report 5

1.4 Project Team 5

2. PLANNING POLICY AND THIS CLASS EA 5

2.1 Provincial Policy Statement (2024) 5

2.2 Places to Grow Act (2005) 6

2.3 Safe Drinking Water Act (2002) 6

2.4 Clean Water Act (2006) 6

2.5 Ontario Water Resources Act (1990) 6

2.6 Lake Simcoe Protection Act (2008) 6

2.7 Town of Innisfil Official Plan (2018) 7

2.8 Town of Innisfil Transportation Master Plan (2018) 7

2.9 Climate Change 7

3. EXISTING CONDITIONS 8

3.1 Study Area 8

3.2 Technical/Physical Environment 9

3.2.1 Existing Wastewater Flows 10

3.2.2 Existing Wastewater System 10

3.2.3 Projected Wastewater Flows 10

3.2.4 Geotechnical and Hydrogeological Conditions 11

3.3 Natural Environment 13

3.3.1 Vegetation and Vegetation Communities 13

3.3.2 Species at Risk 13

3.3.3 Watercourses and Fish Habitat 14

3.3.4 Ground water 14

3.4 Cultural Environment 16

3.4.1 Stage 1 Archaeological Study 16

3.4.2 Stage 1, 2 & 3 Archaeological Study 16

3.4.3 Built Heritage Resources and Cultural Heritage Landscapes 18
3.5 Climate Change 20
4. PHASE 1 – PROBLEM/OPPORTUNITY STATEMENT 20
5. PHASE 2 - PROPOSED ALTERNATIVE SOLUTIONS 20
5.1 Preliminary Screening Criteria 20
5.2 Preliminary Screening of Long List Alternative Solutions 21
5.3 Alternative Sites for the Shortlisted Solutions 21
6. Detailed Evaluation of Alternative Solutions 24
6.1 Evaluation Matrix 24
6.2 Detailed Evaluation Criteria 24
6.3 Evaluation Scoring 24
6.4 Evaluation Discussion 27
6.4.1 Technical/Physical Environment Evaluation 27
6.4.2 Natural Environment Evaluation 27
6.4.3 Cultural and Social Environment Evaluation 28
6.4.4 Economic Environment 29
7. CONSULTATION 29
7.1 Notice of Study Commencement 30
7.2 Notice of Public Information Centre 30
7.3 Notice of Completion 30
7.4 Consultation with First Nations 31
7.4.1 Consultation with Curve Lake First Nation 32
7.5 Consultation with Property Owner/Consulting Group 32
7.6 Summary of Comments 33
8. PREFFERED SOLUTION 38
8.1 Preferred Site Location 38
8.2 Proposed SPS Location 39
8.2.1 Environmental Constraints Analysis 40
8.2.2 Preliminary Site Layout 40
9. COST ESTIMATE 42
10. MITIGATION 42
10.1 Vegetation 42
10.2 Wetlands 43
10.3 Groundwater and Surface Water 43

10.4 Species at Risk 44
10.5 Specific Erosion and Sediment Control Measures (ESC) 44
10.6 Excess Materials Management 44
10.7 Archaeological Resources 45
10.8 Built Heritage Resources and Cultural Heritage Landscapes 45
10.9 Utilities and Servicing 46
10.10 Property Impacts 46
10.11 Climate Change 46
10.11.1 Potential Impact and Mitigation Based on Energy Efficiency 46
10.11.2 LEED Green Building Rating System 46
10.11.3 Envision Sustainable Rating System 46
10.11.4 Climate Change Impact and Mitigation 47
10.11.5 LID Stormwater Management Measures 47
11. PERMITS AND APPROVALS 47
***REFERENCES* 49**

LIST OF FIGURES

Figure 1 – Innisfil Heights Wastewater Servicing Alternative 6B 2
Figure 2 – Municipal Class Environmental Assessment Flow Chart 4
Figure 3 - IH SPS 2 Study Area 8
Figure 4 – Aerial Map of Study Area 9
Figure 5 – Surficial Geology Mapping 11
Figure 6 – Key Natural Heritage Features 15
Figure 7 – Stage 2 Results of Assessment 17
Figure 8 – Location of Identified CHLs in the study Area 19
Figure 9 – Preliminary Alternatives 23
Figure 10 – Evaluation Matrix (Visual Comparison) 24
Figure 11 – Alternative 2D Location and Approximate SPS Footprint 39
Figure 12 – Preliminary Layout of the SPS 41

LIST OF TABLES

Table 1 – Flow Projection Summary to IH SPS 2 10

Table 2 – Ability of Alternatives to Meet Preliminary Screening Criteria 21
Table 3 – Evaluation Matrix for Six Alternative 25
Table 4 – Comment Summary Table 34

APPENDICES

Appendix A ..... IH SPS 2 Future Flow Technical Memorandum
Appendix B ..... Geotechnical and Hydrogeological Background Conditions Report
Appendix C ..... Environmental Constraints Analysis of Natural Heritage Features
Appendix D ..... Scoped Environmental Impact Study Report
Appendix E ..... Stage 1 Archaeological Assessment Report
Appendix F ..... Archaeological Assessment Report
Appendix G ..... Cultural Heritage Report: Existing Condition and Preliminary Impact Assessment
Appendix H ..... Notice of Study Commencement
Appendix I ..... Notice of Public Information Centre
Appendix J ..... Public Information Centre Presentation Material
Appendix K ..... Notice of Completion
Appendix L ..... Consultation Records

GLOSSARY OF TERMS

Ainley	Primary engineering consultant for the Class EA process.
Alternative	A possible approach to fulfilling the goal and objective of the study or a component of the study.
Class EA	Municipal Class Environmental Assessment, a planning process approved under the EA Act in Ontario for a class or group of municipal undertakings. The process must meet the requirements outlined in the "Municipal Class Environmental Assessment" document (Municipal Engineers Association, October 2000, as amended). The Class EA process involves evaluating the environmental effects of alternative solutions and design concepts to achieve a project objective and goal and includes mandatory requirements for public consultation.
Design Concept	A method of implementing an alternative solution(s).
Dewatering	Removal of water from an area under consideration, usually for construction purposes, or to avoid potential contamination.
EA Act	*Environmental Assessment Act*, R.S.O. 1990, c.E.18 (Ontario)
Effluent	Liquid after treatment. Effluent refers to the liquid discharged from a Waste Water Treatment Plant to a receiving water.
EIA	Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account interrelated socio-economic, cultural and human-health impacts, both beneficial and adverse.
Evaluation Criteria	Criteria applied to assist in identifying the preferred solution(s).
Forcemain	A pressurized pipe used to convey pumped wastewater from a sewage pumping station.
Geotechnical Investigation	Study of the engineering behavior of earth materials such as soil properties, rock characteristics, natural slopes, earthworks and foundations, within the study area
Gravity Sewer	A pipe that relies on gravity to convey sewage.
Hydrogeological	Study of the distribution and movement of groundwater in soil or bedrock.
Infiltration/Inflow (I&I)	Rainwater and groundwater that enters a sanitary sewer during wet weather events or due to leakages, etc.
Intensification	A process of development within existing urban areas that are already largely developed. Refers specifically to the redevelopment of lots to increase occupancy.
Local Conservation Authority	A conservation authority is a local, community-based natural resource management agency based in Ontario. Conservation authorities are mandated to develop programs to further the conservation, restoration, development and management of Ontario's natural resources.
LSRCA	Lake Simcoe and Region Conservation Authority
Master Servicing Plan (MSP)	A comprehensive plan to guide long-term development in a particular area that is broad in scope. It focuses on the analysis of a system for the purpose of outlining a framework for use in future individual projects.
MECP	Ministry of the Environment, Conservation and Parks, the provincial agency responsible for water, wastewater and waste

	regulation and approvals, and environmental assessments in Ontario.
Official Plan (OP)	An official plan describes upper, lower or single–tier municipal council's policies on how land in a community should be used. It is prepared with input from members in a community and helps to ensure that future planning and development will meet the specific needs of the community.
Preferred Solution	The alternative solution which is the recommended course of action to meet the objective statement based on its performance under the selection criteria.
ROW	Right-of-way applies to lands which have an access right for highways, roads, railways or utilities, such as wastewater conveyance pipes.
Sanitary Sewer	Sewer pipe that conveys sewage to a sewage pumping station or sewage treatment plant. Part of the sewage collection system.
Sanitary Sewer Collection System	The system consists of gravity pipes, manholes, tanks, lift stations, control structures, and forcemains. It is designed to collect wastewater from both residential and non-residential areas and transport the flow to the wastewater treatment plant.
Service Area	The defined area that will receive sewage servicing.
Sewage	The liquid waste products of domestic, industrial, and manufacturing activities directed to the sanitary sewage collection system.
Sewage Pumping Station (SPS)	A facility containing pumps to convey sewage through a forcemain to a higher elevation.
Water Pollution Control Plant (WPCP)	A plant that treats wastewater to remove solids, contaminants and other undesirable materials before discharging the treated effluent back to the environment.
Study Area	The area under investigation in which construction may take place in order to provide servicing to the Service Area.
Surficial Geology	Surficial geology refers to the study of landforms and the unconsolidated sediments that lie beneath them.
Threatened Species	A species likely to become endangered in Canada if the factors affecting its vulnerability are not reversed.
Trenchless technology	Methods of installing a utility, such as a sewer, without excavating a trench, including directional drilling, microtunneling etc.
Wastewater	See Sewage
Wet Well	The tank of a sewage pumping station where wastewater is collected before pumping.

1. BACKGROUND

1.1 Introduction

InnServices Utilities Inc. completed the *Innisfil Master Servicing Plan Update* (MSP Update) in 2018 which identified short- and long-term strategies for both water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018) and Official Plan Amendment No. 1. The MSP Update meets the goal to protect the environment and public health. It considers aligned infrastructure projects within the 2018 Transportation Master Plan (TMP) to minimize or avoid potential disruptions to residents. Major rehabilitation and optimization projects are also taken into account in the MSP Update to extend the servicing life of the existing infrastructure.

As part of the MSP Update various alternatives were examined in order to provide servicing to the first phase of the expansion plan of the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. In order to promote, facilitate and maximize the planned expansion of this area, the MSP Update identified that a municipal sanitary sewage collection system is required and the preferred solution to be 'Alternative 6B'. The MSP Update identified "Alternative 6, Option B' as the preferred option (Figure 1). The existing Lakeshore wastewater system servicing Alcona and the surrounding area consists of a network of sanitary sewers, seven sewage pumping stations, and the Lakeshore Water Pollution Control Plant (WPCP). Alternative 6B establishes a sanitary collection system connected to the existing Lakeshore wastewater system via Innisfil Beach Road for the first phase of development, projected up to the year 2031. As part of this alternative, several sewage pumping stations were proposed along the sewer route, including the new Innisfil Heights Sewage Pumping Station 2 (IH SPS 2).

The MSP Update recommended construction of five new sewage pumping stations (SPS) to service the Innisfil Heights economic district. Each proposed SPS requires a Schedule B Municipal Class Environmental Assessments (MCEA) prior to its construction. The MSP Update categorized the proposed SPS projects by suggested implementation timeline (i.e., within short-term 2019 -2023, mid-term 2024 -2031, and long-term post 2031) and identified the expected triggers for their implementation.

Under Section 18.4 of the MSP Update, Recommended Wastewater MSP, the IH SPS 2 and forcemain was suggested for implementation under the short-term timeline. The 'trigger' to initiate planning is the proposed new developments in Innisfil Heights, which would require infrastructure to convey wastewater flows.

This Class EA focuses on the proposed new IH SPS 2 to be located on 5th Sideroad in the Town of Innisfil. The sewage pumping station will receive flows from the Innisfil Heights economic area and direct it to the Lakeshore Water Pollution Control Plant (WPCP).

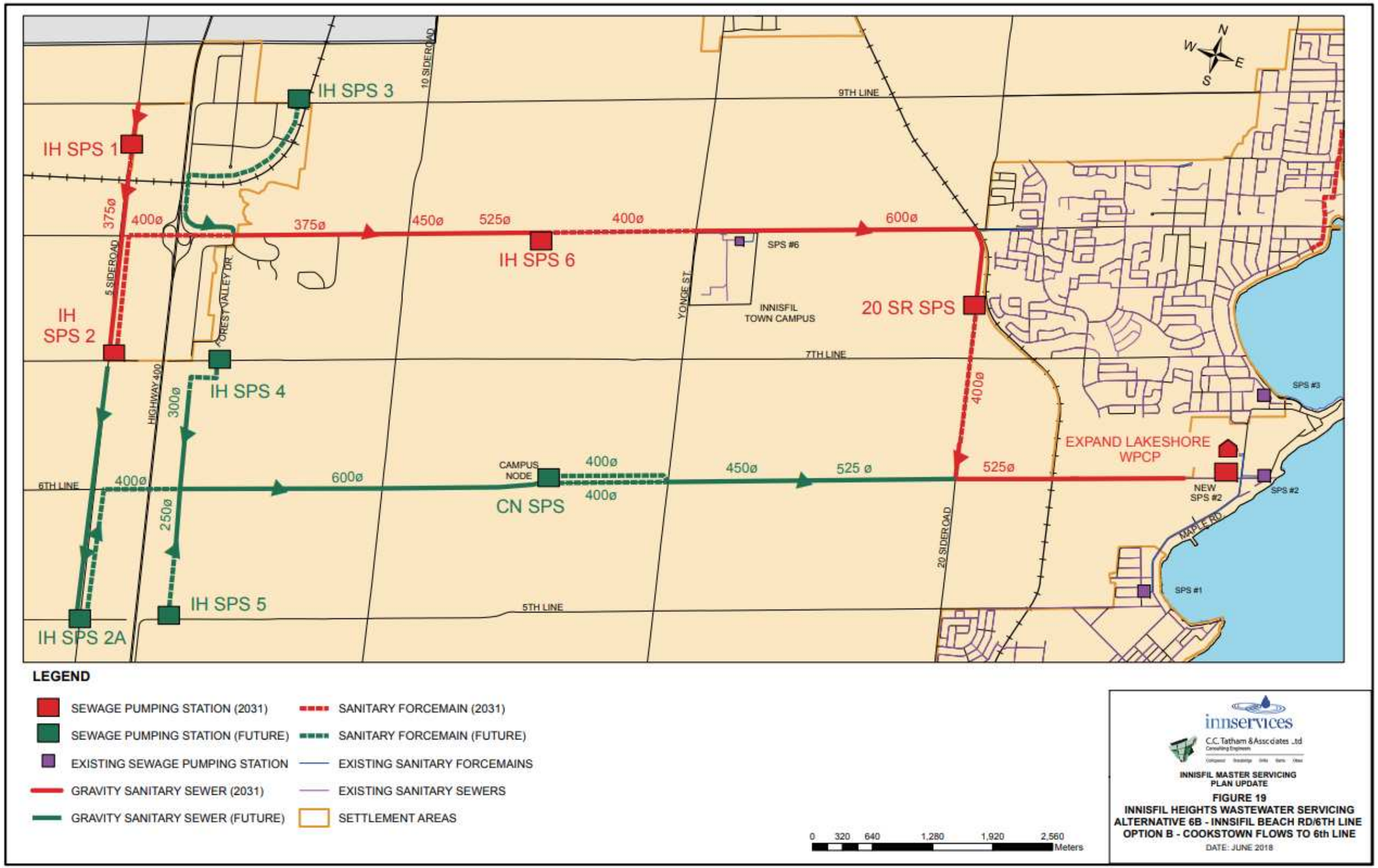


Figure 1 – Innisfil Heights Wastewater Servicing Alternative 6B

1.2 Class Environmental Assessment Process

The Municipal Class Environmental Assessment document (amended 2024) as published by the Municipal Engineers Association outlines a planning process for municipalities to follow so as to complete infrastructure projects in an environmentally responsible manner and in accordance with the *Environmental Assessment Act* (*EA Act*). Based on the scope of the proposed improvements, a Schedule 'B' level of planning was determined to be required. A Schedule 'B' project requires completion of Phases 1 & 2 of the Class EA process as illustrated in Figure 2, which is generally comprised of the following tasks:

PHASES 1 & 2

- Identify the problem/opportunity;
- Issue Notice of Study Commencement
- Inventory the existing environment (physical, natural, social and economic);
- Develop alternative solutions to address the problem/opportunity;
- Evaluate proposed alternative solutions;
- Consult with the public, review agencies, relevant stakeholders;
- Select the Preferred Solution giving consideration to the evaluation and any feedback received through consultation;
- Establish mitigation measures to minimize potential environmental impacts;
- Document the process in a Project File Report (PFR);
- Issue a Notice of Completion followed by a 30-day review period; and
- Address and final comments and conclude the Class EA process.

Consultation is a key component of the Class EA process as it allows members of the public, Indigenous communities, and review agencies opportunity to provide relevant information and feedback for consideration.

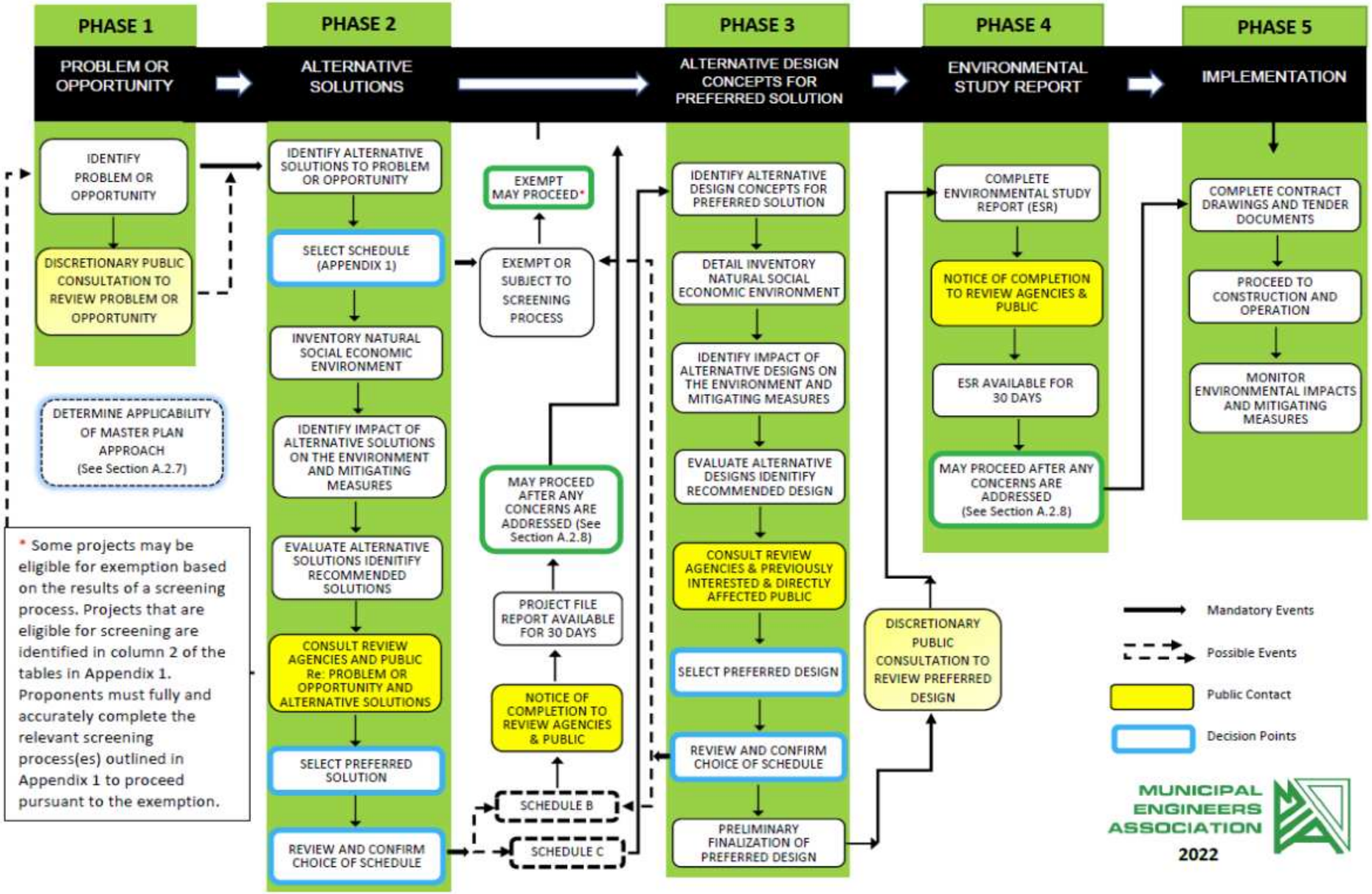


Figure 2 – Municipal Class Environmental Assessment Flow Chart

1.3 Objective of this Report

The objective of this project file report is to document the Class EA, Schedule 'B', planning process for the project. This report identifies the deficiencies affecting the project study area; the Problem/Opportunity Statement to be addressed; the alternative solutions considered; the evaluation of these alternatives to demonstrate the decision-making process leading to the selection of the preferred solution; and the consultation process. Decision-making criteria includes impacts on technical environment, natural environment, cultural and social environment and economic environment.

1.4 Project Team

The project team involved in the completion of this Schedule 'B' Class EA includes the following:

Proponent: InnServices Utilities Inc.

Prime Consultant: Ainley Group

Sub-Consultants: Azimuth Environmental Consultants Limited

Archaeological Service Inc.

GEI Consultants

2. PLANNING POLICY AND THIS CLASS EA

This section provides a brief discussion of various land use planning policies and principles to illustrate the consistency of this project in relation to provincial, regional and municipal planning goals.

2.1 Provincial Policy Statement (2024)

The *Provincial Policy Statement (2024)* provides policy direction relating to land use planning and development in Ontario. Section 3 of the *Planning Act* stipulates that all decisions affecting planning matters are to be consistent with the *Provincial Policy Statement (PPS)*. Policies applicable to this project include the following:

- Section 3.1.1 "Infrastructure and public service facilities shall be provided in an efficient manner while accommodating projected needs."
- Section 3.6.2 "Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas to support protection of the environment and minimize potential risks to human health and safety. For clarity, municipal sewage services and municipal water services include both centralized servicing systems and decentralized servicing systems."
- Section 4.1.1 "Natural features and areas shall be protected for the long term."
- Section 4.6.1 "Protected heritage property, which may contain built heritage resources or cultural heritage landscapes, shall be conserved."

As the current project is following a Municipal Class Environmental Assessment process consideration is being given to the potential to impact the physical, natural, social, and economic environment prior to selection of the preferred solution. Various studies have been completed to obtain a better understanding of the existing conditions of the study area so that impacts can be properly assessed, and appropriate mitigation developed.

2.2 Places to Grow Act (2005)

Under the *Places to Grow Act (2005)*, the Growth Plan for the Greater Golden Horseshoe (2020) is the Ontario government's initiative to plan for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life. A framework for water and wastewater infrastructure investments in the Greater Golden Horseshoe area are provided to optimize existing and future investments to serve growth to the year 2031 and beyond. Population and employment growth for each municipality, including the Town of Innisfil are required to be accommodated through intensification in existing settlement area.

2.3 Safe Drinking Water Act (2002)

The *Safe Drinking Water Act, 2002* (SDWA) and the *Drinking Water System Regulation* (O.Reg. 170/03 as amended) regulate the treatment and distribution of drinking water, including the regulation and control of drinking water systems. Requirements for all the water systems within treatment and testing processes are specified under *the Drinking Water Systems Regulation (O. Reg. 170/03 as amended).*

2.4 Clean Water Act (2006)

The purpose of the *Clean Water Act ,2006 (CWA)* is to provide protection of municipal drinking water at the source and to safeguard human health and the environment. It aims to protect existing and future drinking water sources. The CWA and its regulations ensure that municipal drinking water supplies such as the groundwater wells in Churchill, Stroud and Innisfil Heights, and the surface water intake at the Lakeshore WPCP are protected through prevention by the development of watershed-based source protection plans. The source protection plans identify vulnerable areas within each municipality and provide policies to address existing and future risks to municipal drinking water sources. This project is subject to the South Georgian Bay Lake Simcoe Source Protection Plan (2015, amended June 2021) and is within the Lake Simcoe and Couchiching/Black River Source Protection Area.

2.5 Ontario Water Resources Act (1990)

Under the *Ontario Water Resources Act, 1990 (OWCA),* the construction and operation of wastewater treatment facilities is regulated and controlled in Ontario including the Lake Simcoe basin. Requirements for the planning, design, construction and operations of wastewater systems are specified, along with the requirements that systems must satisfy in order for the province to grant approval for establishing, altering, extending, or replacing wastewater system components.

2.6 Lake Simcoe Protection Act (2008)

The purpose of the *Lake Simcoe Protection Act, 2008 (LSPA)* is to protect and restore the ecological health of the Lake Simcoe watershed, providing a legislative framework for the development of the *Lake Simcoe Protection Plan (LSPP)* and setting out its objectives. Development of the LSPP collaborated with key partners, including Indigenous communities, municipalities, local conservation authorities, agricultural and commercial sectors and residents to set objectives to reduce the discharge of pollutants and the loadings of nutrients to the Lake Simcoe watershed and to the lake. It also sets out policies that prohibit the establishment of new municipal sewage treatment plants in the Lake Simcoe watershed.

2.7 Town of Innisfil Official Plan (2018)

At the municipal level, provincial policy is implemented through the Town of Innisfil Official Plan (OP). "Our Place" Official Plan 2018 guides development of the Town of Innisfil to the year 2031 and provides the vision, goals and policies to plan growth in a responsible and sustainable way while maintaining a sense of community.

A previous released Official Plan Amendment No.1 (OPA No.1) was approved by the County of Simcoe in October 2009, specifying future population and employment growth in the Town of Innisfil. By 2031, the population target is 65,000 and employment target is 32,500.

The Town OP provides a pro-active strategy for adapting to and mitigating climate change by managing both the built and natural environment. This is achieved through the regulation of land use and development patterns, ensuring that they align with the objectives of climate change adaptation and mitigation.

2.8 Town of Innisfil Transportation Master Plan (2018)

A Transportation Master Plan (TMP) is a long-range strategic plan that identifies transportation infrastructure requirements to address existing challenges and support growth. The Town of Innisfil TMP builds upon the Town's OP and serves to advance Innisfil's Community Strategic Plan, Inspiring Innisfil 2020. The 2018 TMP update was taken into consideration in the preparation of the MSP Update to ensure appropriate alignment of the two studies and consideration of the phasing of infrastructure projects to minimize disruptions to residents and business owners.

2.9 Climate Change

The MECP guidance document entitled "Considering Climate Change in the Environmental Assessment Process" provides guidance relating to the Ministry's expectations for considering climate change in the preparation, execution and documentation of EA studies and processes. The Guide is now a part of the Environmental Assessment Program's Guides and Codes of Practice. The environmental assessment of proposed undertakings is to consider how a project might impact climate change and how climate change may impact a project.

The guide outlines two types of climate change effects for consideration. The first is, it discusses the impact a project can exert on climate change, focusing on its potential to mitigate climate change by decreasing carbon emissions and/or preserving natural landscapes that serve as carbon sinks. Secondly, it addresses how climate change affects a project, emphasizing the importance of assessing the project's ability to adapt to climate change impacts.

Climate Change was considered during the course of this Class EA, and mitigation and adaptation measures were incorporated into the evaluation of alterative solutions, as discussed further in Section 3.5 and 10.11 of this report.

3. EXISTING CONDITIONS

3.1 Study Area

The Town of Innisfil is one of sixteen municipalities within the County of Simcoe, located on the western shore of Lake Simcoe. Innisfil Heights located in the northwest of Innisfil is designated as a Strategic Settlement Employment Area including a commercial/industrial area in the 2018 Town's Official Plan. The Study Area is located on 5th Sideroad between Innisfil Beach Road and 7th Line (Figure 3), and is defined as the overall area bounded by the east and west sides of 5th Sideroad on which a new sewage pumping station can be located to best service the Strategic Settlement Employment Area.

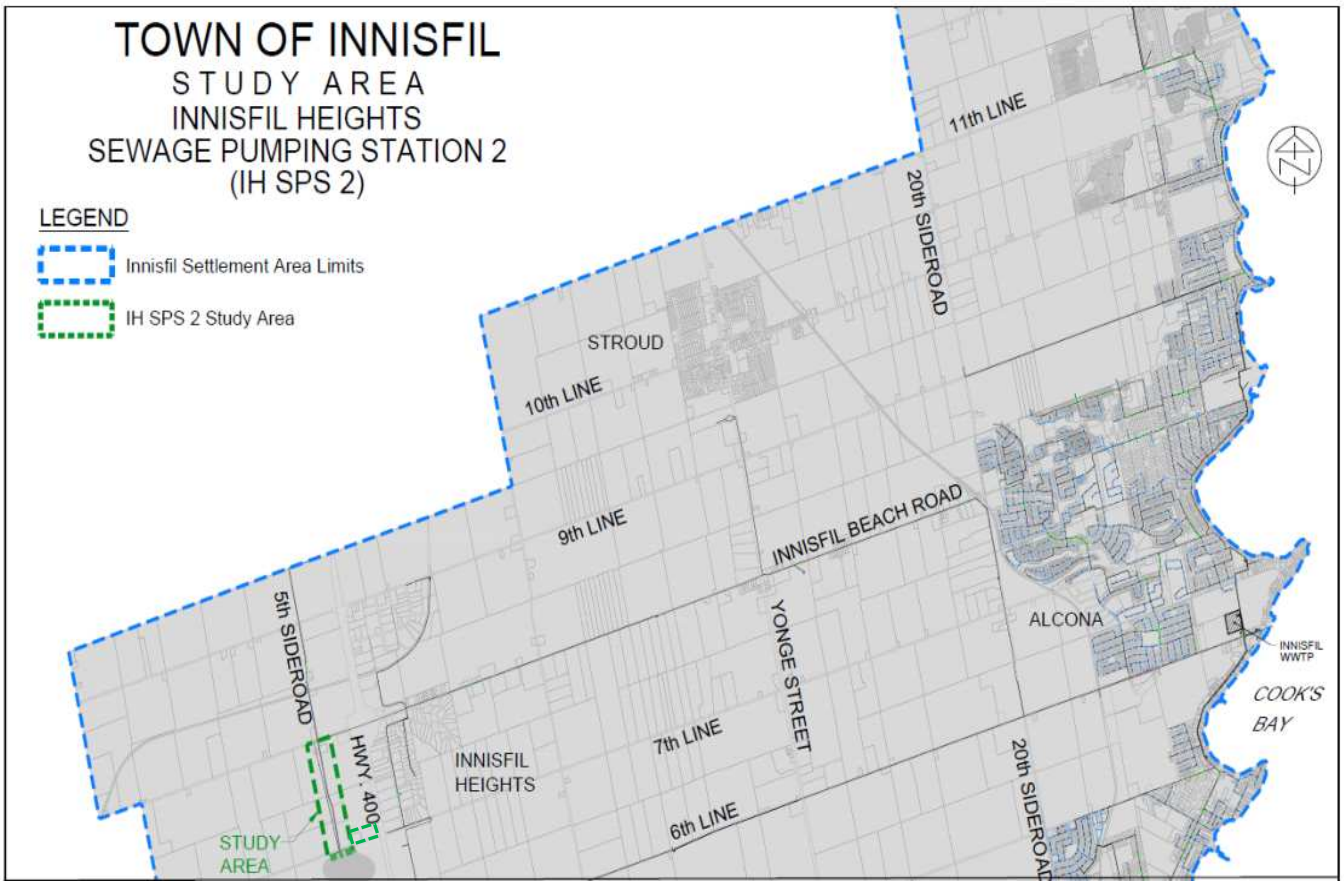


Figure 3 - IH SPS 2 Study Area

Innisfil Heights is located in the northwestern area of Innisfil. The existing land use within the study area is primarily a mix of rural uses, agricultural land and open green space lands (Figure 4). Innisfil Beach Road is a major Highway 400 exit and represents the primary commercial and tourism gateway to Innisfil.

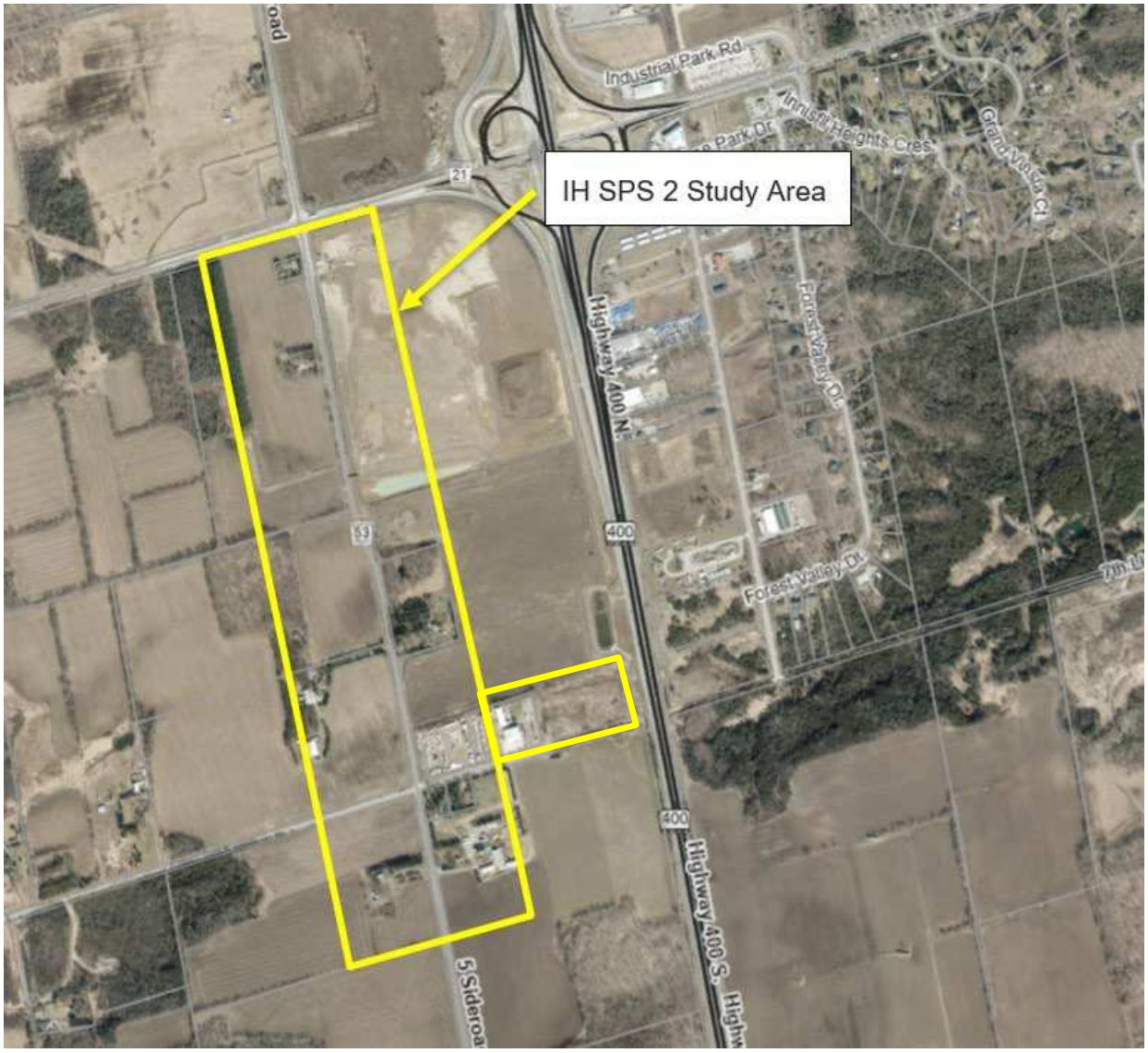


Figure 4 – Aerial Map of Study Area

(Source: County of Simcoe Mapping)

Innisfil Height's economic district and residential community rely on individual septic systems for wastewater disposal.

3.2 Technical/Physical Environment

This section describes the characteristics of the study area to provide context and allow for accurate evaluation of potential impacts. Various studies have been competed to determine existing environmental conditions as well as to identify any potential impacts the alternatives solutions pose to the environment within the Study Area.

3.2.1 Existing Wastewater Flows

The MSP Update (InnServices Utilities Inc., 2018) reviewed the daily wastewater flows measured at the Lakeshore WPCP from 2007 to 2017 and were reviewed to determine the per capita wastewater generation rates. Considering five years of data from 2013 to 2017 at the Lakeshore WPCP, the average per capita wastewater flow was 334 L/p/day (Litre per person per day). Of this average flow, a portion is considered base domestic flow and the other dry weather infiltration. The dry weather flow averaged 288 L/p/day in the period between 2013 and 2017. The five-year average inflow and infiltration (I/I) contribution was 46 L/p/day. However, contribution of I/I to the average flow was higher in 2017 than in previous years.

Analysis of the peak daily wastewater flow data shows that the per capita peak flow was lower in the period between 2013 and 2017, averaging 716 L/p/day. The estimated wet weather I/I contribution to the peak flow varies: the highest per capita I/I was 560 L/p/day in 2016, less than was estimated based on earlier data.

3.2.2 Existing Wastewater System

The Lakeshore wastewater system consists of a network of sanitary sewers, nine sewage pumping stations, and the Lakeshore WPCP. Current SPS #6 services the Town Campus, including the Town Hall, the Multi Use Recreational Facility (MURF), the Ontario Provincial Police (OPP) building and a new private school. Existing SPS #6 with 2 pumps has rated capacity of 10 L/s which can also serve existing and future population in 2031. SPS #7 serves a small area in Alcona North, which means once future development on Spring Street proceeds it will be eliminated.

3.2.3 Projected Wastewater Flows

IH SPS 2 is designed to handle an Average Daily Flow (ADF) of 13.2 L/s, with a peak wet weather flow of 26.5 L/s, as detailed in Appendix A – IH SPS 2 Future Flows Memorandum.

This station will service 65.6 hectares of future industrial land and receive flow from IH SPS 4. IH SPS 4 is a proposed station that may be constructed in the future but is outside the scope of this EA. Wastewater will be conveyed through a forcemain to the proposed trunk sewer along Innisfil Beach Road. The system is designed to accommodate the area's planned growth while ensuring wastewater infrastructure efficiency during peak flow conditions.

Table 1 provides a summary of the projected flows for the IH SPS 2.

Table 1 – Flow Projection Summary to IH SPS 2

Identification	Designation	Area (ha)	ADF Estimate (L/s)	Peak Wet Weather Flow Estimate (L/s)
F-1	Industrial	65.6	7.6	15.2
From IH SPS 4 [1]	-	-	5.6	11.3
Total		**65.6**	**13.2**	**26.5**

Identification	Designation	Area (ha)	ADF Estimate (L/s)	Peak Wet Weather Flow Estimate (L/s)
[1] Flow provided by Master Servicing Plan project team				

3.2.4 Geotechnical and Hydrogeological Conditions

GEI Consultants, on behalf of Ainley Group, completed geotechnical and hydrogeological reports that discuss the background site conditions (Figure 5). The investigation is based on a desktop review of previous findings in the area. A copy of the full report is included in Appendix B.

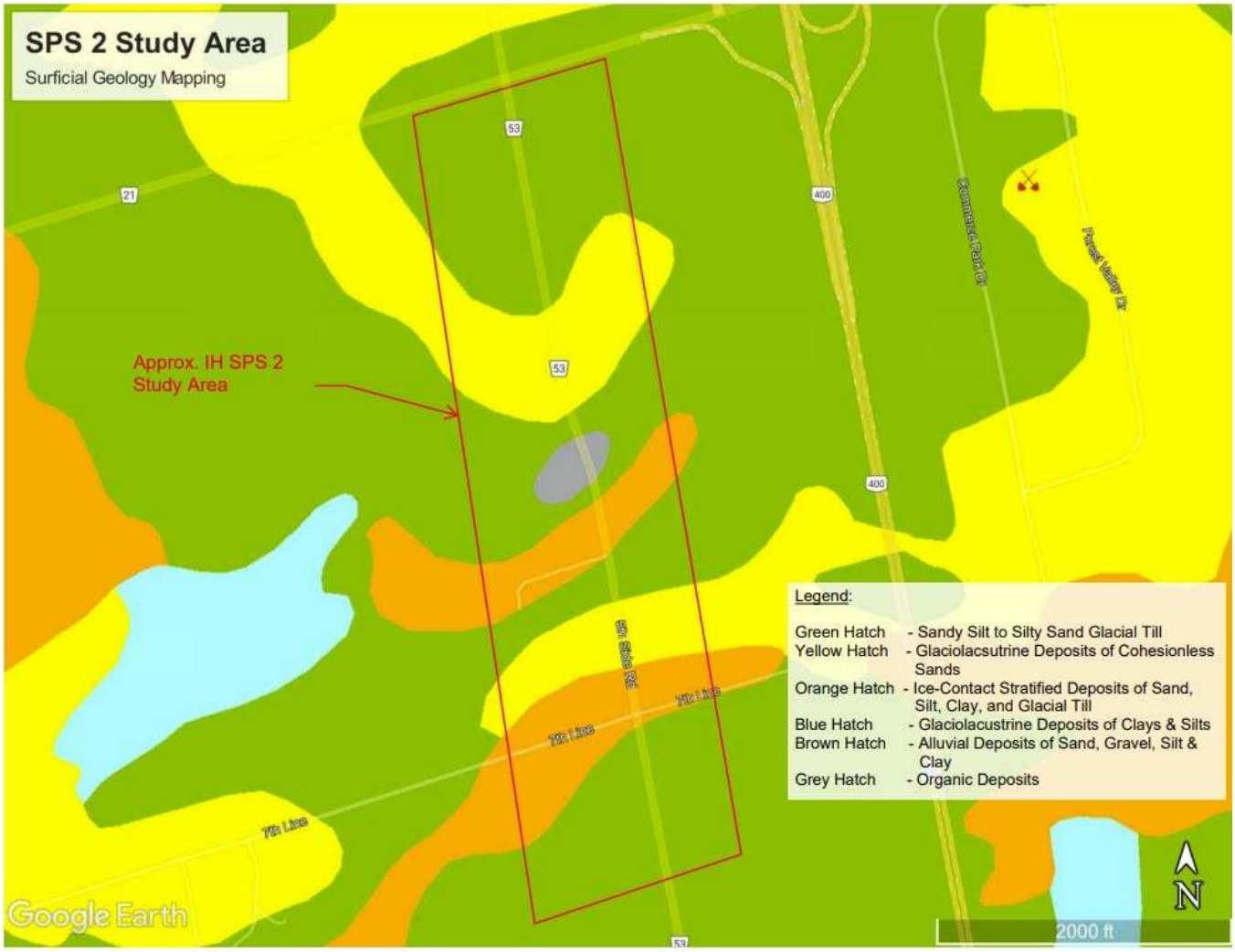


Figure 5 – Surficial Geology Mapping

Glacial Till Deposits:

- Based on the subsurface conditions encountered near the study area, it is expected that the glacial till deposits will be either cohesionless and compact to very dense or cohesive and very stiff to hard. The glacial till is likely competent / favourable for the support of buildings,

structures, construction and drilling equipment, and for support of shoring wall tie-backs or anchors.

- Glacial till deposits are well graded and laboratory testing the from the nearby MTO boreholes indicate a relatively high percentage of fines. The glacial till is expected to be less permeable than the sand deposits, which can significantly reduce water taking rates and potential complications during construction dewatering.
- The lower permeability will reduce the dewatering radius of influence which reduces the potential impacts to nearby surface water features, drinking water wells, or settlement of nearby land.
- An excavation made fully within glacial till has a reduced potential to require a PTTW from the MECP (i.e. less than 400,000 L/day of pumping).
- Cobbles and boulders may be embedded within the deposits. This has a potential to interfere with caisson drill rigs (e.g. for shoring wall installation) or during excavations and would need to be addressed in construction contracts.
- There is a reduced potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
- Glacial till is considered the most favourable soil type for the SPS construction.

Cohesionless Sand Deposits (Alluvial or Glaciolacustrine):

- It is expected that the sand deposits encountered on site, either from grade or below the glacial till deposits, will be competent for the support of buildings, structures, construction access and drilling equipment, and for support of shoring wall tie-backs or anchors.
- The major consideration for the sand deposits is groundwater control and constructability. Depending on the grain size distribution and percentage of fines, higher groundwater flow rates are expected for excavations made into the sands.
- Higher flow rates may require a more robust dewatering system and increases the potential for a PTTW from the MECP. The dewatering radius of influence will also be higher in the sands which has an increased potential to impact nearby surface water features, drinking water wells, or settlement of nearby land.
- There is an increased potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
- There may be cobble or gravel zones within the sands that can increase the difficulty of excavation or caisson installation for shoring walls.

Based on this preliminary review, the southernmost extent of the IH SPS 2 study area is expected to be the best location from geotechnical and hydrogeological engineering perspectives.

- There appears to be the highest probability for deeper glacial till deposits in this area based on the geology mapping, MECP well records and MTO boreholes. Sand deposits may still be encountered underlying the glacial till.

- There are some nearby houses and farms but there is also vacant land that may facilitate open cut excavations instead of shoring systems. The thicker glacial till deposits typically undergo less dewatering related settlement, reducing potential impacts to the structures.
- There are nearby domestic wells but they are typically screened at depths of 13 metres below grade or deeper (below the expected wet well depth), reducing potential impacts from construction dewatering.
- The area is furthest from the Wellhead Protection Area in the northeast.
- This southern area is noted to be close to / within a “future strategic development” space shown on the study area plan provided from the client (included in Enclosure 1).

The northern end of the study area is less preferred.

The middle section of the study area near the wetlands is the least preferred due to potential for organic deposits, a higher groundwater table, and potential dewatering impacts on the wetlands.

3.3 Natural Environment

Portions of the study area are regulated by the Nottawasaga Valley Conservation Authority (NVCA) as per Ontario Regulation 172/06 and the Lake Simcoe and Region Conservation Authority (LSRCA) as per Ontario Regulation 179/06, therefore NVCA and/or LSRCA consultation is required prior to site alteration in regulated lands.

Azimuth Environmental Consulting, Inc. (Azimuth) on behalf of Ainley Group, completed an Environmental Constraints Analysis of Natural Heritage Features within the study area. Sections 3.3.1 to 3.3.4 provide a summary of the environmental constraints analysis and consideration of potential impacts. A copy of the report is included in Appendix C. The study approach used by Azimuth involved background information research and field surveys from the roadway.

3.3.1 Vegetation and Vegetation Communities

The study area includes several natural heritage components including woodlands, wetlands and watercourses that are intermixed with agricultural, rural residential and commercial lands. Excluding the anthropogenic land uses, a total of six vegetation communities were identified. Vegetation units were generally classified using Ecological Land Classification for Southern Ontario protocols.

The road right of way (ROW) was typically composed of open ‘field’ habitat composed of opportunistic herbaceous/grass species. Riparian vegetation typically exists in proximity to two mapped watercourses within the study area. Although not considered a Key Natural Heritage Feature (KNHF), many of the rural properties are treed and include hedgerows that border the properties.

Unevaluated wetland exists within the study area and adjacent lands. No Butternut (Endangered) or Black Ash (Endangered) were observed during the 2021 field investigation.

3.3.2 Species at Risk

The Ministry of Natural Resources and Forestry’s (MNRF) Natural Heritage Information Centre database identifies records for two SARs: Eastern Meadowlark (Threatened) and Wood Thrush (Special Concern).

The following list only considers species that have a moderate or high possibility of occurring within the study area:

- Butternut (Endangered) and Black Ash (Endangered): While no Butternut or Black Ash were identified during 2021 field surveys, potential habitat for these species occurs within the wetland and forest communities in addition to individual trees on rural properties or within hedgerows;
- Bobolink and Eastern Meadowlark (Threatened): Potential habitat for Bobolink and Eastern Meadowlark occurs within the agricultural lands of the study area with a higher likelihood of presence within fallow or hay fields;
- Endangered Bats (Little Brown Myotis, Northern Myotis and Tri-colored Bat): Forest habitat provides potential habitat for Endangered bat species;
- Red-headed Woodpecker (Endangered): Potential habitat for Red-headed Woodpecker includes woodlands or areas with tall trees of large circumferences, high basal area, a low density of stems in the understorey, and a high density of snags and dead limbs that are used for perching, nesting and food catching.

3.3.3 Watercourses and Fish Habitat

The study area includes two drainage features. The more northerly of the two crossings is the Lawson Drain within the Thornton Creek subwatershed, crossing Line 5 approximately 560m south of Innisfil Beach Road with discharge westerly. This north crossing is located in the NVCA watershed. The more southerly drainage feature originates at Line 5 and discharges easterly under Highway 400, forming a small headwater tributary of Lover's Creek approximately 133m north of the 7th Line. This southern feature is in the LSRCA watershed.

For Lawson Drain, the drain bears evidence of past straightening and channelization, and conveys runoff in a narrow vegetated corridor dominated by grasses and cattails. Background mapping indicates that the Lawson Drain is a municipal drain regulated under the *Ontario Drainage Act*. The Lawson Drain at the 5th Line is expected to provide indirect fish habitat and is protected under the *Federal Fisheries Act*. There are no records of aquatic SAR in the sub-watershed. Any construction activities that propose to alter site conditions will require project review by a fisheries ecologist to determine potential impacts fish habitat, mitigation requirements, and requirements for permitting.

For Tributary of Lover's Creek, the desktop mapping resources identify a feature as originating at Line 5, extending east towards Highway 400. The channel appears historically channelized between agricultural lands and a privately owned commercial business, mapped as a first order system in the Lover's Creek sub-watershed. Drainage is within a vegetated narrow riparian corridor before crossing under the highway, before entering the Lover's Creek natural heritage system that includes PSW wetland and woodlands in what may be considered the 'west portion' of the overall Lover's Creek PSW wetland. The Tributary of Lover's Creek at the 5th Line is expected to provide indirect fish habitat and is protected under the *Federal Fisheries Act*. There are no records of aquatic SAR in the sub-watershed. Any construction activities that propose to alter site conditions will require project review by a fisheries ecologist to determine potential impacts fish habitat, mitigation requirements, and requirements for permitting.

3.3.4 Ground water

The Ministry of Environment, Conservation and Parks (MECP) Source Protection Information Atlas was reviewed to confirm if the subject study area is located within a designated vulnerable area. The study area is with a Highly Vulnerable Aquifer with a score of 6, and south side of the study area is with an Intake Protection Zone 3. These scores indicate that there is no significant threat to drinking water in these locations and therefore no specific polices apply from the South Georgian Bay Lake Simcoe Source Protection Plan.



Figure 6 – Key Natural Heritage Features

3.4 Cultural Environment

Cultural heritage resources include archaeological resources, built heritage resources and cultural heritage landscapes.

3.4.1 Stage 1 Archaeological Study

A Stage 1 Archaeological Assessment was undertaken under Project Information Form (PIF) P383-0306-2021 in March 2022 by Archaeological Services Inc. (ASI) for Innisfil Heights Sewage Pumping Station 2 (Lot 5 and Lot 6, in Concession 6 and Concession 7, Former Township of Innisfil, County of Simcoe). A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting Ministry of Citizenship and Multiculturalism (MCM) to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment as necessary. A copy of the full report is included in Appendix E.

Background research indicates that one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres. Current conditions indicate that parts of the Study Area exhibit archaeological potential. These lands require Stage 2 Archaeological Assessment by test pit and pedestrian survey at 5m intervals prior to any proposed construction activities. The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or being previously assessed. These lands do not require further archaeological assessment. Further archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands if the proposed work extend beyond the current Study Area.

3.4.2 Stage 1, 2 & 3 Archaeological Study

A Stage 1, 2 & 3 Archaeological Assessment was undertaken under PIF P379-0375-2021 & P379-0382-2021 on June 2021, by Irvin Heritage Inc. on behalf of the property owner (located on part of Lot 6, Concession 7, Town of Innisfil, Simcoe Region). The Stage 2 Archaeological Assessment was conducted as part of the broader Archaeological Assessment. The property owner has granted permission for the EA team to use this report for the purposes of the EA. A copy of the full report is included in Appendix F.

A stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment as necessary.

A Stage 2 AA consists of a survey by the licensed archaeologist to identify any archaeological resources on the property (or study area). The archaeologist will determine whether any archaeological resources found are of sufficient cultural heritage value or interest to require Stage 3 assessment.

A Stage 3 AA consists of a determination by the archaeologist of the dimensions of the archaeological site, an evaluation of its cultural heritage value or interest and, where necessary, a recommendation for Stage 4 mitigation strategies.

This report covers the entire property at 7131 5th Sideroad. Based on the SPS location, a 5-meter interval Test Pit Survey was conducted, and no archaeological resources were identified as shown in Figure 7 below.

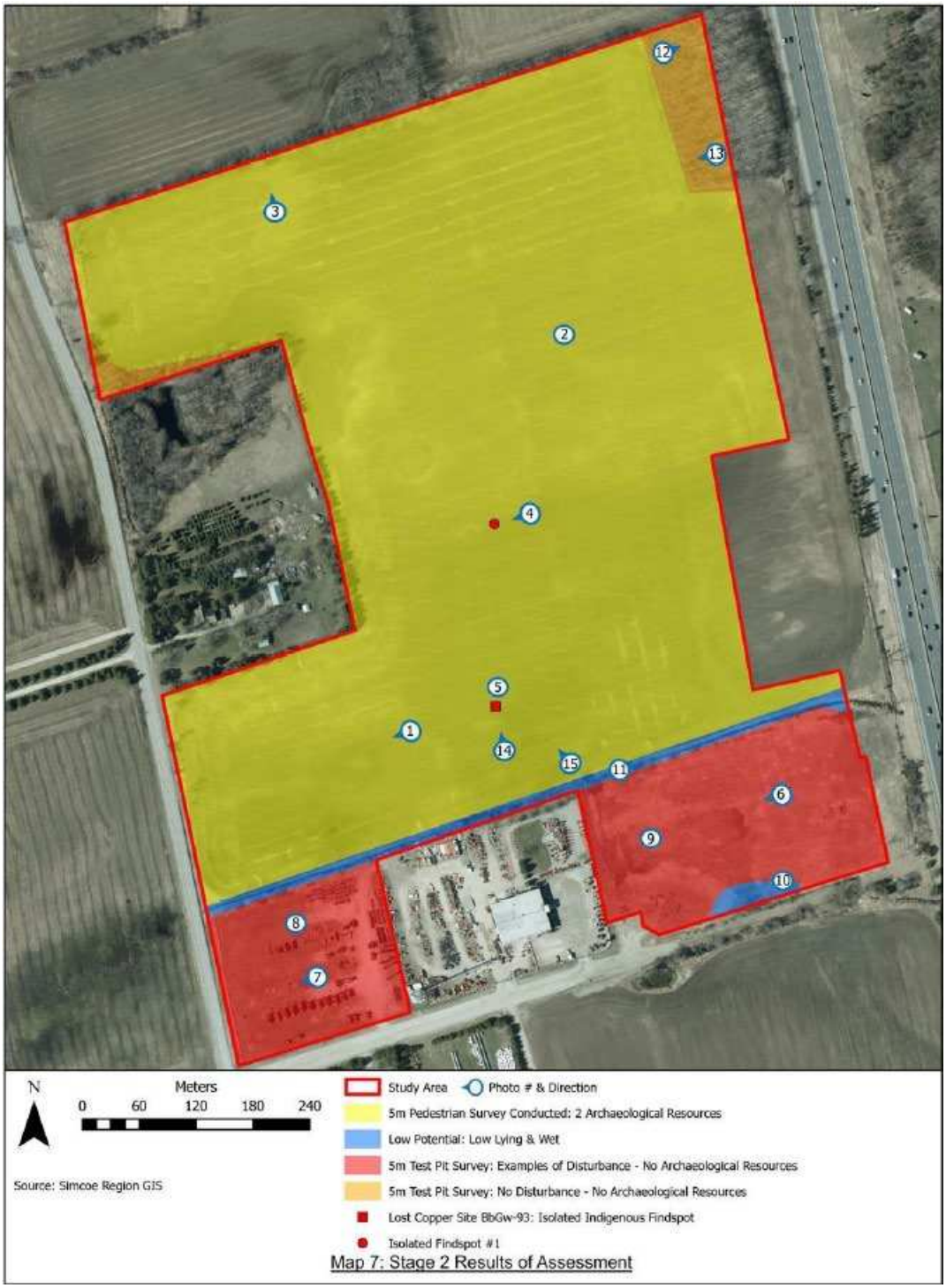


Figure 7 – Stage 2 Results of Assessment

3.4.3 Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was undertaken in April 2022 (revised in March and August 2025) by ASI for Innisfil Heights Sewage Pumping Station 2. The assessment for this report consisted of data collection, background historic research, review of secondary source material and field review. A total of four potential cultural heritage landscapes were identified within the study area. Figure 8 provides mapping completed by ASI indicating the presence of heritage resources as described.

A copy of the full report is included in Appendix G.



Figure 8 – Location of Identified CHLs in the study Area
(Source: Cultural Heritage Report by Archaeological Services Inc.)

3.5 Climate Change

As per the MECP guidance document referenced in Section 2.9, the project's potential impacts to climate change and how climate change may impact the project were considered. Climate change concerns generally relate to the increased concentration of greenhouse gases in the atmosphere, which can result in a rise in the global mean surface temperature. Increased temperatures worldwide are creating changes in climate that is resulting in extreme weather events.

The current project is relatively small in scale, as it involves the construction of only one sewage pumping station. The construction footprint is limited, and it extends up to the property line, where it will connect to the future municipal system through the sewage forcemain located in the ROW. Climate change has the potential to result in increased storm events that can lead to flooding. This is a small-scale project and a long-term increased risk to surface flooding is not anticipated; however, the project will increase paved surfaces and therefore, impermeable areas. During the preliminary design stage, we may explore the implementation of Low Impact Development (LID) measures for increased infiltration, which will assist in reducing potential environmental impacts. Stormwater will be managed to control both storm flow maintained at the pre- development level and quality managed to meet requirements.

Mitigation and adaptation measures will be further discussed in Section 10.11.

4. PHASE 1 – PROBLEM/OPPORTUNITY STATEMENT

The purpose of Phase 1 of the Class EA process is to develop a problem/opportunity statement that clearly identifies the issue, challenge, or opportunity that is being reviewed and addressed. The problem/opportunity statement that has been developed for InnServices' New Innisfil Heights Sewage Pumping Station 2 is as follows:

> *"Identify and develop a preferred solution (location) for the new Innisfil Heights Sewage Pumping Station 2 on 5th Sideroad to meet the future capacity requirements in the Strategic Settlement Employment Area."*

5. PHASE 2 - PROPOSED ALTERNATIVE SOLUTIONS

5.1 Preliminary Screening Criteria

As part of Phase 2 of the Class EA process, several alternatives have been developed to address the problem/opportunity statement. A Preliminary Screening was conducted to eliminate alternatives that would not meet the basic criteria below.

- Screening Criteria No. 1 – Does the alternative meet the problem/opportunity statement?
- Screening Criteria No. 2 – Does the alternative meet the minimum technical requirements?
- Screening Criteria No. 3 – Can the alternative be implemented without facing significant impacts that mitigation measures could not address?

5.2 Preliminary Screening of Long List Alternative Solutions

The long list of alternative solutions was evaluated against the screening criteria outlined in Section 5.1. The results of the screening evaluation are presented in Table 2, alternatives carried forward for further consideration are highlighted in light blue.

Table 2 – Ability of Alternatives to Meet Preliminary Screening Criteria

Alternative	Description	Feasibility
A: Do Nothing	No changes from the existing conditions.	Will not solve the problem, as it does not facilitate development stated in the MSP and the Town of Innisfil Official Plan. Not carried forward for further evaluation.
B: Limit Development	Inconsistent with the MSP and Town of Innisfil Official Plan.	Not feasible. This option will not be carried forward for further evaluation.
C: Construction of a New Pumping Station	Will allow for the collection and conveyance of all wastewater generated within the designated servicing area in the Innisfil Heights economic area to the Water pollution Control Plant (WPCP) and facilitate development consistent with the Town of Innisfil Official Plan.	Six alternative locations have been identified for evaluation.

5.3 Alternative Sites for the Shortlisted Solutions

The footprint of the SPS is small in comparison to the land parcel of the study area. The full length of the parcel frontage was evaluated to result less inconvenience to the property owner, thorough geotechnical investigation (boreholes results), and elevation changes across the site. Selected land parcels which are along 5th Sideroad were picked to avoid commercial-used lands, stay away from any nearby structures to the frontage, and specified residential dwelling/parcels, if possible. Three properties have been considered in the review of site alternatives with a total of six alternative locations being considered:

Alternative 1

1A is located between 5th Sideroad, Innisfil Beach Road and Highway 400. The site is currently used for agricultural use and is zoned as Industrial Business Park. The property is within the NVCA watershed.

Alternative 2A

The site is located on the northwest frontage of agricultural property between 5th Sideroad, 7th Line and Highway 400, and is zoned as Industrial Business Park. This site is in the NVCA watershed, but outside of the regulated lands.

Alternative 2B

The site is located on the center west frontage of agricultural property between 5th Sideroad, 7th Line and Highway 400, and is zoned as Industrial Business Park. This site is in the LSRCA watershed, but only the south border is within regulated lands.

Alternative 2C

The site is located on the southwest frontage of agricultural property between 5th Sideroad, 7th Line and Highway 400, and is zoned as Industrial Business Park. This site is in the LSRCA watershed, but only the north border is within regulated lands.

Alternative 2D

The site is located on 7th line on the south end of the study area. The site is on an agricultural land which is a zoned Business Industrial Park and is situated in the LSRCA watershed. Both the north and south sides of the site are in regulated lands.

Alternative 3

This site is situated at the southern end of the study area on 7th Line. It is located within privately owned property designated for commercial business and is a zoned Business Industrial Park. The site is situated within the watershed managed by LSRCA. Both the northern and certain southern portions of the site are within regulated lands.

An overall plan showing each alternative is provided in Figure 9.

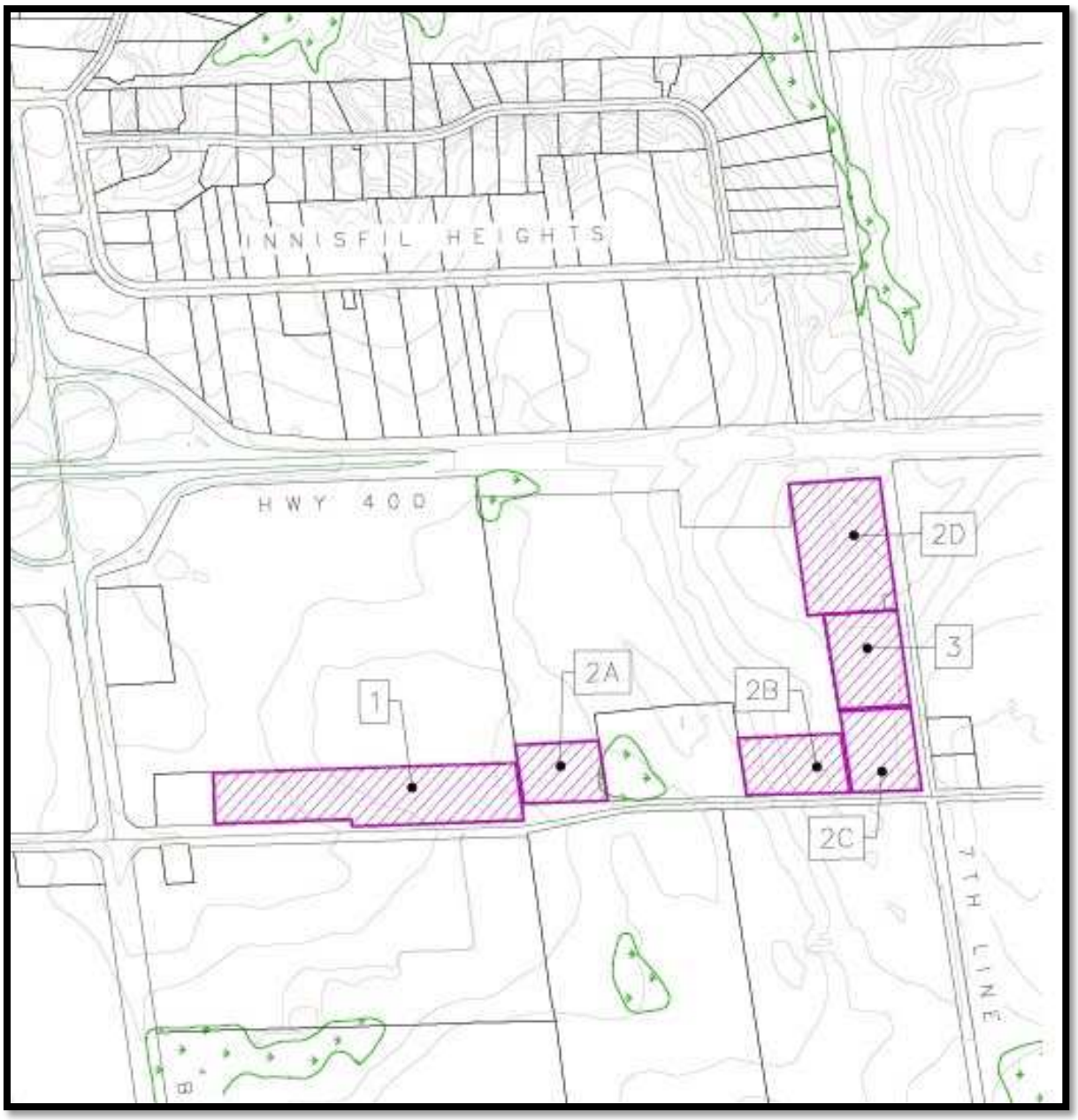


Figure 9 – Preliminary Alternatives

6. Detailed Evaluation of Alternative Solutions

6.1 Evaluation Matrix

Each of the alternatives underwent an evaluation based on their potential impact on the environment of the study area, including physical, natural, cultural, and socio-economic aspects. The results of this evaluation are presented in a table or matrix to present a simplified, visual comparison, as shown in Figure 10.

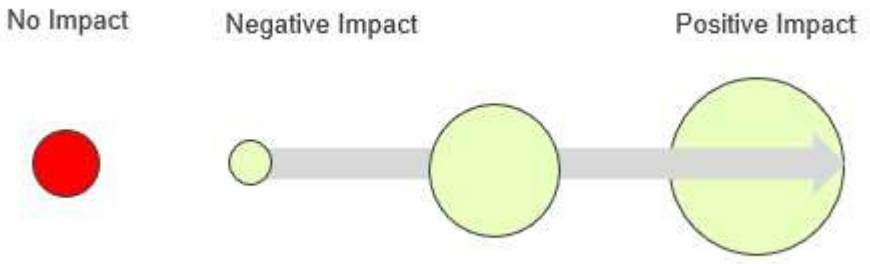


Figure 10 – Evaluation Matrix (Visual Comparison)

An increased number of larger circles indicates that an alternative has increasing positive impacts and fewer negative impacts.

6.2 Detailed Evaluation Criteria

Each alternative solutions were evaluated with respect to their impact on the environment. The completion of the evaluation considered a number of factors, which were separated into evaluation criteria:

- **Physical/Technical Environment:** Suitability of Elevation and Topography, Geotechnical Suitability, Hydrogeological Suitability, and Hydraulics
- **Natural Environment:** Proximity to Key Natural Heritage Features, Terrestrial Vegetation/Wildlife (Including SAR), Surface Water and Fisheries, Groundwater, and Climate Change/Air Quality
- **Cultural and Social Environment:** Archaeological Resources, Built Heritage Resources, Cultural Heritage Landscapes, Aesthetics (Noise, Odour, Visibility), Impacts to Property Owners, and Impacts to Adjacent Business/Commercial Properties
- **Economic Environment:** Operating and Maintenance Costs, Capital costs, and Land Acquisition Costs

6.3 Evaluation Scoring

The evaluation scoring for each alternative is presented in a table to provide a simplified, visual comparison (Table 3). A full discussion on the evaluation of each criteria is found in section 6.4

Table 3 – Evaluation Matrix for Six Alternative

EVALUATION CRITERIA	ALT 1	ALT 2A	ALT 2B	ALT 2C	ALT 2D	ALT 3	DESCRIPTION OF EFFECTS
PHYSICAL ENVIRONMENT							
Suitability of Elevation and Topography	▫	▫	○	○	◯	◯	Alternative 1 and 2A pose more of a technical disadvantage due to topography. Preliminary layout indicates that there is adequate space for station footprint within each Alternative site.
Geotechnical Suitability	○	▫	○	◯	○	◯	Preliminary review suggests that Alternatives 1, 2B and 2D have a likelihood of being cohesionless sands which are not as beneficial for construction. Alternative 2A has higher likelihood of organics due to proximity of wetland. Alternative 2C and 3 have a higher likelihood of being glacial till which better supports construction.
Hydrogeological Suitability	○	○	▫	○	▫	○	Hydrogeological conditions to be confirmed. Alternatives 2B and 2D show a disadvantage due to likelihood of higher groundwater flow rates requiring more robust dewatering system. Depending on the location of the SPS on each site, dewatering in close proximity to the watercourse may have impacts on Alternatives 2B, 2C, 2D and 3. As well, dewatering near 2A could impact the wetland. Depending on the location of the SPS on the site of Alternative 1, there could be impacts on the watercourse. It is recommended to situate the SPS away from watercourses and wetlands.
Hydraulics	▫	▫	○	○	◯	◯	Alternative 2D is at the lowest location in the catchment providing opportunity for the lowest capital cost expenditure on gravity sewers to the site and minimizing wetwell depth requirements. This site requires the longest pumping distance of all alternatives however headlosses related to pumping distance can be mitigated through forcemain design. Site alternatives become less preferable towards the north end of the study area, with Alternative 1 being the least preferable option.
NATURAL ENVIRONMENT							
Proximity to Key Natural Heritage Features	◯	○	○	○	▫	○	All alternatives are within close proximity to a Key Natural Heritage Feature (KNHF) such as a watercourse, wetland, or potential habitat for Species at Risk. Detailed studies are required to confirm the presence or absence of significant wildlife habitat. Alternative 1 provides the most flexibility for the footprint of the SPS to be the furthest distance from any identified KNHF.
Terrestrial Vegetation/Wildlife (Including SAR)	○	○	○	○	○	○	There is potential SAR habitat within the agricultural fields and forest habitat within the study area. The alternatives are within agricultural land. The preferred alternative will be studied further to consider site specific impacts.
Surface Water and Fisheries	◯	◯	○	○	▫	○	Alternatives 1, 2B, 2C, and 3 are bordered on one side by watercourses protected under the Federal Fisheries Act. Alternative 2D is bordered on both sides (north and south) by a watercourse. The size of the site of Alternative 1 provides flexibility in the footprint of the SPS and it could potentially be placed further away from the identified watercourse. Any proposal to alter site conditions in water or within lands regulated by the NVCA or LSRCA requires site specific fisheries evaluation of project activities to confirm potential impacts, and mitigation requirements prior to development. Alternative 2A is in close proximity to an unevaluated wetland.
Groundwater	○	○	○	○	▫	▫	Sites 2D and 3 are within areas of 'Significant Groundwater Recharge'. All alternatives are within an area classified as a 'Highly Vulnerable Aquifer'.
Climate Change /Air Quality	○	○	○	○	○	○	All alternatives are similar in air quality and climate change impacts.

EVALUATION CRITERIA	ALT 1	ALT 2A	ALT 2B	ALT 2C	ALT 2D	ALT 3	DESCRIPTION OF EFFECTS
CULTURAL AND SOCIAL ENVIRONMENT							
Archeological Resources	○	○	○	○	○	○	All Alternative site locations have been previously assessed and require no further work.
Built Heritage Resources and Cultural Heritage Landscapes	○	○	○	●	●	●	The northern portion of Alternative 1 is in close proximity to a cultural heritage landscape. As well Alternatives 2A and 2B surround a cultural heritage landscape. The remaining three alternatives are not adjacent to any identified cultural heritage landscapes. There are no built heritage resources inventoried within the study area.
Aesthetics (noise, odour, visibility)	○	○	○	○	○	◦	All of the sites with the exception of Alternative 3 are all situated on agricultural land zoned as Industrial Business Park and there is a minimized proximity to the public. A SPS on the site of Alternative 3, which operates as a commercial business, would have the most impacts.
Impacts to Property Owners	○	○	○	○	○	○	Alternatives 1, 2BA and 2C are closest to a residential home. The sites are large enough to situate the SPS further from the houses to minimize impacts and therefore all ratings are similar.
Impacts to Business/Commercial Properties	●	●	●	●	●	◦	A commercial business is currently in operation on the site of Alternative 3. Construction of the SPS would be disruptive to business activities. The outdoor space is currently fully in use; therefore, a pumping station may not be welcomed. Future development on remaining properties will benefit from the SPS which will be built to service the future development on the properties.
ECONOMIC ENVIRONMENT							
Operating and Maintenance Costs	●	○	○	○	◦	○	In general operation and maintenance costs escalate as pumping distance increases due to the increase in dynamic headlosses and resulting increase in pump size requirements. In addition, longer forcemains can result in odour issues if retention time is too long. However, dynamic headlosses can be mitigated with proper forcemain sizing and retention time can be reduced through design alternatives such as dual forcemains.
Capital Costs	◦	◦	○	○	●	●	The capital costs for the SPS's will increase northwards due to the topography of the land, increasing the depth of the wet well and depth of the future sewer system.
Land Acquisition Costs	○	○	○	○	○	○	All site locations are within the Strategic Settlement Area and zoned as Industrial Business Park. The sites will require private property acquisition.
TOTAL SCORE							
	○	◦	○	●	◦	○	

6.4 Evaluation Discussion

6.4.1 Technical/Physical Environment Evaluation

a) Suitability of Elevation and Topography

Alternative 1 and 2A pose a greater technical challenge due to the topography referring to the physical features and characteristics of the surface of a particular area, such as elevation, shape of the land and natural features. In both Alternative 1 and 2A, the site location is positioned on relatively high ground compared to the lowest point within the proposed catchment area.

There is adequate space for the station footprint within each Alternative site based on preliminary layout (Figure 9).

b) Geotechnical Suitability

A preliminary review suggests that Alternatives 1, 2B, and 2D are likely composed of cohesionless sands. While these soils are suitable for supporting structures and construction, they pose a challenge due to higher groundwater flow rates during excavations, requiring a more robust dewatering system. As a result, these alternative locations are not considered ideal for construction purposes. Alternative 2A has a higher probability of containing organic materials due to its proximity to a wetland. Organic materials are generally unsuitable for foundation construction. In contrast, Alternatives 2C and 3 are more likely to consist of glacial till, which is better suited for construction.

c) Hydrogeological Suitability

Among the alternatives, 2B and 2D are at a disadvantage due to the likelihood of higher groundwater flow rates, which would require a more robust dewatering system. Depending on the specific location of the SPS on each site, dewatering in close proximity to the watercourse may have potential impacts on Alternatives 2B, 2C, 2D, and 3. Likewise, dewatering near Alternative 2A could impact the adjacent wetland. Furthermore, depending on the specific location of the SPS on the site of Alternative 1, there could be potential impacts on the watercourse. As a recommendation, it is advisable to position the SPS away from watercourses and wetlands to mitigate these potential impacts. The actual hydrogeological conditions for each alternatives need to be verified.

d) Hydraulics

Alternative 2D is situated at the lowest point within the catchment area, providing the advantage of lower capital costs for gravity sewers leading to the site and reducing the depth requirements for the wetwell. However, this site requires the longest pumping distance among all the alternatives. Nevertheless, head losses associated with the extended pumping distance can be alleviated through appropriate forcemain design. The site alternatives become less favorable moving towards the north end of the study area, primarily due to increasing elevation. Among these alternatives, Alternative 1 stands out as the least favorable choice.

6.4.2 Natural Environment Evaluation

a) Proximity to Key Natural Heritage Feature (KNHF)

All of the alternatives are located in close proximity to a KNHF, including watercourses, wetlands, or potential habitats for Species at Risk (SAR). Detailed studies are necessary to confirm the presence or absence of significant wildlife habitats. Among these options, Alternative 1 offers the most flexibility in terms of allowing the SPS footprint to be situated at the greatest distance from any identified KNHF.

b) Terrestrial Vegetation/Wildlife (Including SAR)

The study area contains potential habitat for SAR within the agricultural fields, as well as forest habitat. The alternatives are all located within agricultural land. Further investigation will be conducted on the preferred alternative to assess its site-specific impacts in relation to these habitats.

a) Surface Water and Fisheries

Alternatives 1, 2B, 2C, and 3 have one side bordered by watercourses protected under the Federal Fisheries Act. Alternative 2D, however, is bordered on both the north and south by a watercourse. The larger site size in Alternative 1 offers flexibility in situating the SPS footprint farther from the identified watercourse, reducing potential environmental impacts.

Any proposed changes to site conditions involving water or lands regulated by the NVCA or LSRCA require a site-specific fisheries evaluation to assess potential impacts and determine necessary mitigation measures before development can proceed. Additionally, Alternative 2A is located near an unevaluated wetland, which may warrant further environmental investigation.

b) Ground Water

Sites 2D and 3 are located within areas designated as 'Significant Groundwater Recharge' zones. Furthermore, all of the alternatives fall within an area classified as a 'Highly Vulnerable Aquifer'.

c) Climate Change/Air Quality

All the alternatives exhibit similar air quality and climate change impact characteristics.

6.4.3 Cultural and Social Environment Evaluation

a) Archaeological Resources

All the alternative site locations, with the exception of Alternative 2D, have undergone previous assessments and do not necessitate further work. However, an archaeological assessment will be necessary for Alternative 2D.

b) Built Heritage Resources and Cultural Heritage Landscapes

The northern section of Alternative 1 is situated near a potential cultural heritage landscape (CHL 1 or CHL 2). Furthermore, both Alternatives 2A and 2B include a potential cultural heritage landscape (CHL 2). In contrast, the other three alternatives (2C, 2D and 3) do not have any potential built heritage resources or cultural heritage landscapes in their proximity.

c) Aesthetics (Noise, Odour, Visibility)

With the exception of Alternative 3, all of the sites are located on agricultural land zoned as Industrial Business Park, and they generally have minimal proximity to the public. In contrast, placing an SPS on the site of Alternative 3, which functions as a commercial business, would likely result in the most significant impacts.

d) Impacts to Property Owners

Alternatives 1, 2A, 2B, and 2C are in closest proximity to a residential home. These sites have sufficient space to position the SPS further from the houses, which helps to minimize potential impacts. Consequently, the ratings for all of these alternatives are similar in this regard.

e) Impacts to Adjacent Business or Commercial Properties

A commercial business is currently in operation on the site of Alternative 3. Constructing the SPS at this location could be highly disruptive to the ongoing business activities, especially considering that the outdoor space is currently fully utilized. Consequently, a pumping station may not be well-received by the current business. However, future developments on the remaining properties in the area will benefit from the SPS, which will be designed to serve the needs of these forthcoming developments. All other alternative sites are located on agricultural lands.

6.4.4 Economic Environment

a) Operating and Maintenance Costs

In general, operation and maintenance costs tend to rise as the pumping distance increases, primarily because of the growing dynamic headlosses, which necessitate larger pump sizes. Furthermore, longer forcemains can lead to potential odour issues if the retention time is excessively long. However, dynamic headlosses can be mitigated through appropriate forcemain sizing, and retention time can be reduced through design alternatives such as the use of dual forcemains.

b) Capital Costs

The capital costs for the SPSs will tend to rise as moving northwards, primarily due to the topography of the land. This topography results in increased depths for the wet well and the future sewer system, leading to higher construction expenses.

c) Land Acquisition Costs

All of the site locations are situated within the Strategic Settlement Area and are zoned as Industrial Business Park. These sites will require private property acquisition to proceed with the project.

7. CONSULTATION

The Innisfil Heights Sewage Pumping Station 2 Class EA included an active public consultation program that sought the comments and concerns of the public and other stakeholders. Responses to comments and concerns were provided throughout the project via a number of means, including responses provided by project team members to emails and phone calls, and materials provided to the project contact list and posted on the project website.

A summary of all comments received and responses provided can be found in Table 6. A complete consultation record can be found in Appendix L – Consultation Records. The contact information for all public member comments has been removed.

7.1 Notice of Study Commencement

A Notice of Study Commencement was placed in the Innisfil Journal newspaper for the January 20th and February 3rd, 2022 editions and a copy of the notice was also posted on the Town of Innisfil's website. A mail out to area residents adjacent to the project study area, relevant review agencies as well as Indigenous communities and nations was issued on January 20th, 2022 providing notification of the commencement of the project. Copies of the issued letters and notices, as well as the agency mailing list and copies of all comments received and associated responses as a result of the Notice of Study Commencement are included in Appendix H.

MECP staff provided a formal letter dated January 28th, 2022 that acknowledged that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment. The letter had attached "Areas of Interest" document that provides guidance regarding the ministry's interests with respect to the Class EA process. The letter continued to describe the Crown's duty to consult and provided information on Indigenous communities the proponent is required to consult with as they may be potentially affected by the proposed project. A summary of the comments and responses is also provided in Table 4 in Section 7.6.

The project team received a letter from Curve Lake First Nation in regard to the proposed Innisfil Heights Sewage Pumping Station. The letter provided information on *Curve Lake First Nation's Consultation and Accommodation Standards.* Ongoing consultation with Curve Lake has occurred throughout the project process and is further described in Section 7.4.

7.2 Notice of Public Information Centre

A Notice of Public Information Centre was published on the Town of Innisfil's website and social media accounts in July 2022. The notice was published in the *Innisfil Journal* in the July 7th and 21st, 2022 editions.

The PIC virtual presentation material provided information pertaining to the Municipal Class EA Schedule 'B' planning process and its application to the current project. The scopes of the location of the study area was identified as well as a description of the existing conditions. Six (6) Alternatives to address the identified problem/opportunity statement were presented to the public for their review and input. An Evaluation Table was created that summarized the potential impacts associated with each alternative for each site location. Through this evaluation, a preliminary preferred solution was identified although it was noted that the final Preferred Solution would be selected based on continued evaluation and consideration of comments received during the consultation period. With the PIC being conducted as a pre recorded presentation, it enabled the presentation to be uploaded to the Town of Innisfil's website for interested parties to view at a later date.

Appendix I includes a copy of the Notice of the PIC period, and Appendix J contains a copy of the PIC materials.

7.3 Notice of Completion

The Notice of Completion was posted on the Town of Innisfil's and InnServices' websites on April 3rd, 2025.

In response to the Notice, comments were received from the Ministry of Citizenship and Multiculturalism, and the report has been revised accordingly.

A copy of the Notice of Completion is included in Appendix K.

7.4 Consultation with First Nations

Throughout this Class EA, engagement with the following First Nation (FN) has occurred.

- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Beausoleil First Nation
- Curve Lake First Nation
- Mississaugas of Scugog Island First Nation
- Hiawatha First Nation
- Alderville First Nation

Consultation with the above mention communities is required as outlined in the MECP's letter dated January 28th, 2021.

Additionally, the following First Nations, not specifically listed in the letter, were also consulted during this project to ensure that Treaty Rights were fully protected.

- Huron-Wendat Nation
- Métis Nation of Ontario (MNO)
- Saugeen First Nation
- Chippewas of Nawash Unceded First Nation
- Saugeen Ojibway Nation (as the consultation contact for Saugeen First Nation and Chippewas of Nawash Unceded First Nation).

The Notice of Study Commencement was sent to all the above-mentioned FNs on January 20th, 2022, to inform them about the initiation of this EA. The notice outlined the type of project, provided a brief overview, and included the contact information of the project team.

The Chippewas of Rama First Nation expressed interest in being kept informed and requested to review any reports as the project progresses on January 21st, 2022.

The Huron-Wendat Nation expressed interest in any archaeological studies or fieldwork related to the project on February 9th, 2022.

The Stage 1 Archaeological Assessment Report and Cultural Heritage Report were provided to the Chippewas of Rama First Nation, the Huron-Wendat Nation, and Curve Lake First Nation (CLFN) on May 30, 2022.

Details of the consultation with CLFN are provided in Section 7.4.1.

The Notice of Public Information Center was issued on July 7th, 2022, to provide details about the availability date of the presentation materials and the link to access it. It also included information on the method and timeline for submitting comments.

Public Information Center was held on July 21st, 2022 and the comment deadline for public closed on August 4th, 2022. The preferred alternative solution was provided after public commenting period.

As part of their development plans, the property owner's engineers conducted archaeological assessments on the site, including a Stage 2 Archaeological Assessment. They have agreed to share this report for the purposes of the Class EA. The report was further provided to the Chippewas of Rama First Nation, the Huron-Wendat Nation, and CLFN on February 13th, 2025.

7.4.1 Consultation with Curve Lake First Nation

Throughout this Class EA, engagement with CLFN has occurred. As previously described, multiple teleconference meetings were held with members of Curve Lake First Nation to discuss the project.

Initial introductory meeting held on January 12th, 2022 – A general overview of this class EA and consultation framework were provided to CLFN. CLFN advised they will review all draft reports and provide feedback and recommendations regarding mitigation plans. By the time of meeting, the progress of background studies was presented to CLFN. The geotechnical desktop report was submitted on February 28th, 2022. The Stage 1 Archaeological Report and Cultural Heritage Report were provided on May 5th, 2022. The Environmental Constraints Report was submitted on February 13th, 2023.

Public Information Center was held on July 21st, 2022 and the comment deadline for public closed on August 4th, 2022. The preferred alternative solution was provided after public commenting period.

Consultation meeting held on May 4th, 2022 – CLFN reviewed reports that were provided to date.

Consultation meeting held on June 2nd, 2022 – Reports were reviewed by CLFN. Once the dates of additional field studies are being discusses, Ainley will provide CLFN with the opportunity to join the field review.

CLFN participated in a site visit on July 5th, 2022. Prior to the visit, Ainley provided them with the conceptual drawing for review.

Consultation meeting held on September 23rd, 2022 – This meeting was to present the PIC display boards to CLFN to provide opportunities to comment and ask questions.

CLFN issued a Technical Field Memorandum on September 29th, 2022, addressing the land base and ecology surrounding the proposed SPS and its alternative locations. Additionally, it requires the development of an Environmental Monitoring Plan to ensure cultural integrity during and after the construction phase.

CLFN confirmed on March 5th, 2024 that this EA can proceed to next step (completion stage) if all actions mentioned in previous communications are completed.

7.5 Consultation with Property Owner/Consulting Group

The property at 7131 5th Sideroad, Innisfil, is owned by the Rinomato Development Group, with Pearson Engineering serving as their consulting firm responsible for preliminary servicing requirements for the development. Following the Public Information Centre (PIC), Pearson Engineering raised concerns that the recommended site location (Alternative 2C, in the southwest corner of the property) did not align with their preliminary development plans, which originally placed the pumping station on Alternative 2D (in the southeast corner of the property).

Ainley responded that, based on feedback from PIC#1, Alternative 2D scored poorly from an environmental perspective. However, subsequent coordination with the Lake Simcoe Region

Conservation Authority (LSRCA) revealed minimal concerns about placing the IH SPS 2 at the Alternative 2D site.

Further discussions with the CLFN indicated that the Alternative 2D site could not meet the buffer distance requirements specified by CLFN. Consequently, considerations for accommodations or compensations were recommended.

During a consultation meeting with the property owner's group on October 12th, 2023, the location of the SPS was revised to Alternative 2D to accommodate the business and property owner's needs.

7.6 Summary of Comments

The following Table 4 summarizes all comments received during the EA period. Contact information for all public member comments has been removed.

Table 4 – Comment Summary Table

NO.	RESPONDENT INFORMATION	COMMENTS RECEIVED	RESPONSE / ACTION REQUIRED
AGENCY COMMENTS			
Notice of Commencement – January 2022			
1.	Peter Dorton Senior Project Manager Ministry of Transportation 159 Sir William Hearst Avenue, 7th Floor Toronto, ON M3M 0B7 peter.dorton@ontario.ca	**Comment received via email on January 21, 2022**: "Similar to comments provided earlier this month on SPS 1, the Study Area along 5th SR for Innisfil Heights Sewage Pumping Station 2 looks to be beyond MTO Building & Land Use permit control area, therefore MTO review and approvals will not be required. However, we note that this facility is intended to direct flows to the Lakeshore Wastewater Treatment Plant. Please confirm if there will be associated plans for a Highway 400 crossing, and note that any plans for a sewage main to cross the highway should be shared early in the process with MTO. MTO review and, if acceptable, Encroachment permit approval will be required for any works proposed on highway right - of - way."	**Response provided by Ainley Group January 24, 2022:** "Thank you for reaching out and for your feedback regarding Innsifil Heights Sewage Pumping Station No. 1 and 2. Note that these assessments are for the pumping stations only, therefore, the crossing of Highway 400 is not within the scope of our project."
2.	Chunmei Liu Regional Environmental Planner – Central Region MECP chunmei.liu@ontario.ca	**Comment received via email January 28, 2022:** "The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Town of Innisfil (proponent) has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA). The attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. Further information is provided at the end of the Areas of Interest document relating to recent changes to the *Environmental Assessment Act* through Bill 197, Covid-19 Economic Recovery Act 2020." The letter continued to describe the Crown's duty to consult and provided information on Indigenous communities the proponent is required to consult with as they may be potentially affected by the proposed project. A copy of the full letter and attachments can be found in Appendix L.	No response required.
Notice of Public Information Centre (PIC) – July 2023			
1.	Peter Dorton Senior Project Manager Ministry of Transportation 159 Sir William Hearst Avenue, 7th Floor Toronto, ON M3M 0B7 peter.dorton@ontario.ca	**Comment received via email on August 3, 2022**: "We have reviewed the PIC slides and have no concerns with the preferred location of Sewage Pumping Station 2 at the NE corner of SR5 / 7th Line. This location is beyond MTO Building & Land Use permit control area, therefore MTO review and approvals will not be required. However, we note that this facility is intended to direct flows to the Lakeshore Wastewater Treatment Plant, and that forcemains crossing Hwy 400 at Innisfil Beach Rd. and 6th Line are proposed (p.6 of 22 of the PIC presentation). Any plans for a sewage main to cross Highway 400 should be shared early in the process with MTO. MTO review and, if acceptable, Encroachment permit approval will be required for any works proposed on or across highway right - of - way."	No response required.
Notice of Completion – May 2025			
1.	Jackson Kaufman Heritage Planner	**Comment received via email May 7, 2025:** "Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Completion for the above-referenced project, and for making the Project File Report (PFR) available for review.	The report was revised based on comments.

NO.	RESPONDENT INFORMATION	COMMENTS RECEIVED	RESPONSE / ACTION REQUIRED
	Ministry of Citizenship and Multiculturalism (MCM) jackson.kaufman@ontario.ca	MCMs comments can be found attached, thank you for your patience. Please do not hesitate to contact us if you have any questions or require additional information."	
INDIGENOUS COMMUNITY COMMENTS			
Notice of Commencement – January 2022			
1.	**Sharday James** *Community Consultation Worker, Lands and Membership* **Chippewas of Rama First Nation** shardayj@ramafirstnation.ca	**Comment received via email January 21, 2022:** "Thank you for your email. At this time we have no comments but we ask that you keep us informed and send us any reports as the project moves forward.	**Response provided by Ainley Group March 30, 2022:** "We are following up with the email below regarding InnServices, **Innisfil Heights Sewage Pumping Station 2,** Environmental Assessment. We have completed the study area environmental constraints assessment and Stage 1 archeological assessment. You indicated that you would be interested in receiving them. They are attached for your reference and review. We have published the PIC since the last time we corresponded. The details can be found at the following link: https://innservices.co/infrastructure-upgrades/environmental-assessments/innisfil-heights-sewage-pumping-station-2 Please let us know if you have any comments or questions about any of this information. "
2.	Dominic Ste-Marie Huron Wendat Nation Dominic Ste-Marie Dominic.Sainte-Marie@wendake.ca	**Comment received via email February 9, 2022:** "Thank you for your email. Could you please let us know if any archaeological studies or fieldwork will be necessary as part of this project?" **Comment received via email March 22, 2022:** "My colleague Marie-Sophie (cc'd) will be able to provide a quote and coordinate our participation to this project once we receive the draft AA. Furthermore, we would like participate in upcoming fieldworks if a stage 2 is necessary.	**Response provided by Ainley Group March 22, 2022:** "For the above noted Class EA we are completing Archeological and Built Heritage Resources studies for the project. We have not received a draft report as of yet, and cannot confirm if further archeological assessment (Stage 2) is required. We will provide the draft reports to you once we received them and continue to consult with you. Please let me know if you have any other questions. Thank you." **Response provided by Ainley Group May 30, 2022:** "Attached please find the Stage 1 archeological assessment report and cultural heritage report for the Innisfil Heights sewage pumping station 2 environmental assessment. The Stage 1 report provides the following recommendations: • Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit/pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands; • The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or being previously assessed. 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.

NO.	RESPONDENT INFORMATION	COMMENTS RECEIVED	RESPONSE / ACTION REQUIRED
			The key findings of the Cultural Heritage report are that there are four potential cultural heritage landscapes within the overall study area. Once a preferred alternative or detailed designs are available, the report will be updated with a confirmation of impacts of the undertaking on the cultural heritage resources identified within the study area and recommend mitigation measures. Once we have determined a preferred site alternative, we will provide you with an update regarding recommendations for a Stage 1 Archeological Assessment. If you have any questions, or would like to discuss further please do not hesitate to contact me. ”
Notice of Public Information Centre (PIC) – July 2022			
No comments were received from the Indigenous Communities except for Curve Lake First Nation, whose full consultation records are included in Section 7.4.1.			
Notice of Completion – May 2025			
No comments were received during the Notice of Completion period.			
PUBLIC COMMENTS			
Notice of Commencement – January 2022			
1.	April Cleaves Pearson Engineering Ltd.	**Comment received via email on January 20, 2021**: “We are the civil engineering firm for the Rinomato development at 7131 5th SR. It is my understanding that the landowner’s group has provided preliminary servicing requirements for the development already, however please let us know if more detailed information is needed at this time. Once your team is at the stage of placement of the pump stations, we have also had preliminary discussions with the Town regarding options.”	**Response provided by Ainley Group January 25, 2022:** “Thank you for reaching out to the study team. Please find the response to your email in the attached letter. Please feel free to contact us again if you have additional comments and questions.” A copy of the response letter can be found in Appendix L.
2.	Leslie Pollak	**Comment received via email on January 21, 2021**: “Can you please email me a PDF copy of the notice of Study Commencement. Can you please add my name ad email to the list to receive any and all future updates.”	**Response provided by Ainley Group January 21, 2022:** “Per your request, please find attached, a PDF copy of the Notice of Commencement or Innisfil Heights SPS 2. Also, we will add you to the study’s email list for future notices and information.” Contact list has been updated.
3.	Brad Parker Cortel Group, Greenland International Consulting Ltd.	**Comment received via email on October 24, 2022**: “On behalf of our client, the Cortel Group (‘Cortel’), Greenland International Consulting Ltd. (‘Greenland’) is submitting comments in relation to the above noted project. In November 2019, The Town of Innisfil (‘Town’) announced the development of The Orbit, a community of 150,000 centred around 6th Line and the Metrolinx Corridor. Since then, no update has been made to the 2018 Master Servicing Plan (‘MSP’) to account for the large population increase. We note that the current recommended preferred wastewater solution is being implemented based on the 2018 Master Servicing Plan (‘MSP’) which does not take into account the Orbit Development along 6th Line and its 150,000-occupant capacity. Updates need to be made regarding the	**Response provided by Ainley Group November 28, 2022:** “Regarding the Part II order request, please see the attached letter dated September 1, 2020 from the MECP previously sent to Jim Hartman of Greenland that advises that the Part II order in question has been terminated. InnServices is working with the Town of Innisfil to confirm the “Occupant Capacity” of the Orbit and phasing of the Orbit. We understand discussions are currently ongoing for the Orbit area and an

NO.	RESPONDENT INFORMATION	COMMENTS RECEIVED	RESPONSE / ACTION REQUIRED
		capacities of the sanitary sewer main along 6th Line, Innisfil Heights Sewer Pumping Station 2, and the Lakeshore WPCP prior to the implementation of Pumping Stations upstream of the Orbit. In addition to the above, Greenland has previously noted issues with the 2018 MSP preferred solution, please see attached Part II Order Request (Attachment 1). This Part II order was never resolved and no answers provided. Based on the aforementioned Part II Order and the addition of the Orbit population, the 2018 MSP should be updated to include the additional demand on the Town infrastructure and confirm sewer sizes, alignment and pumping station locations."	Orbit Master Plan is currently underway. Once confirmed by the Town of Innisfil, this information ("Occupancy Capacity", phasing of the Orbit, and the Orbit Master Plan) as well as similar types of confirmed information for other areas of the Town of Innisfil will be included in an update to the 2018 Master Servicing Plan (MSP). The 2022 MSP, which is the update to the 2018 MSP, has just commenced. The 2022 MSP will address new areas and densities not identified in the 2018 MSP, such as RVH South Campus, Orbit secondary lands and update the overall Water & Wastewater servicing requirements for Innisfil up to 2051. At this time our SPS EA's are following the recommended servicing as per the 2018 MSP and Schedule "B" EA requirements for the new Sewage Pumping Stations. Any updates as they come in from the 2022 MSP will be looked at as part of our EA efforts. If you have any questions or require further assistance with this matter, please feel free to contact the undersigned."
Notice of Public Information Centre (PIC) – July 2023			
1.	Martha Koetzle	**Comment received via email on July 13, 2022**: "Can you please tell me the exact location for this sewage plnat and if we can expect an odour from it."	**Response provided by InnServices July 13, 2022:** "Our team is currently in the process of reviewing potential locations within the study area. The Public Information Centre Presentation will be available to view on our website (linked below) as of July 21st at 3:00pm which will present the potential sites being looked at. Innisfil Heights Sewage Pumping Station 2 | InnServices We will add you to our communication list to keep you updated on the project." Contact list has been updated.
2.	April Cleaves Pearson Engineering Ltd.	**Comment received via email on July 26, 2022**: "Is there any information you can provide regarding what the proposed pump stations will look like, size etc.? Wasn't sure if you might have drawings for any of the ones that are further along in the process."	**Response provided by InnServices August 4, 2022:** "With regards to the sewage pumping station size for IH SPS 2, we haven't commenced with preliminary design but can offer the following comments. Based on the EA assumptions, the SPS will service approximately 230 ha of ICI lands. The EA assumption was 20 m3/ha/day. For this area it works out to 53 L/s. There are many factors that can impact the size of the SPS as we move forward with preliminary design, however, we expect that we could be looking at an area of approximately 15m x 15m for the SPS proper." Detailed consultation was included in Section 7.5.
Notice of Completion –			
No comments were received during the Notice of Completion period.			

8. PREFFERED SOLUTION

8.1 Preferred Site Location

Following the completion of the Public Information Centre and the review of all received comments, the preferred alternative location was initially identified at the southwest corner of the property at 7524 10th Sideroad (Alternative 2C). However, after negotiations with the property owner, the final Preferred Solution location was adjusted accordingly.

Alternative 2D – Site Location at southeast corner of 7131 5th Sideroad

The alternative best addresses the need for a new sewage pumping station with limited potential to impact the environment as following aspects:

- Suitability of Elevation and Topography: The location features lower ground elevation and more favorable topography for constructing a SPS.
- Hydraulics: The location is situated at the lowest point in the catchment area to minimize the wetwell depth requirements.
- Conservation of Cultural Heritage Resources: Potential impacts on identified cultural heritage resources have not been identified on the preferred site location (Alternative 2D), reducing the need for additional technical cultural heritage studies. A Stage 1, 2 & 3 AA (PIFs P379-0375-2021 & P379-0382-2021, by Irvin Heritage Inc.) has been carried out which includes the preferred site location. No further archaeological assessment was recommended.
- Impacts to Business/Commercial Properties: The site is located on an agricultural land and has minimal impact on business/commercial properties.
- Capital Cost: The favorable topography results in a shorter wetwell depth, making this location the most cost-effective option.



Figure 11 – Alternative 2D Location and Approximate SPS Footprint

The anticipated timing for next steps includes; property acquisitions and detailed design to be completed within the year 2025, with construction implemented in 2026.

8.2 Proposed SPS Location

Following the selection of the preferred location, an environmental constraints analysis was conducted at 7131 5th Sideroad to identify a suitable placement for the SPS. The final location also considers

discussions with the property owner and traffic considerations, aligning with the preliminary development plan proposed by the property owner.

8.2.1 Environmental Constraints Analysis

Azimuth, on behalf of Ainley Group, has completed a scoped Environment Impact Study (EIS) at 7131 5th Sideroad.

The analysis concludes that environmental conditions are not limiting to the construction of the IH SPS 2. The proposed infrastructure works align with the natural heritage policies of the ESA, County of Simcoe Official Plan, Town of Innisfil Official Plan, and Lake Simcoe Protection Plan. A permit from the Lake Simcoe Region Conservation Authority (LSRCA) under O. Reg. 41/24 may be required before commencing worksite activities.

The works are not expected to adversely affect the ecological functions of Other Wetlands or Candidate Significant Wildlife Habitat, provided appropriate measures are in place. Similarly, no impacts are anticipated on ephemeral, intermittent, or permanent drainage features, open water units, or fish and fish habitat during or after construction.

With compliance to these considerations, the project can proceed without compromising ecological integrity or regulatory requirements.

A copy of the EIS report is included in Appendix D.

8.2.2 Preliminary Site Layout

Figure 12 below illustrates the preliminary layout of the SPS.



Figure 12 – Preliminary Layout of the SPS

9. COST ESTIMATE

Based on the Cost Estimate Classification System (AACE International, 2020), the cost estimate used for the feasibility study is a Class 4 estimate, which considers equipment costs or parametric models, with an expected accuracy range of -30% to +50%.

The cost estimate presented in this Section has been prepared base on the following assumptions:

- Costing of common equipment and construction materials has been based on Ainley's past project experience.
- Structural and architectural cost estimates are based on Ainley's past experience with similar scope projects as detailed Geotechnical investigation is not available at this time.
- A 40% Construction Contingency has been carried. However, considering the size of the project and gaps in information available for existing construction, this may have to be increased. This will be determined at a later design stage.
- A 10% Contractor's Profit has been assumed.
- Costs for Bell/Rogers and other utilities are not included. These costs are unforeseen at this moment and will be paid by the Owner directly.
- No contaminated soils have been assumed on site.
- Estimated construction cost is in 2025 dollars.
- Exclusions:
    - InnServices costs (approvals, SCADA, site investigations, etc.)
    - Engineering Costs
    - Impacts due to inflation and escalation
    - Harmonized Sales Tax (HST)

The total estimated cost for the SPS is $9.3 million.

The SPS will connect to the trunk sewer along Innisfil Beach Road via a forcemain with an approximate length of 1,700m. The estimated cost for the forcemain, including general works, temporary works, removals, restoration, piping and valves, is $5.6 million.

10. MITIGATION

The following sub-sections outline the mitigation measures that are to be included in the development of the detailed design for the implementation of the Preferred Solution. The anticipated approvals and permitting requirements are also described.

10.1 Vegetation

- Vegetation clearing should occur outside of the breeding bird season (generally late April to late July) to prevent nest destruction to comply with the Migratory Birds Convention Act. Winter season, during frozen ground conditions, is the ideal period for tree and vegetation removal if feasible. 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.

- Where feasible, 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.
- A tree compensation ratio of 2:1 is recommended, with planting and restoration efforts focused on rehabilitating natural areas disturbed during construction activities.

10.2 Wetlands

In order to mitigate the potential short and long-term impacts to the wetland complex the following key mitigation and protection measures are proposed for implementation:

- Install environmental protection and erosion control fencing along the limits of the reconstruction area prior to the commencement of construction (includes prior to vegetation removal).
- Prior to work near any type of marsh or removal of marsh vegetation, if construction activities occur within the period of April to July, areas with standing water that may support amphibians are to surveyed by a qualified biologist for the presence of amphibians. If present these are to be relocated to outside of the construction area to suitable habitats.
- Prior to construction works, a qualified ecologist will inspect the work area for the presence of regionally rare plant species (specifically Stiff Marsh Bedstraw and Hoary Sedge) that if present will be transplanted to a suitable location outside the impact zone.
- The Edge Management Plan is to be implemented and the plantings installed as outlined on the Edge Management Plan drawings and details.
- Machinery or equipment will be maintained and refueled within the construction area defined by the ESC measures, and at no time will approach within 30 m of the watercourses or wetland areas.
- Any equipment, stockpiled material or construction material will be stored within the construction area defined by the ESC measures, and in a manner that prevents sediment or deleterious substances from entering any watercourses or wetland areas.
- All work areas are to be effectively isolated from wetland communities and drainage features with appropriate ESC measures in order to ensure that deleterious substances do not enter these areas at any time.

10.3 Groundwater and Surface Water

- 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 measures used by the contractor on all construction should meet guidelines as outlined in Erosion and Sediment Control Guideline for Urban Construction, December 2006 (ESC Guideline), prepared by the Greater Golden Horseshoe Area Conservation Authorities.
- All exposed and newly constructed surfaces should be stabilized using appropriate means in accordance with the characteristics of the exposed soils. These surfaces should be fully

stabilized and re-vegetated with native species as quickly as possible following the completion of the works.

- No sediment, sediment-laden water or deleterious substances are to be discharged into watercourses/drainage features at any time. A response plan for spills will be developed before work commences. This plan will be implemented immediately in the event of a sediment release or spill of a deleterious substance and an emergency spill kit will be kept on site.
- All ESC measures are to be inspected daily including after every rainfall, cleaned, maintained and/or adjusted accordingly to ensure sediment does not enter drainage features at any time.
- Any dewatering (if required) is to be filtered to remove sediment prior to discharging to a well vegetated area at least 30 m from a watercourse.
- Given the proximity of wells to the roads, if construction dewatering is required, affected wells in the vicinity will be identified during detailed design and the development of a monitoring program to predict or confirm actual effects during construction and plan for the replacement of such supplies temporarily as needed.
- Any in-water works during culver replacements should be completed in the appropriate construction timing window. The new culvert will be placed at a slight offset so existing culvert remains functional until new culvert is installed.
- To ensure compliance with CTC-SPP Policy SAL-11 regarding the application of road salt, best management practices will be implemented by InnServices and the Town's Road Operations Staff.

10.4 Species at Risk

- If a SAR is encountered during construction, all works in the immediate area must cease. The Contract Administrator must contact the MECP at SAROntario@ontario.ca. Harassment to SAR should not occur during construction activities.

10.5 Specific Erosion and Sediment Control Measures (ESC)

The LSRCA Requires that the ESC measures by demonstrated on all relevant plans and/or drawings submitted. Further recommendations for the ESC plan include:

- The ESC measures should remain in place and in good working condition for the duration of the project, until landscaping and sodding has stabilized.
- ESC fencing/measures are to be erected as near to the development as possible.
- ESC measures are to be installed prior to beginning work and are maintained in working order throughout all stages of construction activities.
- That ESC fencing be erected to specifications outlined in Ontario Provincial Standard Drawings (OSPD), being at a minimum, a double row of sediment silt fencing consisting of a non-woven geotextile with straw bales staked in between.

10.6 Excess Materials Management

- Activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's document entitled "Rules for Soil Management and Excess Soil Quality Standards" includes both "Soil Rules" and "Excess Soil Standards" which are

incorporated by reference into the excess soil regulation and must be read alongside the regulation.

- All waste generated during construction must be disposed of in accordance with Ministry requirements.

10.7 Archaeological Resources

The Stage 1, 2 & 3 Archaeological Assessment report (under PIF P379-0375-2021 & P379-0382-2021 and included as Appendix F) indicated that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit.

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and; therefore, subject to section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out an archaeological assessment, in compliance with section 48 (1) of the *Ontario Heritage Act*.
- The *Funeral, Burial and Cremation Services Act*, 2002, S.O.2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provision of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.
- Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.

10.8 Built Heritage Resources and Cultural Heritage Landscapes

There is a low potential to impact potential cultural heritage landscapes identified in the Cultural Heritage Report (Appendix G). The following mitigation will assist in avoiding any direct or indirect impacts.

- Staging and construction activities should be suitably planned and undertaken to avoid unintended negative impacts to identified cultural heritage resources. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.
- 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 cultural heritage resources.
- The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted to the Town of Innisfil 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. The final report should be submitted to the Town of Innisfil for records.

10.9 Utilities and Servicing

The utility companies are aware of this project. Communication will continue to occur in anticipation of utility relocation as part of this project. Existing utilities will be considered during design.

10.10 Property Impacts

The following measures will assist in keeping impacts to a minimum:

- Construction shall utilize measures to minimize impacts to local traffic to the extent feasible and to maintain access during construction.
- Entrances are to be kept open except when construction activities are taking place in front of the entrance.
- Property acquisition is required and discussions with the affected property owners will continue and if feasible InnServices will incorporate their suggestions into detailed design.

10.11 Climate Change

10.11.1 Potential Impact and Mitigation Based on Energy Efficiency

As for constructing one (1) sewage pumping station, long-term increased risk to surface flooding is not anticipated. There will be an increase in hydroelectric power requirements to operate the sewage pumping station but the related impacts to climate change are considered to be minimal. Several measures can be considered to improve the energy efficiency of a structure including:

- Select high-performance, energy efficient pumps and optimize pump control
- Use LED lights and motion sensers for lighting

In addition, rating systems targeting at reducing energy usage and meeting climate change targets, such as Leadership in Energy & Environmental Design (LEED) and Envision, can be taken into consideration to improve the energy efficiency during design, construction, and operation and maintenance.

10.11.2 LEED Green Building Rating System

LEED is an internationally recognized green building certification system and standard for all building types and all building phases, which is developed by the U.S. Green Building Council (USGBC).

LEED-certified buildings are critical to addressing climate change and meeting environmental, social and governance goals. The system includes a set of rating systems for the design, construction, operation and maintenance of green buildings, homes, and neighborhoods.

To achieve LEED certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality. Four levels of certification will be assigned to the projects based on the number of points they achieve: Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80+) points.

10.11.3 Envision Sustainable Rating System

Envision is a sustainability framework and rating system that enables a thorough examination of the sustainability and resiliency of all types of civil infrastructure, which is developed by the Institute for

Sustainable Infrastructure (ISI) in collaboration with the Zofnass Program for Sustainable Infrastructure at Harvard University's Graduate School of Design.

The system is designed to help infrastructure stakeholders implement more sustainable, resilient, and equitable projects. Envision helps communities cut green house gas (GHG) emissions, create good-paying "green" jobs, address environmental justice, and meet climate-change targets.

10.11.4 Climate Change Impact and Mitigation

Climate change has the potential to result in increased storm events that can lead to flooding. Climate change concerns generally relate to the increased concentration of greenhouse gases in the atmosphere, which can result in a rise in the global mean surface temperature. Increased temperatures worldwide are creating changes in climate that is resulting in extreme weather events. Reasonable risk reduction measures should be investigated at the detailed design stage to manage the additional challenged presented by climate change.

Stormwater management (Minimize the potential of environmental spill)

- Design new sewage pumping station with an elevated peak instantaneous factor
- Emergency power supply system for critical equipment
- Include the provision of site space for snow storage

Increased mean atmospheric temperature

- Equip the facilities with more robust insulation

10.11.5 LID Stormwater Management Measures

Low Impact Development (LID) is an innovative state-of-the-art approach to managing stormwater by controlling and treating precipitation where it falls, as a resource to be managed and protected rather than a waste.

The MECP document entitled "Low Impact Development Stormwater Management Guidance Manual (2022)" provides information on the benefits of managing rain where it falls and snow melts, including performance guidance on controlling natural systems, and the sustainability of communities.

A LID stormwater management system may include many different types and combinations of LID approach or practice to reduce the volume of stormwater runoff or filters the stormwater runoff on its way to the receiver:

- Rainwater harvesting (roof runoff, prefabricated storage unit, cistern)
- Soakaways, infiltration trenched and chambers (infiltration galleries, French drains, dry well)
- Permeable Pavements (pervious concrete, porous asphalt, permeable interlocking concrete pavers, plastic or concrete grid systems, rubberized granular surfaces)

11. PERMITS AND APPROVALS

During detailed design permits and approvals will need to be acquired from the following agencies:

- Ministry of Environment, Conservation and Parks: During detailed design, the extent and need of the removal will be determined. This would constitute a significant dewatering exercise and a

Permit to Take Water (PTTW) or Environmental Activity and Sector Registry (EASR) registration may be required.

- Ministry of Environment, Conservation and Parks: MECP will issue Environmental Compliance Approvals (ECA) for sewage, air and noise, which will delineate the physical extent of the works being approved and the compliance requirements for effluent quality, odour, and noise as well as outlining monitoring and reporting requirements. ECA applications will require completion of the designs and design reports.
- Ministry of Natural Resources and Forestry (MNRF): MNRF will require application for a permit for any works that affect species at risk, fish or bird habitat, as well as work in or near rivers. Applications will require submission of an Environmental Management Plan that delineates all potential impacts as well as planned mitigations.
- Lake Simcoe Region Conservation Authority (LSRCA): The site is located within the regulated area of LSRCA. As a result, specific approvals need to be obtained from LSRCA in order to proceed with selected site during detailed design. These approvals are essential to ensure compliance with environmental regulations and guidelines set by the conservation authority for projects within their jurisdiction.
- Town of Innisfil: The Town will require application for building permits for any building works including the SPS.
- InnPower: A range of permits and inspection will be required from InnPower involving incoming power, protective systems, and installation compliance.
- Technical Standards and Safety Authority (TSSA): TSSA approval will be required for installation of the diesel generator and any fuel systems.

REFERENCES

InnServices Utilities Inc. (2018). *Innisfil Master Servicing Plan Update.* Innisfil, Ontario

AACE International (2020). *Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industries*

Appendix A

IH SPS 2 Future Flow Technical Memorandum

Innisfil Heights
Schedule 'B' Municipal
Class Environmental Assessment
Sewage Pumping Station 2

Technical Memorandum
Future Flows

FINAL

March 2025

Ainley GROUP CONSULTING ENGINEERS PLANNERS

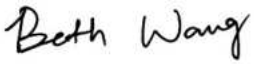
Innisfil Heights
Municipal Class Environmental Assessment

Technical Memorandum
Future Flows

Project No. 121031

Prepared for:
InnServices Utilities Inc.

Prepared By:



Beth Wang, E.I.T.

Reviewed by:



Wendy Smeh, C.E.T., PMP.

Ainley Group
280 Pretty River Pkwy,
Collingwood, ON L9Y 4J5

Phone: (705) 445 - 3451
www.ainleygroup.com

Table of Contents

1.0 Introduction 1

2.0 Objectives 1

3.0 Historical Documents Overview 1

3.1 Innisfil Master Servicing Plan Update in 2018 1

4.0 Wastewater Flow Design Basis 2

4.1 Design Assumptions 2

4.2 Build-out of Proposed Servicing Area 3

5.0 Summary 4

List of Figures

Figure 1 – Innisfil Heights MSP: Alternative 6B 2

Figure 2 – Planned Development Areas Connected to IH SPS 2 3

List of Tables

Table 1 – Design Criteria 2

Table 2 – Wastewater Flows from Proposed Servicing Area 4

1.0 Introduction

This Technical Memorandum has been prepared in support of the Innisfil Heights Schedule B Municipal Class Environmental Assessment (Class EA). The 2018 Master Servicing Plan (MSP) identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of new sewage pumping stations (SPS) to service the Innisfil Heights economic district.

This technical memorandum addresses the new Innisfil Heights Sewage Pumping Station 2 (IH SPS 2), to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil. IH SPS 2 will receive flows from the Innisfil Heights economic district and the future IH SPS 4 (which is outside the scope of this EA but included in the flow calculations) and direct them to the Lakeshore Wastewater Treatment Plant.

2.0 Objectives

The objectives of this Technical Memorandum are as follows:

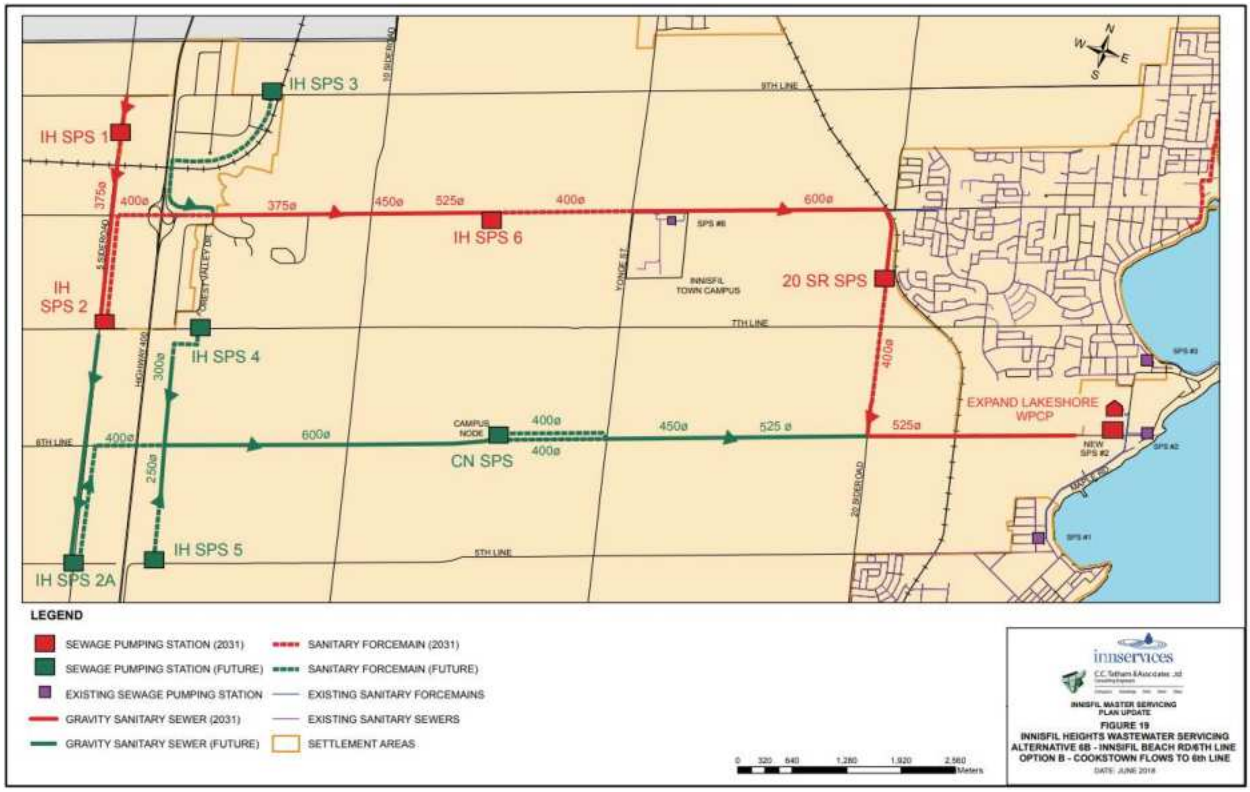
- Review historical documentation,
- Project future wastewater flows from servicing area to IH SPS 2 and to the proposed trunk sewer on Innisfil Beach Road.

3.0 Historical Documents Overview

3.1 Innisfil Master Servicing Plan Update in 2018

As part of the 2018 MSP (completed by C.C. Tatham & Associates Ltd.), various alternatives were examined in order to provide servicing for the first phase of the Innisfil Heights economic district expansion, an area designated as a Strategic Settlement Employment Area. In order to promote, facilitate and maximize the planned expansion of this area, the MSP identified that a municipal sanitary sewage collection system is required. The MSP identified “Alternative 6, Option B” as the preferred option. Alternative 6 establishes a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road and 20th Sideroad for the first phase of development up to year 2031. Several sewage pumping stations were identified along the sewer route including the new IH SPS 2.

Figure 1 below shows the sanitary collection system provide future servicing needs recommended in MSP.



*Map from 2018 Innisfil Master Servicing Plan Upgrade

Figure 1 – Innisfil Heights MSP: Alternative 6B

4.0 Wastewater Flow Design Basis

4.1 Design Assumptions

Table 1 outlines the design criteria used to generate the estimated average daily flow for new residential, commercial and industrial development as well as inflow and infiltration from development in Town of Innisfil.

Table 1 – Design Criteria

Description	Rate
Population Density	2.52 persons per unit
Residential Average Flow (Incl. Average I&I)	325 L/c/d
Residential Peak Domestic Flow	275 L/c/d
Residential Peak Flow (Incl. Peak I&I)	400 L/c/d
Commercial and Industrial Flow (Incl. Average I&I)	10 m3/ha/d
Peak Commercial and Industrial Flow (Incl. Peak I&I)	20 m3/ha/d

4.2 Build-out of Proposed Servicing Area

The build-out of the servicing area for IH SPS 2 is defined as the complete development of the proposed lands to meet the short- and long-term needs of the Innisfil Heights economic area. Additionally, IH SPS 4 (IH SPS 2A shown in Figure 1) will manage the flow, directing it to the trunk sewer on Innisfil Beach Road via IH SPS 2. IH SPS 4 is a proposed potential station that may be constructed in the future but is outside the scope of this EA.

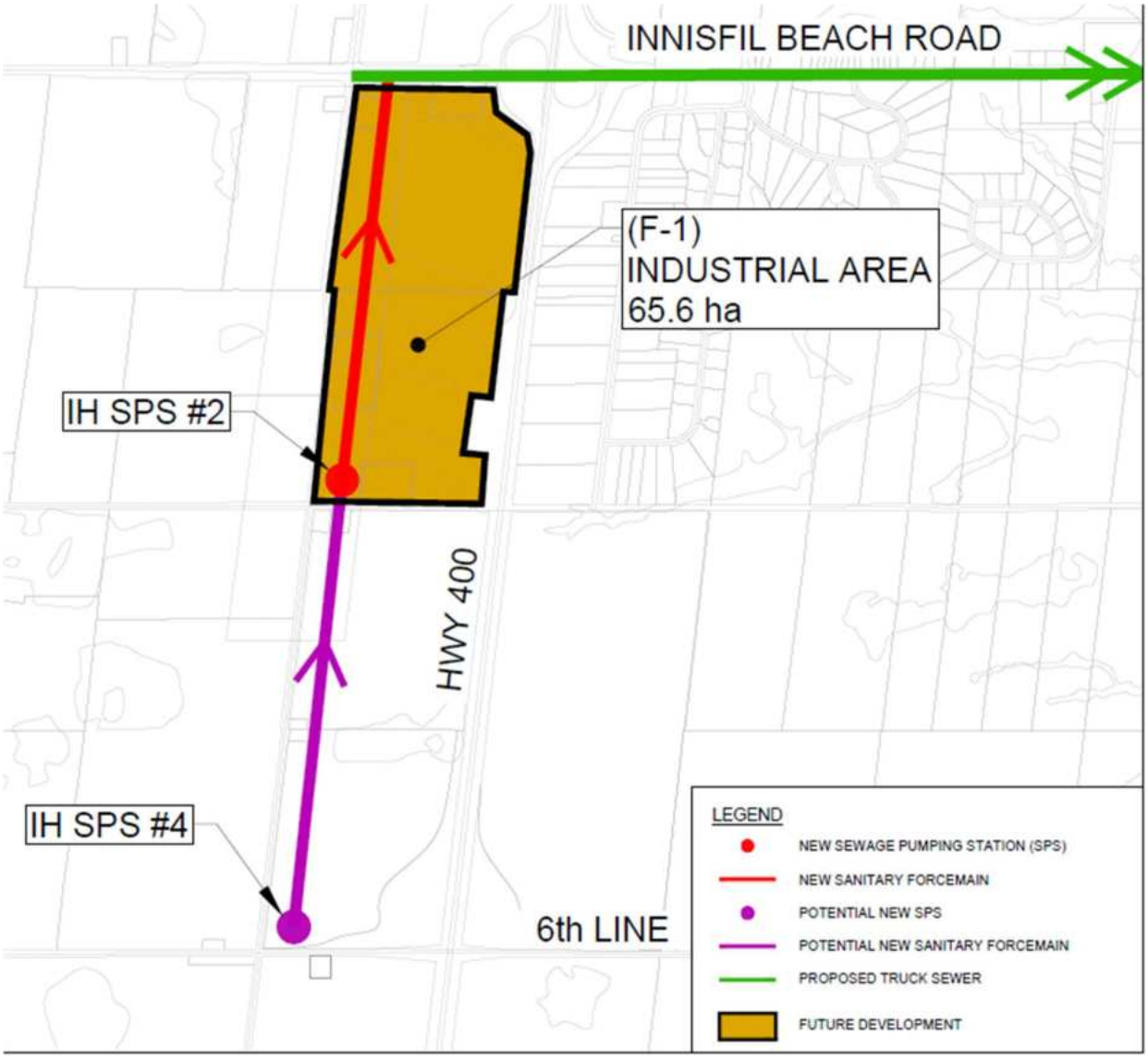


Figure 2 – Planned Development Areas Connected to IH SPS 2

The proposed construction location of IH SPS 2 is at the Southwest corner of 7131 5th Sideroad.

Flow contributions from commercial/industrial growth areas are calculated based on the design criteria provided in Table 1 above. The growth areas considered within the analysis are listed in Table 2 and are reflected in Figure 2.

Industrial ADF estimates are calculated on the following basis:

$$ADF = Area * Commercial\ and\ Industrial\ Design\ Flow$$

Industrial Peak Wet Weather Flow estimates are calculated on the following basis:

$$PWWF = Area * Peak\ Commercial\ and\ Industrial\ Design\ Flow$$

Table 2 – Wastewater Flows from Proposed Servicing Area

Identification	Designation	Area (Ha)	ADF Estimate (L/s)	Peak Wet Weather Flow Estimate (L/s)
F-1	Industrial	65.6	7.6	15.2
From IH SPS 4[1]	-	-	5.6	11.3
Total		**65.6**	**13.2**	**26.5**

[1] Flow provided by Master Servicing Plan project team

IH SPS 2 will service 65.6 hectares of industrial land and receive flow from IH SPS 4. According to the design criteria provided in Table 2, the total average daily flow of 13.2 L/s and the total peak wet weather flow of 26.5 L/s will be directed to the proposed IH SPS 2.

It is important to note that peak wet weather flows are typically 3.5 to 4.5 times average day flows. Based on the Town's design criteria, the peak wet weather flows shall be 2 times average daily flows.

5.0 Summary

- IH SPS 2 will service 65.6 hectares of industrial land and receive flow from IH SPS 4;
- The ADF contributes to IH SPS 2 is 13.2 L/s and the peak wet weather flow is 26.5 L/s.

Appendix B

Geotechnical and Hydrogeological Background Conditions Report

December 17, 2021

Ainley & Associates Limited
550 Welham Road
Barrie, Ontario
L4N 8Z7

Attn: Wendy Smeh, C.E.T., PMP

RE: Geotechnical & Hydrogeological Background Conditions Report
Innisfil Heights Sewage Pumping Station 2
5th Sideroad from Innisfil Beach Road to South of 7th Line
Project No. 2103505

GEI Consultants (GEI) was retained by Ainley & Associates Limited (Ainley) to complete geotechnical and hydrogeological reports discussing the background site conditions for five (5) potential Sewage Pumping Stations (SPS) in Innisfil, Ontario. The work is being completed as part of a Municipal Class Environmental Assessment and preliminary design for the Sewage Pumping Stations being carried out by Ainley. Each SPS study area covers a large footprint and the exact SPS locations have not been selected at this time. An overall site plan showing each study area is included in Enclosure 1.

The background reports by GEI review publicly available sources of subsurface information, surficial geology and bedrock mapping, and local experience about nearby soil and groundwater conditions to discuss geotechnical and hydrogeological engineering constraints for each SPS study area. These background reports will help the design team select the best location for the SPS structure within each area. Once the locations are selected, GEI will advance one (1) borehole with a monitoring well installation in each proposed SPS location and provide preliminary geotechnical and hydrogeological design reports.

The current report contains the results of the background review and provides engineering discussion for IH SPS 2, located along 5th Side Road generally from Innisfil Beach Road to 350 metres south of 7th Line. The total length of IH SPS 2 is approximately 1.7 km and extends about 150 to 300 metres east and west of 5th Side Road. A site plan showing the IH SPS 2 study area is in Enclosure 1. The background reports for the other SPS study areas are included under separate covers.

1. BACKGROUND REVIEW

The IH SPS 2 study area is located along 5th Side Road generally from Innisfil Beach Road to 350 metres south of 7th Line. A site plan showing the IH SPS 2 study area is in Enclosure 1.

Existing subsurface investigations, geotechnical reports, or hydrogeological reports were not provided for the study area from the client. An overview of the subsurface conditions expected to be encountered on site were established using a range of publicly available information and information from GEI projects near the study area, summarized below.

1.1. Physiology and Geology Mapping

Surficial geology mapping from the Ontario Geological Survey (OGS) was reviewed and is provided in Enclosure 2. The mapping indicates that approximately the northern 350 metres of the study area is underlain by mostly of sandy silt to silty sand glacial till. South of this area to the intersection of 7th Line and 5th Side Road, the study area is underlain by a combination of glaciolacustrine deposits of cohesionless sands, organics deposits, sandy silt to silty sand glacial till, and ice-contact stratified deposits of sand, silt, clay, and glacial till. The southmost extent of the study area is shown to consist of sandy silt to silty sand glacial till. A small area may contain organic deposits at grade near the middle of the site, associated with a potential wetland area.

The study area is within the physiographic region known as the Peterborough Drumlin Field (Chapman and Putnam, 1984) which is dominated by drumlinized till plains.

At depth, the study area is underlain by bedrock of the Lindsay Formation (Simcoe Group), which consists primarily of limestone. Drift thickness mapping from the Ontario Division of Mines (1974) indicates bedrock is deeper than 150 metres below grade in the area.

Geotechnical boreholes available on a database from the Ministry of Energy, Northern Development and Mines (MENDM) were reviewed. However, no boreholes were found within or around the study area.

1.2. MECP Water Well Records and PTTW Mapping

Ministry of Environment, Conservation and Parks (MECP) water well records were reviewed for the site and surrounding area. Numerous well records were found in the area, but 13 representative well records were selected and are included in Enclosure 3 with their locations also shown in Enclosure 3. Five (5) wells were completed prior to 1970s, three (3) completed during the 1970s, two (2) during the 1980s, and three (3) after 2010. The wells were typically installed for domestic, farm or commercial use. The stratigraphic descriptions within the MECP well records are typically inaccurate due to the methodology in which they are determined (observations of cuttings and no consistency between descriptions of soil between different drillers). Though this is the case, an overall sense of the stratigraphy can still be determined.

The well records indicate that the northern and middle sections of the study area will consist of sand deposits at grade, or “clay” deposits (likely glacial till) underlain by sands. The southernmost part of the site may consist of thicker glacial till deposits at grade, underlain by sands. Unstabilized water levels were noted to be about 5 metres below grade or deeper on the well records. The wells were typically screened 13 metres below grade or deeper.

The online MECP Permit to Take Water (PTTW) database shows there are no active PTTWs within the study area. The nearest permits are at Highway 400 and Innisfil Beach Road (about 400 metres east / northeast of the site), and consist of the following:

- Four (4) PTTWs – Construction dewatering for groundwater and surface water. Water taking rates range from 65,000 L/day to 640,000 L/day.
- Two (2) PTTWs – Municipal water supply. Both permits allow up to about 3 million L/day of groundwater for the Town of Innisfil water supply.

Another active permit is located at Highway 400, about 500 metres northeast of 5th Sideroad and 7th Line. The PTTW allows water taking of up to almost 635,000 L/day for groundwater and surface water for construction dewatering.

1.3. Simcoe County Mapping

Online mapping from Simcoe County was reviewed for the study area and selected maps are provided in Enclosure 4.

Simcoe mapping provides topography mapping with 2 metre contour intervals. The study area has rolling topography and varies from approximately Elev. 306 to 298 metres. The mapping indicates there are two small unevaluated wetlands to the east and west of 5th Sideroad near the middle of the study area. A stream flows east from 5th Sideroad, just north of 7th Line.

The study area is generally not located within a Significant Groundwater Recharge Area. The nearest Wellhead Protection Area is about 250 metres northeast of the study area and is associated with the Town of Innisfil municipal drinking water wells. A Highly Vulnerable Aquifer underlies almost the whole site except for a small corner near the northeast site limits.

1.4. MTO Boreholes

The Ontario Ministry of Transportation (MTO) Foundation Library online database was searched for any MTO geotechnical reports and boreholes near the study area. The nearest geotechnical reports were completed in 2002, 2017, and 2020 for MTO work near the Innisfil Beach Road Overpass at Highway 400 and Innisfil Beach Road, about 400 metres east of the study area. Selected boreholes advanced in 2000 and 2019 as part of these investigation are provided in Enclosure 5.

The boreholes from 2000 were advanced to a maximum depth of 10.8 metres and encountered hard clayey and sandy silt glacial till. A monitoring well was installed at the bottom of the deeper

borehole and groundwater was measured at 7.7 metres below grade (Elev. 298 metres) on March 15, 2001.

The 2019 boreholes were advanced to the north and south of the overpass along Highway 400. The boreholes extended to depths of approximately 10 to 14 metres below grade and primarily encountered very dense deposits of cohesionless silty sand glacial till. The glacial till was interbedded with cohesionless and wet deposits of wet sands and silts in some locations, and was also underlain by very dense and wet sands in some locations at 4 to 7 metres below grade. It appears that the sand deposits were shallower just north of the overpass, but deeper to the south and further north from the overpass. Monitoring wells were installed in selected boreholes and the stabilized water levels were measured at 4.5 to 7 metres below grade (Elev. 300 to 295 metres) in April of 2020.

In March of 2018, an MTO borehole investigation was conducted approximately 1 km southeast of the site. The boreholes were advanced to depths of up to 29 metres below grade and typically encountered very stiff to hard clayey silt glacial till deposits with some wet sand and silt interbeds.

1.5. GEI Boreholes

GEI completed a project in 2021 on the intersections of Forest Valley Drive and Commerce Park Drive, approximately 800 metres east of the study area. Geotechnical boreholes were advanced to a maximum depth of 5.0 metres below grade during the investigation and encountered cohesionless deposits of silty sand, sand, fine sand, silt, and sandy silt glacial till. Monitoring wells were installed in each borehole and remained dry.

2. GEOTECHNICAL AND HYDROGEOLOGICAL CONSIDERATIONS

Preliminary design drawings or other information for the SPS structures are not available. It is expected that the SPS structure will consist of a wet well extending approximately 9 to 10 metres below grade, a small on-grade structure or pump house, and various pipes and manholes.

The following should be considered for the two small unevaluated wetlands to the east and west of 5th Sideroad near the middle of the study area:

- Thicker organic deposits are expected at grade. Organic deposits are weak and often create access or bearing issues for drilling and construction equipment.
- Organics are not suitable for the support of foundations. Deeper foundations may be required for any on-grade structures built as part of the SPS.
- A shoring system may be required to support the excavation for the wet well. If the shoring system is supported using tie-backs or anchors, they may need to extend deeper below grade below any thicker organic zones.
- Wetland areas often indicate that groundwater is near or at the ground surface (or above grade) which has implications for construction access, and for dewatering to construct the wet well or below grade structures.

- For these reasons, it is recommended IH SPS 2 be located outside of the wetland areas.

The following considerations and recommendations are derived from the surficial geology mapping, MTO boreholes, GEI boreholes, and MECP well records:

- Glacial Till Deposits:
    - Based on the subsurface conditions encountered near the study area, it is expected that the glacial till deposits will be either cohesionless and compact to very dense or cohesive and very stiff to hard. The glacial till is likely competent / favourable for the support of buildings, structures, construction and drilling equipment, and for support of shoring wall tie-backs or anchors.
    - Glacial till deposits are well graded and laboratory testing the from the nearby MTO boreholes indicate a relatively high percentage of fines. The glacial till is expected to be less permeable than the sand deposits, which can significantly reduce water taking rates and potential complications during construction dewatering.
    - The lower permeability will reduce the dewatering radius of influence which reduces the potential impacts to nearby surface water features, drinking water wells, or settlement of nearby land.
    - An excavation made fully within glacial till has a reduced potential to require a PTTW from the MECP (i.e. less than 400,000 L/day of pumping).
    - Cobbles and boulders may be embedded within the deposits. This has a potential to interfere with caisson drill rigs (e.g. for shoring wall installation) or during excavations and would need to be addressed in construction contracts.
    - There is a reduced potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
    - Glacial till is considered the most favourable soil type for the SPS construction.
- Cohesionless Sand Deposits (Alluvial or Glaciolacustrine):
    - It is expected that the sand deposits encountered on site, either from grade or below the glacial till deposits, will be competent for the support of buildings, structures, construction access and drilling equipment, and for support of shoring wall tie-backs or anchors.
    - The major consideration for the sand deposits is groundwater control and constructability. Depending on the grain size distribution and percentage of fines, higher groundwater flow rates are expected for excavations made into the sands.
    - Higher flow rates may require a more robust dewatering system and increases the potential for a PTTW from the MECP. The dewatering radius of influence will also be higher in the sands which has an increased potential to impact nearby surface water features, drinking water wells, or settlement of nearby land.
    - There is an increased potential for temporary cased holes or drilling mud to install caisson piles for shoring walls or for augered holes for tie-backs.
    - There may be cobble or gravel zones within the sands that can increase the difficulty of excavation or caisson installation for shoring walls.

Based on this preliminary review, the southernmost extent of the IH SPS 2 study area is expected to be the best location from geotechnical and hydrogeological engineering perspectives, for the following reasons:

- There appears to be the highest probability for deeper glacial till deposits in this area based on the geology mapping, MECP well records and MTO boreholes. Sand deposits may still be encountered underlying the glacial till.
- There are some nearby houses and farms but there is also vacant land that may facilitate open cut excavations instead of shoring systems. The thicker glacial till deposits typically undergo less dewatering related settlement, reducing potential impacts to the structures.
- There are nearby domestic wells but they are typically screened at depths of 13 metres below grade or deeper (below the expected wet well depth), reducing potential impacts from construction dewatering.
- The area is furthest from the Wellhead Protection Area in the northeast.
- This southern area is noted to be close to / within a “future strategic development” space shown on the study area plan provided from the client (included in Enclosure 1).

The northern end of the study area is less preferred. It is expected that wet sand deposits will be encountered at grade, there are more nearby well records, and the area is closest to the Wellhead Protection Area.

The middle section of the study area near the wetlands is the least preferred due to potential for organic deposits, a higher groundwater table, and potential dewatering impacts on the wetlands. There is also a stream that flows east, just north of 7th Line that could be impacted by dewatering.

3. CONCLUSION

We trust this information is sufficient for your present purposes. Should you have any questions concerning the above, or can be of any further assistance, please do not hesitate to contact the undersigned.

Yours truly,
GEI Consultants

Prepared By:



Russell Wiginton, P.Eng.
Senior Geotechnical Engineer

Reviewed By:



Alexander Winkelmann, P.Eng.
Geotechnical and Earth Sciences Manager

Enclosures (5)

Study Area Locations
Surficial Geology Mapping
MECP Well Record Locations and Well Records
Simcoe County Maps
MTO Boreholes and Borehole Location Plans

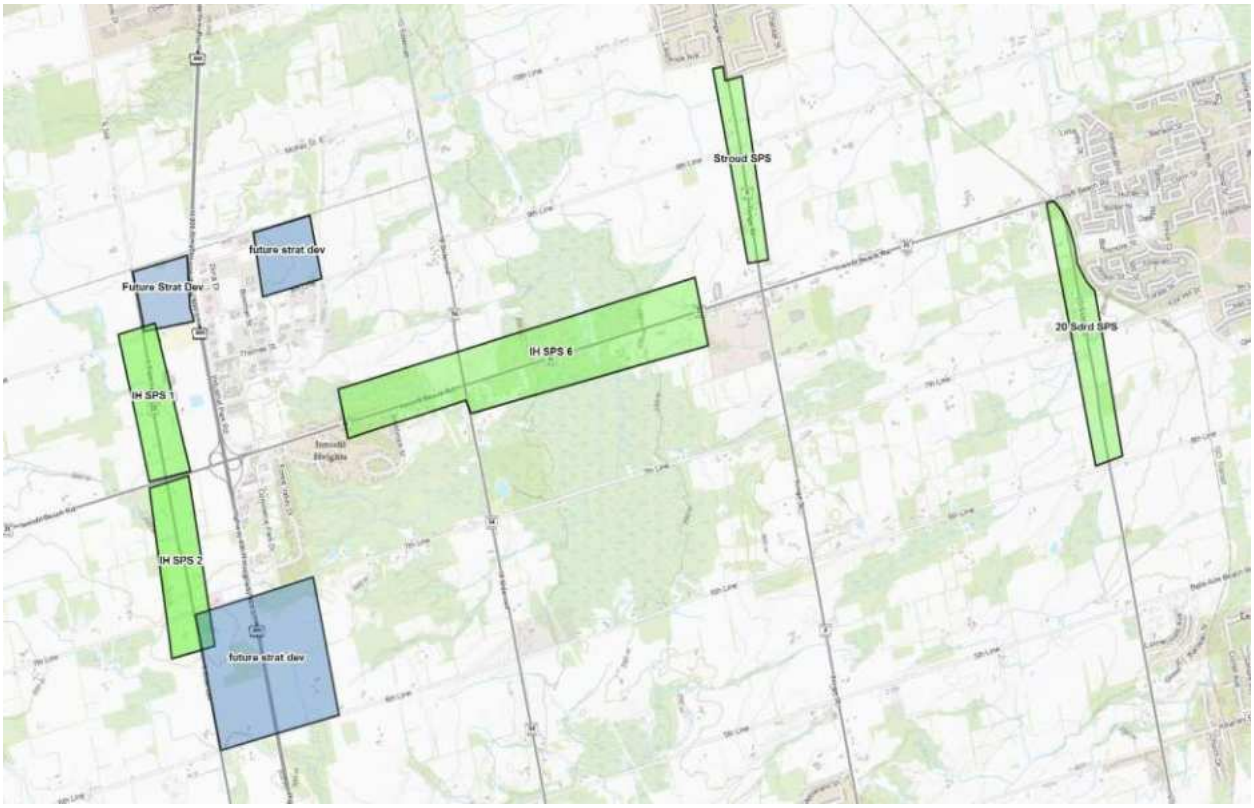
ENCLOSURE 1

Study Area Maps

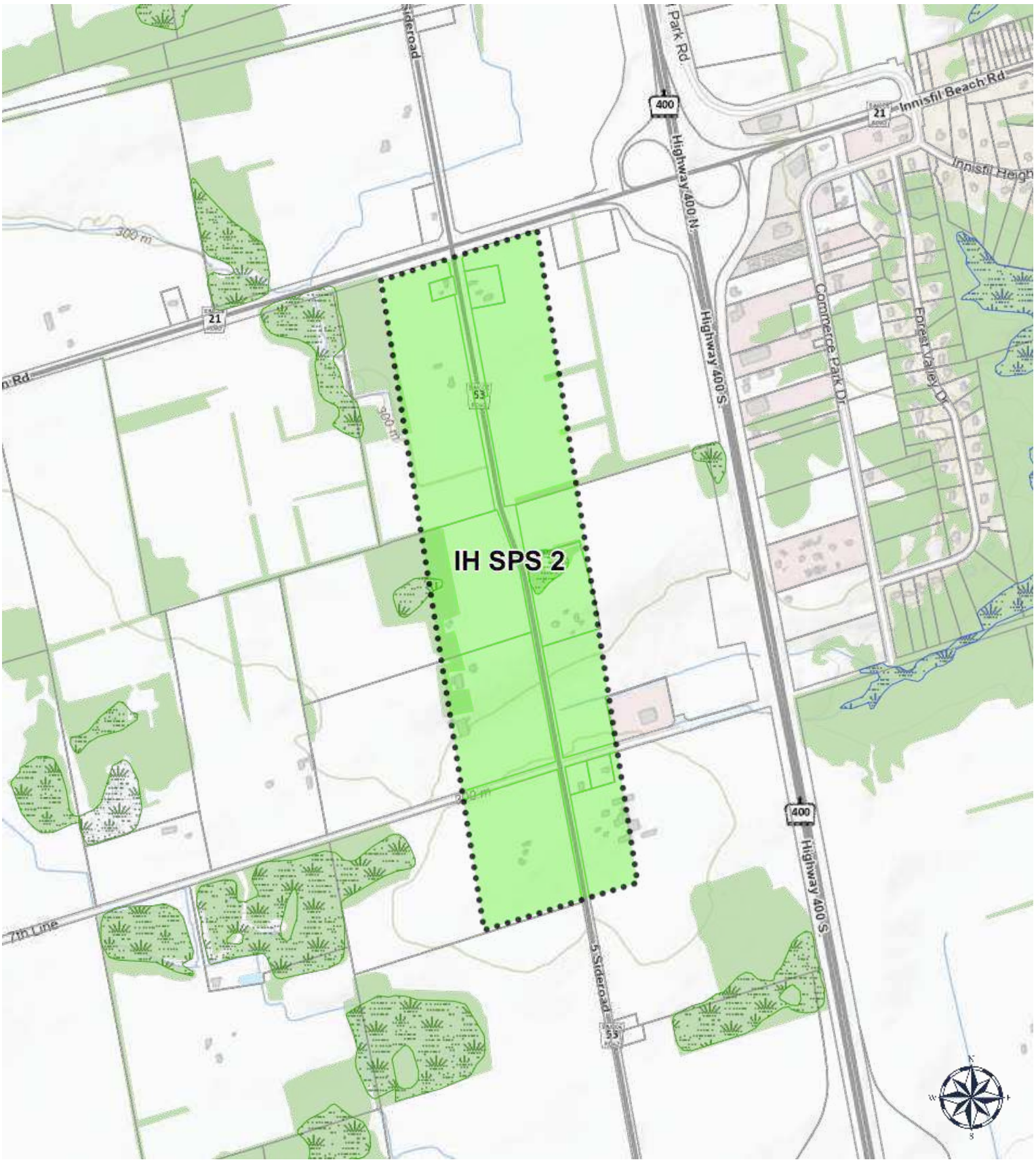
IH SPS 2



OVERALL PLAN



IH SPS 2 Study Area



This map, either in whole or in part, may not be reproduced without the written authority from© The Corporation of the County of Simcoe. This map is intended for personal use, has been produced using data from a variety of sources and may not be current or accurate. Produced (in part) under license from: © Her Majesty the Queen in Right of Canada, Department of Natural Resources: © Queens Printer, Ontario Ministry of Natural Resources: © Teranet

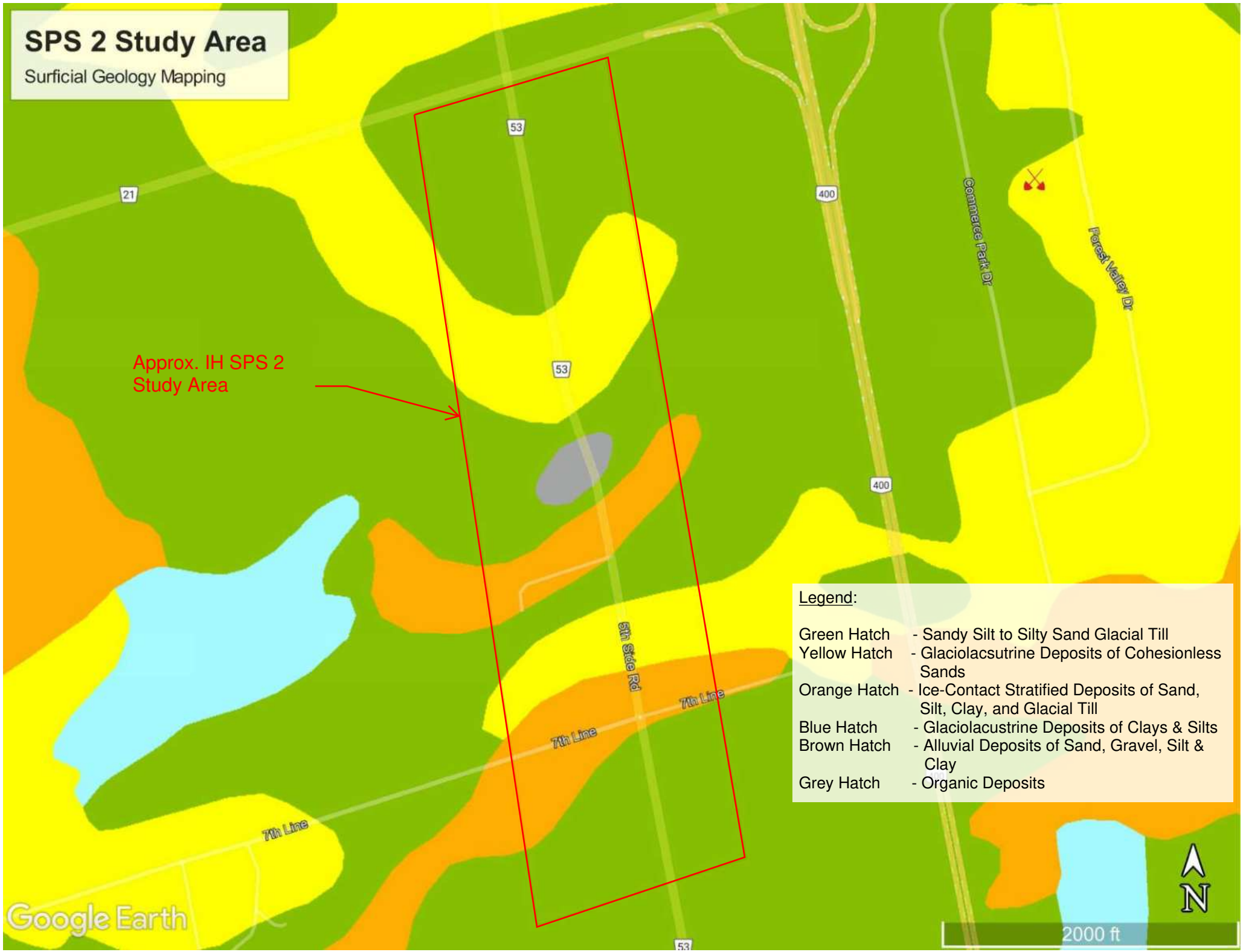
0 200 400 600m

1 : 18,056

Nov 29, 2021

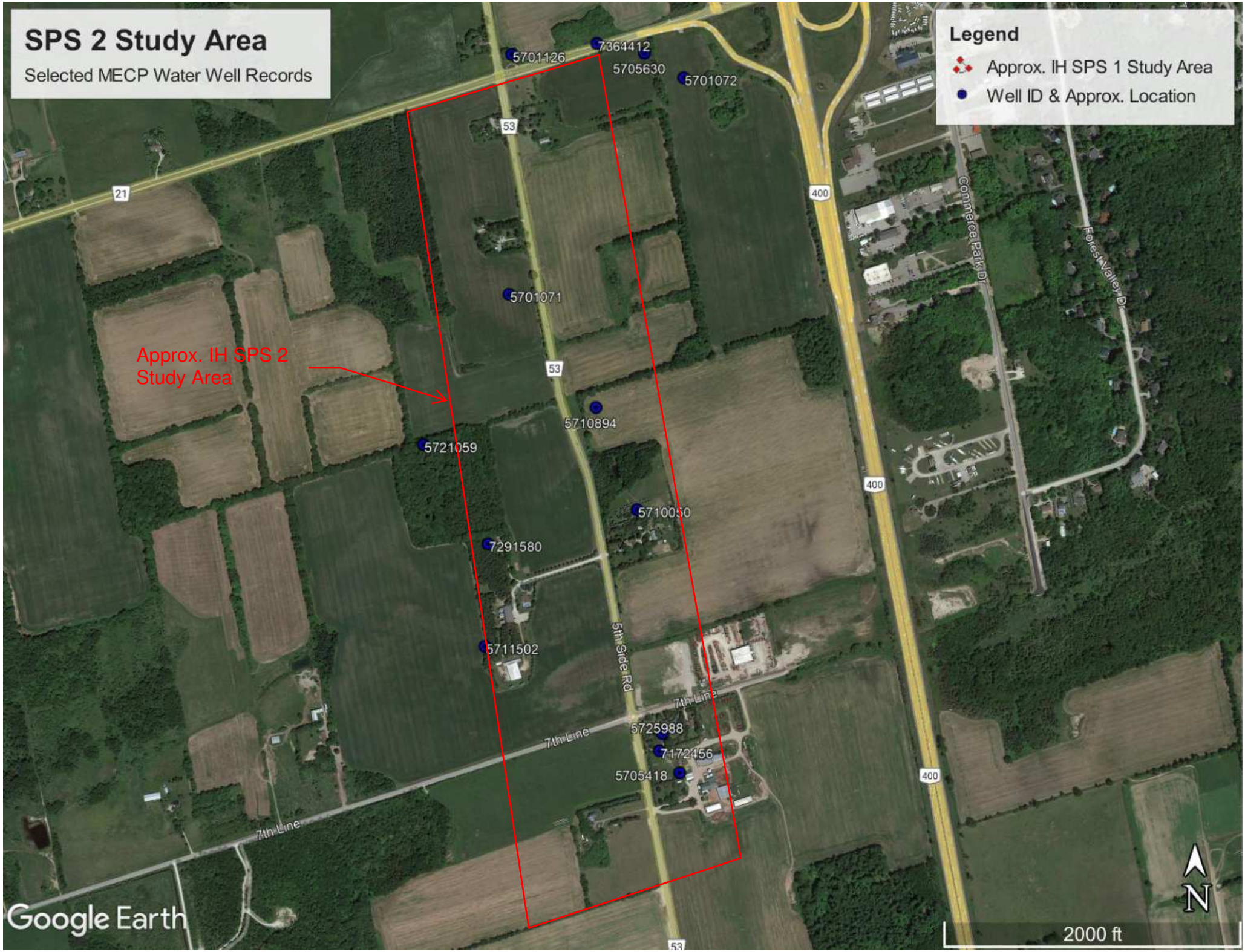
ENCLOSURE 2

Surficial Geology Mapping


SPS 2 Study Area
Surficial Geology Mapping
Approx. IH SPS 2 Study Area
53
21
400
Commerce Park Dr
Forest Valley Dr
5th Side Rd
7th Line
7th Line
7th Line
Legend:
Green Hatch - Sandy Silt to Silty Sand Glacial Till
Yellow Hatch - Glaciolacsutrine Deposits of Cohesionless Sands
Orange Hatch - Ice-Contact Stratified Deposits of Sand, Silt, Clay, and Glacial Till
Blue Hatch - Glaciolacustrine Deposits of Clays & Silts
Brown Hatch - Alluvial Deposits of Sand, Gravel, Silt & Clay
Grey Hatch - Organic Deposits
N
2000 ft
Google Earth

ENCLOSURE 3

MECP Well Record Locations and Well Records


SPS 2 Study Area
Selected MECP Water Well Records
Legend
Approx. IH SPS 1 Study Area
Well ID & Approx. Location
5701126
7364412
5705630
5701072
5701071
Approx. IH SPS 2
Study Area
5710894
5721059
5710050
7291580
5711502
5725988
7172456
5705418
5th Side Rd
7th Line
7th Line
7th Line
Commerce Park Dr
Forest Valley Dr
21
53
53
53
400
400
400
Google Earth
N
2000 ft

3B 74

UTM 17 | 604777 E

15 | 4903527 N

Elev. 15 | 01915

Basin 21

WATER WELL RECORD

The Ontario Water Resources Commission Act

WATER RESOURCES DIVISION
AUG 29 1967
ONTARIO WATER RESOURCES COMMISSION

County or District Simcoe

Township, Village, Town or City INNISFIL

Con. 7 Lot 5

Date completed 12 (day) — 4 (month) — 1967 (year)

Owner [redacted]
(print in block letters)

Address 100 CROSBURN AVE APT. 414 TORONTO 6. ONTARIO

Casing and Screen Record

Inside diameter of casing 6 1/4

Total length of casing 66 ft

Type of screen Johnson S.S. Slot 14

Length of screen 3 ft.

Depth to top of screen 66 ft

Diameter of finished hole 6 1/4

Pumping Test

Static level 21 ft.

Test-pumping rate 8 G.P.M.

Pumping level 60 ft.

Duration of test pumping 2 1/2 hrs.

Water clear or cloudy at end of test clear

Recommended pumping rate 8 G.P.M.

with pump setting of 60 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Top soil	0	1		
Yellow sand	1	6		
Sandy gravel	6	25		
Sandy gravel and Brown Clay.	25	66.		
Yellow sand.	66	69	66-69	fresh.
fine grey sand.	69	72.		

For what purpose(s) is the water to be used? House.

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm Henry Hammers. Well Drilling Contractor

Address RR #3. Barrie. Ont.

Licence Number 2570.

Name of Driller or Borer John VanDerMeulen.

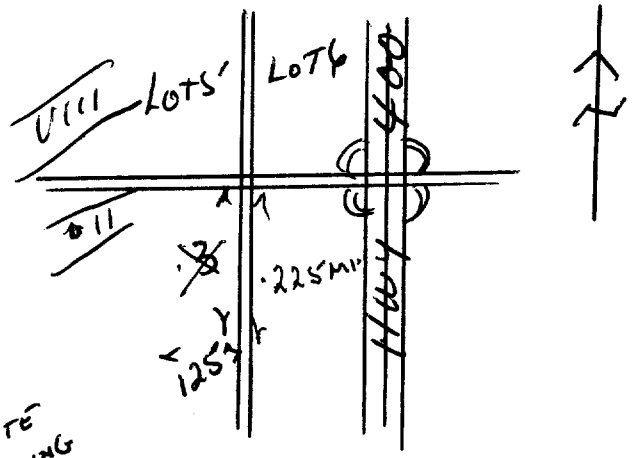
Address RR #1, Barrie. Ont.

Date April 17 '67

Henry Hammers.
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



WHITE AL. SIDING NEW HOUSE

Form 7 15M-60-4138

OWRC COPY

CSS.S8

UTM 17Z 610515/4610E
C 15 R 4949 0 3 9 7 6 N

Ele. 0 5 R 6 1 0 0 0 1

Basin 22 Thomson

County or District ...

Con. VII Lot 6

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
MAY 25 1965
ONTARIO WATER RESOURCES COMMISSION

57 No 1072

Township, Village, Town or City Innisfil

Date completed 24 (day) Mar. (month) 1965 (year)

[redacted] ress RR#1 Thornton

Casing and Screen Record

Inside diameter of casing 30 in

Total length of casing 46'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 36 in

Pumping Test

Static level 30 ft.

Test-pumping rate 2 G.P.M.

Pumping level

Duration of test pumping

Water clear or cloudy at end of test Clear.

Recommended pumping rate 2 G.P.M.

with pump setting of 43' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Top soil	0	2		
Clay	2	24	30 ft.	Fresh.
Fine sand	24	46		

For what purpose(s) is the water to be used? Farm

Is well on upland, in valley, or on hillside? upland.

Drilling or Boring Firm Roth Well Digging

Address RR#4 Cookstown

Licence Number 61

Name of Driller or Borer E. Roth.

Address Same.

Date Mar. 24/65

E. Roth.

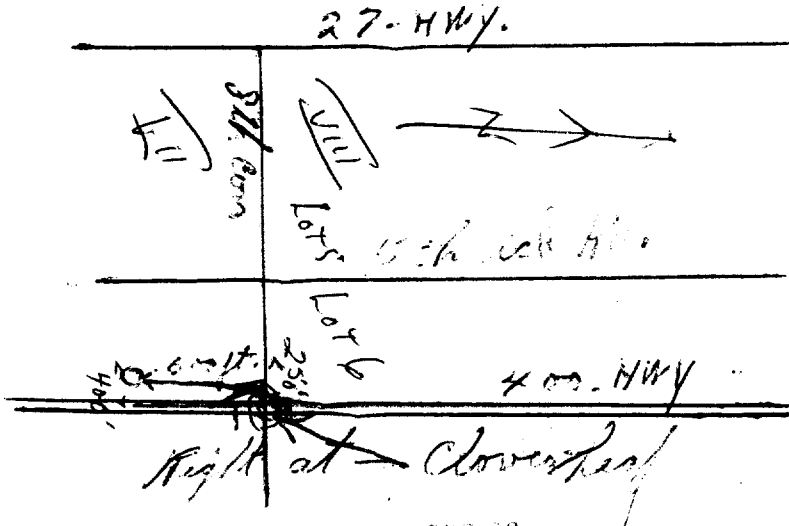
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.53

UTM 17 Z 6047714 E
R 4904008 N
Elev. R 10100
Basin 22

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
57 No. 1126
ONTARIO WATER RESOURCES COMMISSION

County or District Simcoe
Township, Village, Town or City Innisfil
Con. 8 Lot 6
Date completed 19 (day) Oct. (month) 1965 (year)
[redacted] dress RR#1, Thornton

Casing and Screen Record

Inside diameter of casing 30
Total length of casing 45 feet
Type of screen Tubular Well
Length of screen
Depth to top of screen
Diameter of finished hole 36in

Pumping Test

Static level ~~35~~ 25
Test-pumping rate 2 G.P.M.
Pumping level —
Duration of test pumping —
Water clear or cloudy at end of test CLEAR
Recommended pumping rate 2 G.P.M.
with pump setting of 43 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
[redacted] Clay	0	10	34	
Sand	10	45		Fresh

For what purpose(s) is the water to be used? Home
Is well on upland, in valley, or on hillside? upland
Drilling or Boring Firm Bath Well Drilling
Address RR#1 Coulson
Licence Number 61
Name of Driller or Borer W. Bath
Address Lisle
Date 19 Oct. 1965

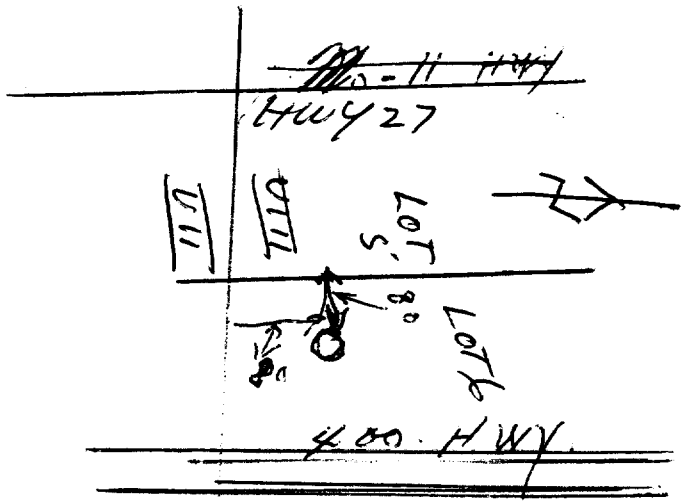
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

UTM 17 605150
5 R 4902550
Dev. 5 R 0000
Basin 22

CODED
Con VI
Lot 6

5705418
3 9

C.B.

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Simcoe
Township, ~~Village, Town or City~~ Innisfil
Con. ~~6~~ VI Lot 6
Date completed 26 (day) April (month) 68 (year)
[redacted] dress RR#1 Thornton

Casing and Screen Record

Inside diameter of casing 30 in
Total length of casing 45
Type of screen well tile
Length of screen —
Depth to top of screen —
Diameter of finished hole 30"

Pumping Test

Static level 12 ft.
~~Test pumping~~ Recovery rate 1½ G.P.M.
Pumping level —
Duration of test pumping —
Water clear or cloudy at end of test —
Recommended pumping rate 2 G.P.M.
with pump setting of 42 ft feet below ground surface

Well Log

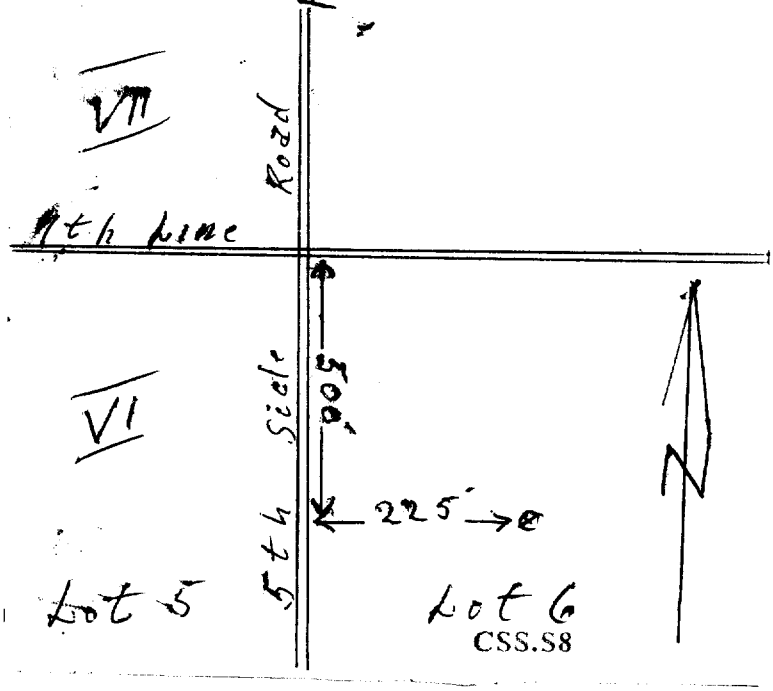
Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
			25 ft.	fresh
top soil	0	2		
brown clay stony sand	2	15		
grey sandy clay stoney	15	45		

For what purpose(s) is the water to be used? house
Is well on upland, in valley, or on hillside?
Drilling or Boring Firm Roth Well Digging
Address RR# 5 Barrie Ont
Licence Number 125
Name of Driller or Borer B. Roth
Address Same
Date April 26/68
B. Roth
(Signature of Licensed Drilling or Boring Contractor)

Form 7 5M 60-20912

OWRC COPY

Location of Well



CSS.S8

UTM 17 610570 5719 Con VII CODED Lot 6

5705630

3 9

UTM 17 4910490 210

Elev. 15 R 10010

Basin 22 11

The Ontario Water Resources Commission Act

WATER WELL RECORD

APL

MAY 9 1968

ONTARIO WATER RESOURCES COMMISSION

County or District Simcoe Township, Village, Town or City Scarboro

Con. 7 VII Lot 6 Date completed 4 (day) March (month) 68 (year)

Owner Shell Canada Ltd. (print in block letters) Address Oshawa Shopping Centre Oshawa Ont.

Casing and Screen Record

Inside diameter of casing 7" O.D

Total length of casing 99' 6"

Type of screen 7' 6 slot 3'6" 4 slot

Length of screen 10' 6"

Depth to top of screen 99' 6"

Diameter of finished hole 7" O.D

Pumping Test

Static level 12'

Test-pumping rate 25' G.P.M.

Pumping level 104'

Duration of test pumping 5 hrs.

Water clear or cloudy at end of test clear

Recommended pumping rate 25 G.P.M.

with pump setting of 110' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Top soil	0	2		
yellow Clay and stones	2	14		
yellow Sand	14	18		
Brown sandy clay	18	85		
Brown Fine sand	85	104		
Med. fine sand	104	110	85'	not Tested

For what purpose(s) is the water to be used?

Shell Canada Ltd.

Is well on upland, in valley, or on hillside? upland

Drilling or Boring Firm King City Well Drilling Co. Ltd.

Address Box 192 King City Ont.

Licence Number 3004

Name of Driller or Borer Geo. Adams

Address Box 192 King City

Date March 4/68

R. Geo Adams

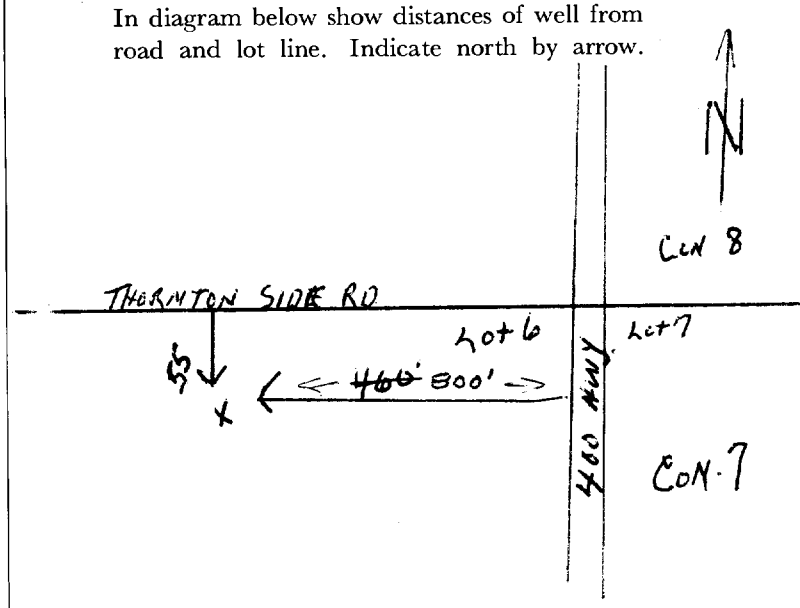
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

In diagram below show distances of well from road and lot line. Indicate north by arrow.



CSS.58

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31 D/5E

ONTARIO

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5710050 | MUNICIP. 57005 | CON. C,O,N | 07

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
S. [redacted]	Innisfil	VII	006

DATE COMPLETED DAY 14 MO. May YR. 73

[redacted] R#1 Thornton

RC.	ELEVATION	RC.	BASIN CODE
4	995	5	23

OCT 20, 1975

1 5710050 11 605055 4903084 4 995 5 23 OCT 20, 1975 82

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	clay &	gravel		0	67
	sand		fine	67	93
	silt w/	gravel streaks		93	149
	clay &	gravel		149	165
	clay			165	220
	sand		fine & cemented	220	245
	sand		coarse & cemented	245	273
	gravel		cemented	273	287
	clay &	silt		287	300

OWRC P.7

31 | 0067 05 1 1 | 0093 08 | 0149 06 1 1 | 0165 05 1 1 | 0220 05 | 0245 08 | V

32 | 0273 10 | 0287 1 1 | 0300 0506

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 ☐ FRESH 3 ☐ SULPHUR 14 / 2 ☐ SALTY 4 ☐ MINERAL
15-18	1 ☐ FRESH 3 ☐ SULPHUR 19 / 2 ☐ SALTY 4 ☐ MINERAL
20-23	1 ☐ FRESH 3 ☐ SULPHUR 24 / 2 ☐ SALTY 4 ☐ MINERAL
25-28	1 ☐ FRESH 3 ☐ SULPHUR 29 / 2 ☐ SALTY 4 ☐ MINERAL
30-33	1 ☐ FRESH 3 ☐ SULPHUR 34 80 / 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
10-11	1 ☐ STEEL 12 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			13-16
17-18	1 ☐ STEEL 19 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			20-23
24-25	1 ☐ STEEL 26 / 2 ☐ GALVANIZED / 3 ☐ CONCRETE / 4 ☐ OPEN HOLE			27-30

SCREEN

SIZE(S) OF OPENING (SLOT NO.) 31-33	DIAMETER 34-38 INCHES	LENGTH 39-40 FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN 41-44 FEET	80

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33 80	

71 PUMPING TEST

PUMPING TEST METHOD 10: 1 ☐ PUMP 2 ☐ BAILER

PUMPING RATE 11-14 GPM. | DURATION OF PUMPING 15-16 HOURS 17-18 MINS

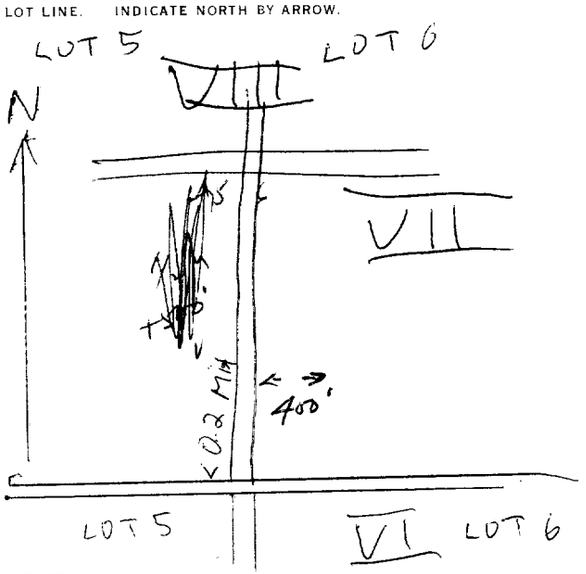
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING 25: 1 ☐ PUMPING 2 ☐ RECOVERY			
19-21 FEET	22-24 FEET	15 MINUTES 26-28 FEET	30 MINUTES 29-31 FEET	45 MINUTES 32-34 FEET	60 MINUTES 35-37 FEET

IF FLOWING, GIVE RATE 38-41 GPM.	PUMP INTAKE SET AT FEET	WATER AT END OF TEST 42: 1 ☐ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE ☐ SHALLOW ☐ DEEP	RECOMMENDED PUMP SETTING 43-45 FEET	RECOMMENDED PUMPING RATE 46-49 GPM

50-53 ___ ___ ___ . ___ GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL 54

1 ☐ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☒ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 55-56

1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☒ ~~COMMERCIAL~~ 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING 57

1 ☐ CABLE TOOL 2 ☒ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Snider Drilling | LICENCE NUMBER: 4816

ADDRESS: Craighurst

NAME OF DRILLER OR BORER: Don Bince | LICENCE NUMBER

SIGNATURE OF CONTRACTOR: Ralph Snider | SUBMISSION DATE DAY ___ MO. ___ YR. ___

MINISTRY OF THE ENVIRONMENT COPY

OFFICE USE ONLY

DATA SOURCE 1 58 | CONTRACTOR 4816 59-62 | DATE RECEIVED 150873 63-68 80

DATE OF INSPECTION 8/11/74 | INSPECTOR

REMARKS: APL CSS.S8

P JP

WI

FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31D/5E

ONTARIO

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5710894 | MUNICIP. 57005 | CON. CON | 07

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Simcoe	Innisfil	VII	006

[redacted] RR#1 Thornton — DATE COMPLETED DAY 18 MO. May YR. 73

ING | RC. | ELEVATION | RC. | BASIN CODE | | | | |

5710894 17 604976 4903291 4 995 5 23 OCT 20, 1975 82

OWRC P.7

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	clay w/	sand layers		0	63
	sand		fine	63	89
grey	clay			89	91
	sand		fine	91	98
	clay &	silt		98	151
	clay	dense		151	208
	sand		medium	208	213
	sand		fine	213	230
	sand &	silt		230	285
grey	clay		dense	285	290

31: 0063 05 28 | 0089 08 | 0091 2805 | 0098 08 | 0151 05 06 | 0208 05 | 1

32: 0213 09 | 0230 08 | 0285 2806 | 0290 05

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0208	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0210
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
34"x20 34"x25	06.000	06

MATERIAL AND TYPE: Stainless Steel — DEPTH TO TOP OF SCREEN: 0207 FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☐ BAILER — Air	0020 20 to 25 GPM	05 HOURS 07 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING (1 ☐ PUMPING 2 ☐ RECOVERY)	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
088 FEET	FEET		FEET	FEET	FEET	FEET

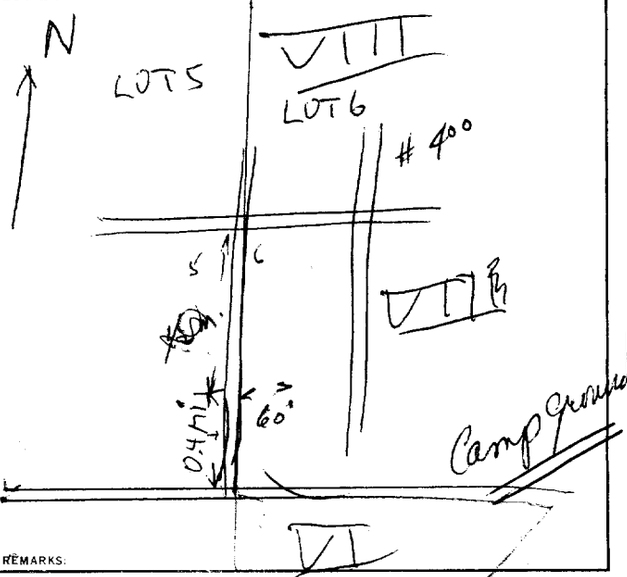
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	205 FEET	0025 GPM

50-53 ——— GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS' REMARKS:

FINAL STATUS OF WELL

54 — 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE

55-56 — 05

1 ☐ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☒ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

METHOD OF DRILLING

57 — 1 ☐ CABLE TOOL; 2 ☒ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☐ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Snider Drilling — LICENCE NUMBER: 4816

ADDRESS: Craighurst

NAME OF DRILLER OR BORER: Don Prince — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Ralph Snider — SUBMISSION DATE: DAY ____ MO. ____ YR. ____

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 4816 — DATE RECEIVED 63-68: 060574

DATE OF INSPECTION: 8/11/74 — INSPECTOR:

REMARKS: CSS.83

P 07

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31D5E

Ontario

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 | 5711502 | MUNICIP. 57005 | CON. CON 07

COUNTY OR DISTRICT: SIMCOE

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: INNISFIL

CON., BLOCK, TRACT, SURVEY, ETC.: VII BP

LOT: 005 BP

[redacted] #2. STROUD., ONTARIO

DATE COMPLETED: DAY 28 MO. 09 YR. 74

NG 0280 | RC. 5 | ELEVATION 0995 | RC. 5 | BASIN CODE 22 | II | III | IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
BLACK.	TOPSOIL			0	2.
BROWN	CLAY	SAND.	HARD, STONEY.	2	12.
BROWN	SAND.		COARSE, STONEY.	12	32.
BROWN.	SAND.		COARSE, WET.	32	44.

31 | 0002802 | 0012605287 | 0032610187 | 0044611091

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0033.	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
30"	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☑ CONCRETE 4 ☐ OPEN HOLE	3"	0	0044.
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☐ BAILER

PUMPING RATE: GPM

DURATION OF PUMPING: HOURS MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING [redacted]			
012. FEET	FEET	15 MINUTES FEET	30 MINUTES FEET	45 MINUTES FEET	60 MINUTES FEET

IF FLOWING GIVE RATE: GPM

PUMP INTAKE SET AT: FEET

WATER AT END OF TEST: 1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☑ DEEP

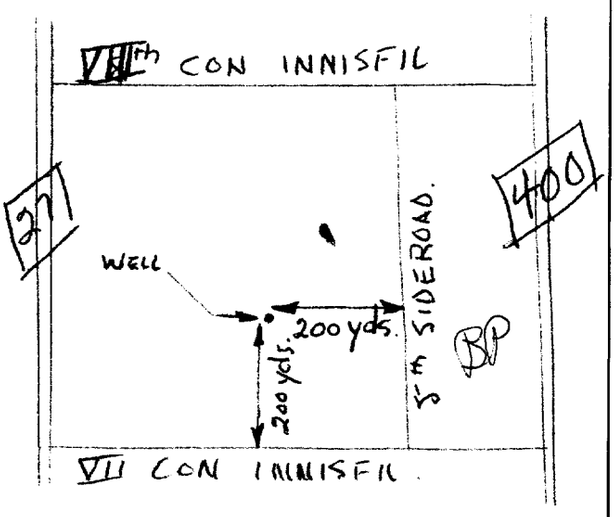
RECOMMENDED PUMP SETTING: 040 FEET

RECOMMENDED PUMPING RATE: 0010 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 0402

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

FINAL STATUS OF WELL: 1

1 ☑ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE: 02

1 ☐ DOMESTIC 2 ☑ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING: 6

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☑ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: [redacted] ROTH WELL DIGGING. LICENCE NUMBER:

ADDRESS: RR5 BARRIE

NAME OF DRILLER OR BORER: PAUL KEELE. LICENCE NUMBER: 3138.

SIGNATURE OF CONTRACTOR: Paul Keele. SUBMISSION DATE: DAY 21 MO. 10 YR. 74

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 4608 | DATE RECEIVED: 211074

DATE OF INSPECTION: May 11/76 | INSPECTOR: J. B.

REMARKS: CSS.58 | P BP. | WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

STR # 5721059

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC	LOT
SIMCOE	INNISFIL	CON 7	5

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
LETIZIA HOMES	RR#1 COOKSTOWN	DAY 25 MO 07 YR 86

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
BROWN	CLAY			0	25
"	SAND			25	26
"	CLAY			26	30
"	SAND			30	31
"	CLAY			31	55

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
25	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MIMERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
30"	1 ☐ STEEL 2 ☐ GALVANIZED 1 ☒ CONCRETE 4 ☐ OPEN HOLE	2½	0	26
30"	1 ☐ STEEL 2 ☒ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	16 gauge	26	40
24"	1 ☐ STEEL 2 ☒ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	11	40	55

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE: 3/8 STONE - 10	DEPTH TO TOP OF SCREEN: TON FEET	

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	DEPTH SET AT - FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
	CEMENT	
SEALED - GROUTED		

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	2 GPM	2 HOURS ___ MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☒ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
15 FEET	31' 11" FEET	32' 6" FEET	32' 7" FEET	31' 8" FEET	31' 3" FEET

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	52 FEET	3 GPM

1050 GALLONS IN STORAGE

FINAL STATUS OF WELL

1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE

1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

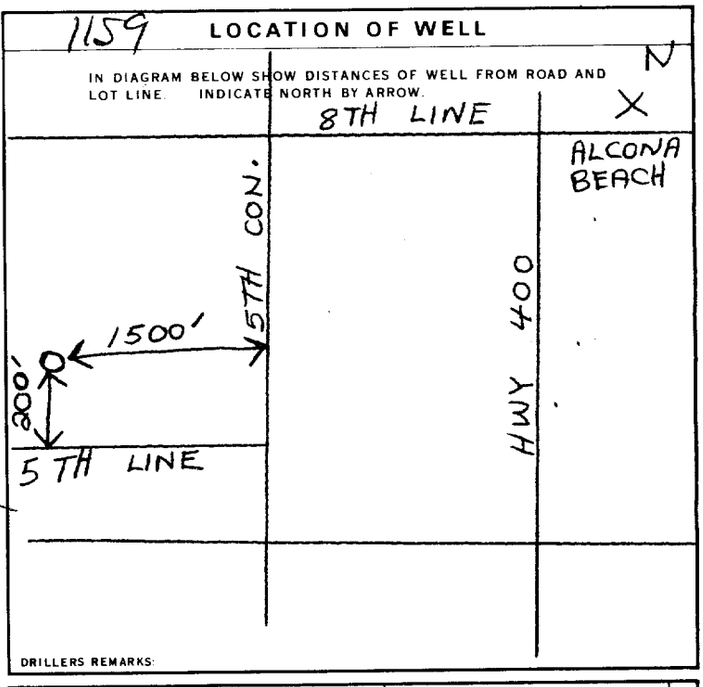
METHOD OF DRILLING

1 ☐ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☒ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

LOCATION OF WELL

1159

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR: LONE STAR WELL DIGGING — LICENCE NUMBER: 3413

ADDRESS: SITE 11, R.R. 6 BARRIE, ONTARIO L4M 5P5 (705) 436-4359

NAME OF DRILLER OR BORER: Peter Moore — LICENCE NUMBER: 3413

SIGNATURE OF CONTRACTOR: Jim Moore — SUBMISSION DATE: DAY 30 MO. 07 YR. 86

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR | DATE RECEIVED: 311086

DATE OF INSPECTION | INSPECTOR

REMARKS: CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77 FORM 7

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11 — 5725988 — MUNICIP 57005 — CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
County of Simcoe	Twp of Innisfil	CON 6	6

[redacted] . # Thornhill Ont.

DATE COMPLETED: DAY 18 MO Oct YR 89

RC | ELEVATION | RC | BASIN CODE | II | III | IV

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	clay	sand seams	layered	0	6
Grey	clay	sand,silt,seams	layered	6	44
Brown	sand(fine)	clay particles	layered	44	58
Grey	clay	stones,sand seams	layered soft	58	72
Grey	silt	grey clay	layered	72	215
Brown	sand(course)		loose	215	230

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
230	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERALS 6 ☐ GAS

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6	☒ 1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 5 PLASTIC	.188	+1	226
	1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 5 PLASTIC			
	1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE 5 PLASTIC			

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
14	5 3/4	4

MATERIAL AND TYPE: Sta. St. wire wd

DEPTH TO TOP OF SCREEN: 226 FEET

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
215	50	drill cuttings
50	40	Benseal plug
40	0	Drill cuttings

71 PUMPING TEST

PUMPING TEST METHOD: Air ☐ 1 PUMP ☐ 2 BAILER

PUMPING RATE: 40 GPM

DURATION OF PUMPING: 4 HOURS 0 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING ☒ 1 PUMPING ☐ 2 RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
70 FEET	180 FEET		180 FEET	180 FEET	180 FEET	180 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: 180 FEET

WATER AT END OF TEST: ☒ 1 CLEAR ☐ 2 CLOUDY

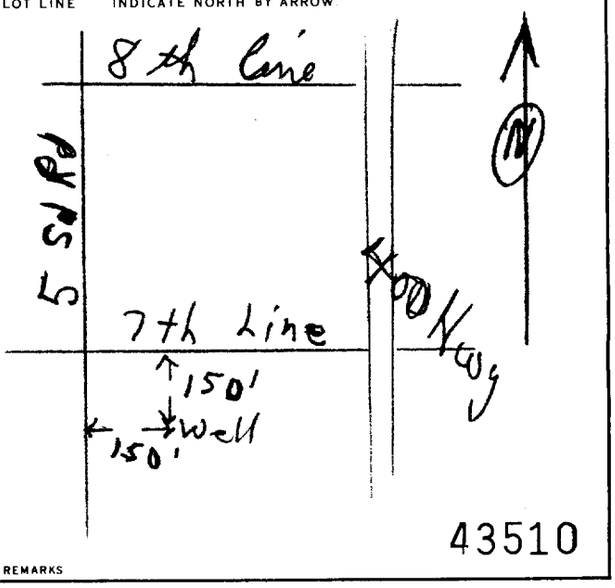
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

RECOMMENDED PUMP SETTING: 180 FEET

RECOMMENDED PUMPING RATE: 30-40 GPM

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.



43510

DRILLERS REMARKS

FINAL STATUS OF WELL	☒ 1 WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 8 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED; ☐ DEWATERING
WATER USE	☒ 1 DOMESTIC; ☒ 2 STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED
METHOD OF CONSTRUCTION	☐ 1 CABLE TOOL; ☒ 2 ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 8 ☐ ROTARY (AIR); 5 ☐ AIR PERCUSSION; 8 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING; ☐ DIGGING; ☐ OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Northern Well Drilling Limited

WELL CONTRACTOR'S LICENCE NUMBER: 3903

ADDRESS: P.O. Box 358 Unionville,Ont.

NAME OF WELL TECHNICIAN: G. Bridges

WELL TECHNICIAN'S LICENCE NUMBER: T-0002

SIGNATURE OF TECHNICIAN/CONTRACTOR: Jerry W. Renwick

SUBMISSION DATE: DAY 30 MO Oct YR 89

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR: 3903 | DATE RECEIVED: DEC 27 1989

DATE OF INSPECTION | INSPECTOR

REMARKS: CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506 (11/86) FORM 9

Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☑ Imperial

Well Tag No. *(Place Sticker and/or Print Below)*

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Henry FARMS.		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
7009 5 Sideroad	Simcoe	Ont	L9L 3R8	7054589703

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
7009 5 Sideroad	Innisfil	NPT 6	Conc 6

County/District/Municipality	City/Town/Village	Province	Postal Code
Simcoe	Innisfil	Ontario	L9L 3R8

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	605123	4902821		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	abandonment.		Service pit	+1	6
			Sandy gravel	6	7
			Bentonite Chips	7	8
			SANDY gravel +20% solids bentonite	8	42
			Bentonite chips	42	43.
			Clorinated gravel	43	44.

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☒ Boring ☐ Digging
☐ Air percussion
☐ Other, *specify*

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify*

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
30"	Concrete	3"	+1'	44'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
~~36~~"				

Status of Well

☐ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☒ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, *specify*
☐ Other, *specify*

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water: Fresh	Untested	Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify* _____

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*

Pumping rate *(l/min / GPM)*

Duration of pumping _____ hrs + _____ min

Final water level end of pumping *(m/ft)*

If flowing give rate *(l/min / GPM)*

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

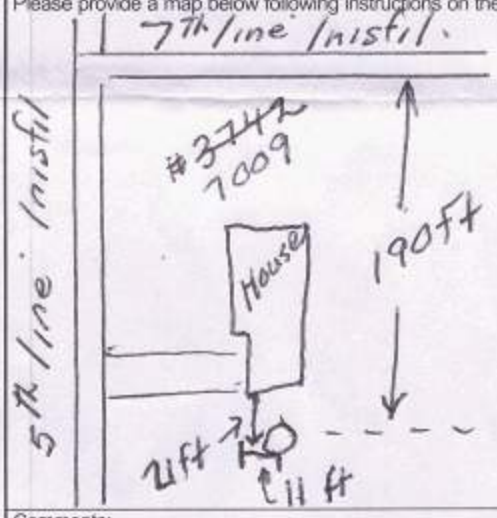
Well production *(l/min / GPM)*

Disinfected? ☑ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
SLOAN'S Pumps & Service	6454

Business Address (Street Number/Name)	Municipality
5319 13th line New Tec.	Simcoe.

Province	Postal Code	Business E-mail Address
Ont.	L0L 2L0	sloanspumps@zing-net.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
7054584378	SLOAN Ron

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0181		2011/11/23

Well owner's information package delivered: ☐ Yes ☑ No

Date Package Delivered: YYYY MM DD

Date Work Completed: 2011/11/15

Ministry Use Only

Audit No. Z142697

Received NOV 25 2011

0506E (2007/12) © Queen's Printer for Ontario, 2007

Ministry's Copy

Ontario — Ministry of the Environment and Climate Change

Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)*
Tag#: A142843

Well Record
Regulation 903 Ontario Water Resources Act

Page _____ of _____

[redacted]

Address of Well Location (Street Number/Name): 7076 5th sideroad
Township: Innisfil
Lot:
Concession:
County/District/Municipality: Simcoe
City/Town/Village:
Province: Ontario
Postal Code:
UTM Coordinates: NAD 83 Zone 17 Easting 604766 Northing 4903224
Municipal Plan and Sublot Number:
Other:

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BLACK	TOP SOIL/SAND		SOFT	0	10'
BROWN	CLAY	SAND	SOFT	10'	20'
BROWN	CLAY	GRAVEL		20'	55'
BROWN	CLAY	SAND		55'	60'
BROWN	CLAY	SAND		60'	65'
BROWN	SAND		WATER BEARING	65'	70'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0'	20'	EZ SEAL	7 ft³

Method of Construction

☑ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☐ Boring ☐ Digging
☐ Air percussion
☐ Other, specify _____

Well Use

☐ Public ☐ Commercial ☐ Not used
☑ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6 1/4"		.188	+2	65'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
5"	STEEL Stainless	12	65'	70'

Status of Well

☑ Water Supply
☐ Replacement Well
☐ Test Hole
☐ Recharge Well
☐ Dewatering Well
☐ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, specify
☐ Other, specify

Water Details

Water found at Depth	Kind of Water	
65' (m/ft) ☐ Gas	☑ Fresh ☐ Untested	☐ Other, specify
(m/ft) ☐ Gas	☐ Fresh ☐ Untested	☐ Other, specify
(m/ft) ☐ Gas	☐ Fresh ☐ Untested	☐ Other, specify

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

Results of Well Yield Testing

After test of well yield, water was:
☑ Clear and sand free
☐ Other, specify _____

If pumping discontinued, give reason:

Pump intake set at (m/ft)

Pumping rate (l/min / GPM)

Duration of pumping _____ hrs + _____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM) 5 GPM

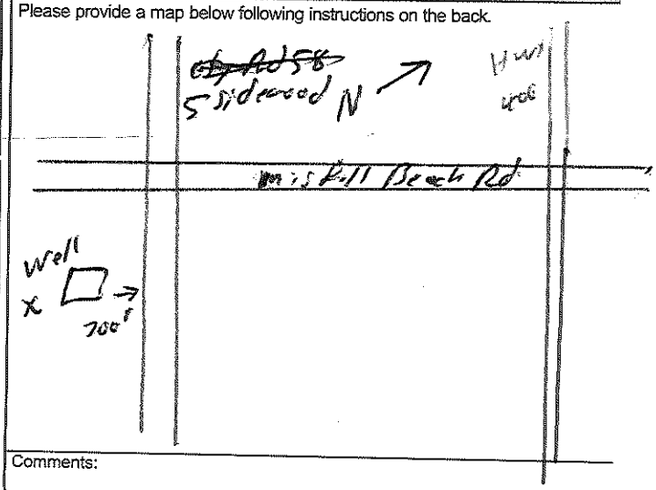
Well production (l/min / GPM)

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	17'		42
1	21	1	38
2	24.5	2	36.5
3	28	3	33
4	31	4	30
5	33.5	5	28.5
10	39.5	10	22
15	42	15	18.5
20	42	20	17
25	42	25	17
30	42	30	17
40	42	40	17
50	42	50	17
60	42'	60	17

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor: Direct Well Drilling
Well Contractor's Licence No.: 1151
Business Address (Street Number/Name): 661 Penetanguishene Road
Municipality: Barrie
Province: On
Postal Code: L4M4Y8
Business E-mail Address:
Bus. Telephone No. *(inc. area code)*: 7057221053
Name of Well Technician (Last Name, First Name): Matt Blake
Well Technician's Licence No.: 21911
Signature of Technician and/or Contractor:
Date Submitted: 2017/06/28

Well owner's information package delivered: ☐ Yes ☑ No
Date Package Delivered:
Date Work Completed: 2017/06/25

Ministry Use Only
Audit No. Z242515
Received JUL 28 2017

0506E (2014/11)

Ministry's Copy

© Queen's Printer for Ontario, 2014

Ontario

Ministry of the Environment, Conservation and Parks

Well Tag No. *(Place Sticker and/or Print Below)* A287814

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Measurements recorded in: ☑ Metric ☐ Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Tatham Engineering Limited		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
41 King St	Barrie	ONT	L4N6B5	N/A

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Innisfil Beach Rd			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Innisfil	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	17	604980	4904259		

Overburden and Bedrock Materials/Abandonment Sealing Record *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Fill, sand, silt	trace gravel	Loose	0	2.0
Brown	SILTY SAND	gravel,	Dense	2.0	6.1

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0.0	4.4	Bentonite	—

Method of Construction

☐ Cable Tool ☐ Diamond
☐ Rotary (Conventional) ☐ Jetting
☐ Rotary (Reverse) ☐ Driving
☑ Boring ☐ Digging
☐ Air percussion
☐ Other, *specify* _____

Well Use

☐ Public ☐ Commercial ☐ Not used
☐ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☑ Test Hole ☑ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
5.2	plastic	0.8	0.0	4.5

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
6.0	plastic	10	4.5	6.1

Status of Well

☐ Water Supply
☐ Replacement Well
☑ Test Hole
☐ Recharge Well
☐ Dewatering Well
☑ Observation and/or Monitoring Hole
☐ Alteration (Construction)
☐ Abandoned, Insufficient Supply
☐ Abandoned, Poor Water Quality
☐ Abandoned, other, *specify* _____
☐ Other, *specify* _____

Water Details

Water found at Depth (m/ft)	☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, *specify*
3.7		

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	6.1	15

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify* _____

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*

Pumping rate *(l/min / GPM)*

Duration of pumping _____ hrs + _____ min

Final water level end of pumping *(m/ft)*

If flowing give rate *(l/min / GPM)*

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

Well production *(l/min / GPM)*

Disinfected? ☑ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level				
1			1	
2			2	
3			3	
4			4	
5			5	
10			10	
15			15	
20			20	
25			25	
30			30	
40			40	
50			50	
60			60	

Map of Well Location

Please provide a map below following instructions on the back.

please see attached drawing

Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
DBW Drilling LTD	7230

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
148 Wright Cres	AJAX	ONT	L1S6X6	

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
4167380337	Baumeister Doug	2385		2020 07 28

Well owner's information package delivered ☐ Yes ☑ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2020 05 20

Ministry Use Only

Audit No. Z333197

AUG 14 2020

Received

0506E (2018/12)

Ministry's Copy

© Queen's Printer for Ontario, 2018

TA6 " A287814
AUSTI # 233197



LEGEND

BOREHOLE LOCATION

MONITORING WELL LOCATION

0 500 1,000

1:30,000 METRES

NOTE(S)

REFERENCE(S)
1. BASE DATA - MNRF, 2019
2. BASE IMAGERY - SOURCES: ESRI, KEBS, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
© 2020 MICROSOFT CORPORATION © 2020 MAXAR GONES (2020) DISTRIBUTION AIRBUS DS
3. PROJECTION: TRANSVERSE MERCATOR, NAD 1983 UTM ZONE 17

CLIENT
TOWN OF INNISFIL

PROJECT
GEOTECHNICAL INVESTIGATION
INNISFIL BEACH ROAD / COUNTRY ROAD 21 AND COUNTY ROAD 53
INNISFIL, ONTARIO

TITLE
SITE PLAN

CONSULTANT
GOLDER

YYYY-MM-DD	2020-08-17
DESIGNED	STB
PREPARED	STB
REVIEWED	
APPROVED	

PROJECT NO.	CONTROL	REV.	FIGURE
19132374	0002	A	1

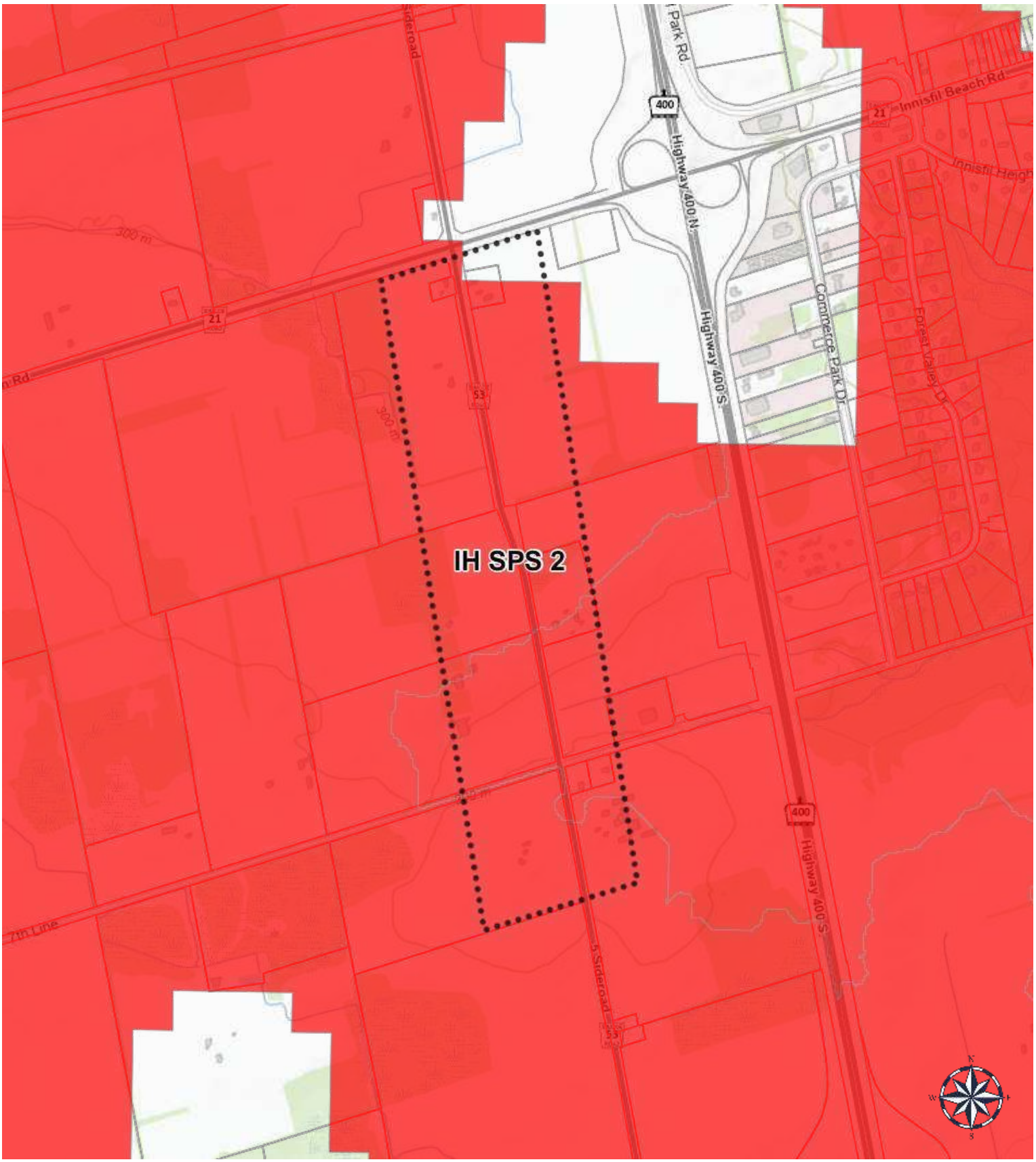
C-783 233197

AUG 14 2020

ENCLOSURE 4

Simcoe County Maps

IH SPS 2 Study Area - Highly Vulnerable Aquifers



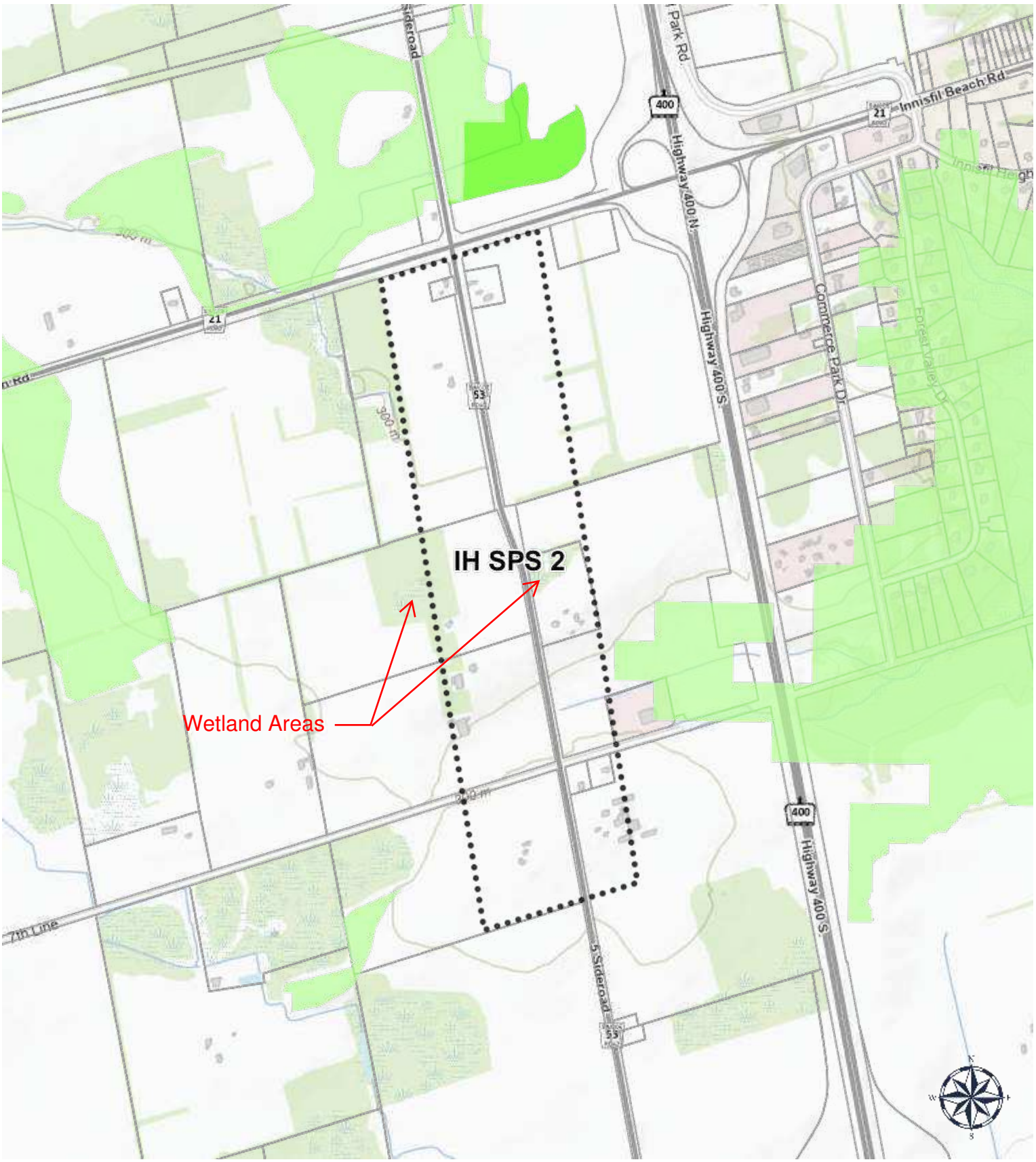
This map, either in whole or in part, may not be reproduced without the written authority from© The Corporation of the County of Simcoe. This map is intended for personal use, has been produced using data from a variety of sources and may not be current or accurate. Produced (in part) under license from: © Her Majesty the Queen in Right of Canada, Department of Natural Resources: © Queens Printer, Ontario Ministry of Natural Resources: © Teranet

0 200 400 600m

1 : 18,056

Nov 29, 2021

IH SPS 2 Study Area - Significant Groundwater Recharge Areas



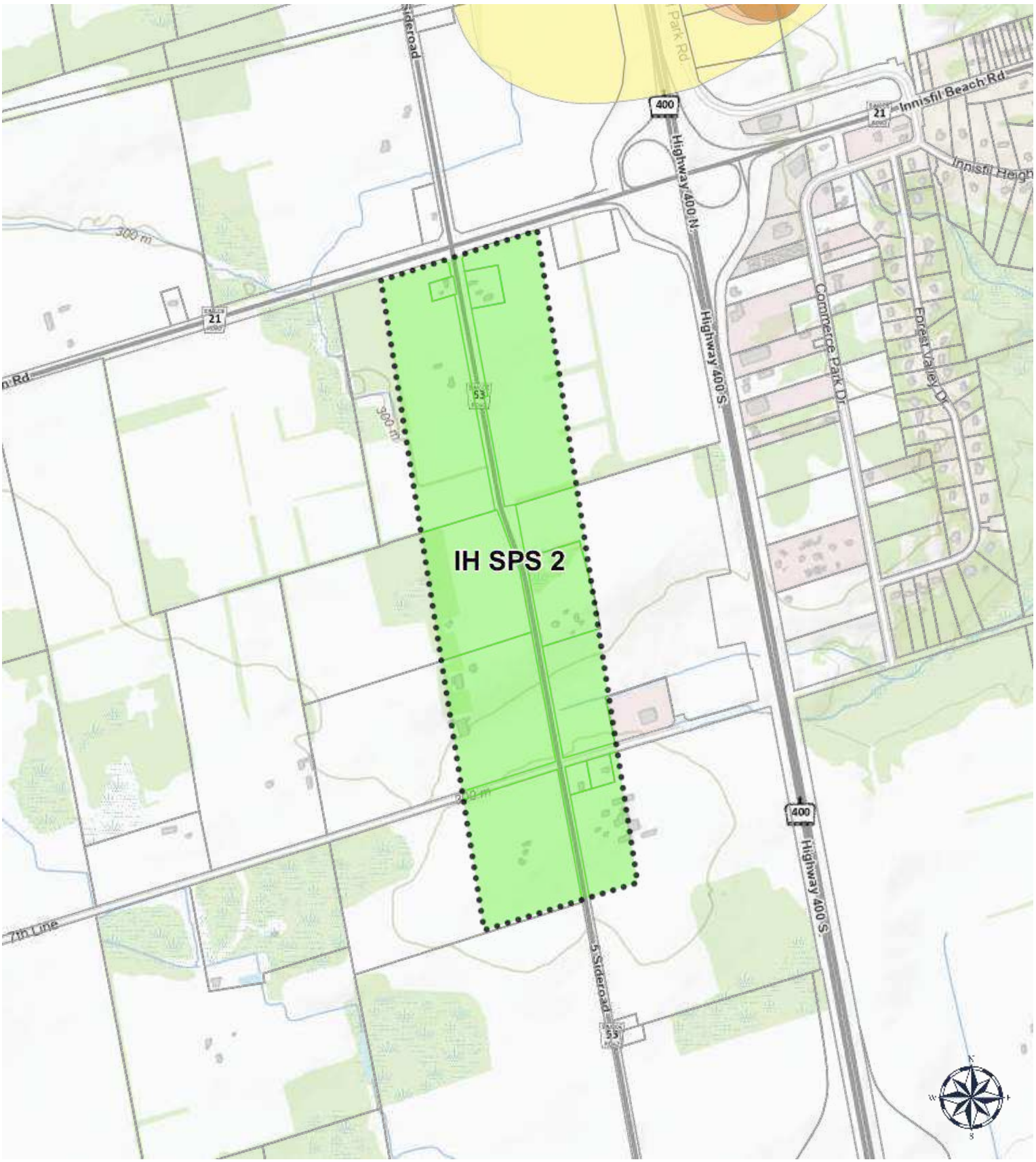
This map, either in whole or in part, may not be reproduced without the written authority from© The Corporation of the County of Simcoe. This map is intended for personal use, has been produced using data from a variety of sources and may not be current or accurate. Produced (in part) under license from: © Her Majesty the Queen in Right of Canada, Department of Natural Resources: © Queens Printer, Ontario Ministry of Natural Resources: © Teranet

0 200 400 600m

1 : 18,056

Nov 29, 2021

IH SPS 2 Study Area - Wellhead Protection Area



This map, either in whole or in part, may not be reproduced without the written authority from© The Corporation of the County of Simcoe. This map is intended for personal use, has been produced using data from a variety of sources and may not be current or accurate. Produced (in part) under license from: © Her Majesty the Queen in Right of Canada, Department of Natural Resources: © Queens Printer, Ontario Ministry of Natural Resources: © Teranet

0 200 400 600m

1 : 18,056

Nov 29, 2021

ENCLOSURE 5

MTO Boreholes and Borehole Location Plans

RECORD OF BOREHOLE No B4-1 1 OF 1 METRIC

PROJECT 001-1143F
W.P. 30-95-00
DIST SW HWY 400
DATUM Geodetic

LOCATION N 4905036.5; E 290509.0
BOREHOLE TYPE 108mm DIAMETER SOLID STEM AUGERS
DATE Oct.24/2000

ORIGINATED BY AZ
COMPILED BY LCC
CHECKED BY ASP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × REMOULDED) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
302.7	GROUND SURFACE										
0.0	Topsoil										
0.2	Clayey Silt with sand, some gravel (Till) Hard Brown Moist		1	SS	120		302				
			2	SS	125		301		○ H		11 37 43 9
300.6											
2.1	Silty Sand, some gravel, trace clay Very dense Brown Dry		3	SS	103/.15		300				
300.0											
2.7	Clayey Silt with sand, some gravel (Till) Hard Brown Moist		4	SS	151/.15				○		
			5	SS	101/.15		299				
			6	SS	109/.15		298		○ H		
	Cobbles at 5.5m and 5.8m depth										
296.5			7	SS	113/.15		297				
6.2	END OF BOREHOLE										

Notes:
1. Refusal to auger advance was encountered at 1.4m depth. Borehole was relocated 1m west and drilling continued.
2. Borehole dry on completion of drilling operations.

$+^3, \times^3$: Numbers refer to Sensitivity $\circ^{3\%}$ STRAIN AT FAILURE

ON_MOT 0011143F.GPJ ON_MOT.GDT 14/1/02

RECORD OF BOREHOLE No B4-2 1 OF 1 METRIC

PROJECT 001-1143F
W.P. 30-95-00 LOCATION N 4904989.7; E 290437.7 ORIGINATED BY AZ
DIST SW HWY 400 BOREHOLE TYPE 108mm DIAMETER SOLID STEM AUGERS COMPILED BY LCC
DATUM Geodetic DATE Oct.24/2000 CHECKED BY ASP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa: ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × REMOULDED (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (10 20 30)	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
305.6	GROUND SURFACE										
0.0 / 305.1	Topsoil										
0.5 / 304.1	Cleyey Silt with sand, some orgenics (Fill) Stiff Dark brown Moist		1	SS	11		305				
1.5 / 303.4	Silty Sand, trace gravel, clay end organics (Fill) Compact Dark brown Moist		2	SS	27		304		○		
2.2	Clayey Silt with sand, trece gravel (Till) Hard Brown becming grey at 7.3m depth Moist		3	SS	48		303				
			4	SS	141/.25				○		
	Cobbles et 3.7m depth		5	SS	101/.15		302				
			6	SS	115/.15		301		○		
	Silty sand, trace cley and gravel (Till) encountered in Sample 7.		7	SS	43		300				
			8	SS	210		299		○		
			9	SS	240		298				
294.8			10	SS	135/.15		297		○		
10.8	END OF BOREHOLE						296				
							295				

Notes:
1. Borehole dry on completion of drilling operetions.
2. Water level in piezometer measured at 7.7m depth (Elev.297.9m) on March 15, 2001.

$+^3, \times^3$: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

ON_MOT 0011143F.GPJ ON_MOT.GDT 14/1/02

DIST HWY 400
CONT. No.
GWP No. 30-95-00

INNISFIL BEACH ROAD OVERPASS HWY 400
BOREHOLE LOCATION PLAN

SHEET

Golder Associates

Golder Associates Ltd.
MISSISSAUGA, ONTARIO, CANAOA

HIGHWAY 400

INNISFIL BEACH ROAD

SIMCOE ROAD 21

B4-1

B4-2

19+700

19+600

19+500

N 4 905 000

N 4 904 900

E 290 400

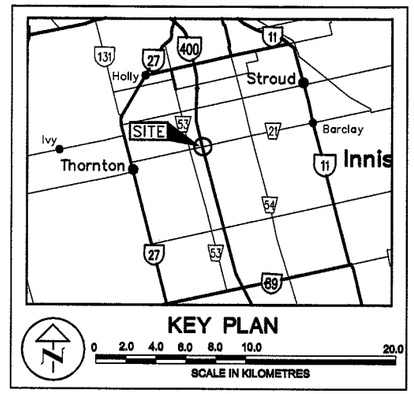
E 290 500

E 290 600

B&H

CB

LS



KEY PLAN

0 2.0 4.0 6.0 8.0 10.0 20.0
SCALE IN KILOMETRES

LEGEND

- Borehole, previous investigation
- Borehole, present investigation

No.	ELEVATION	LOCATION NORTHING	LOCATION EASTING
B4-1	302.7	4,905,036.5	290,509.0
B4-2	305.6	4,904,989.7	290,437.7

REFERENCE
This drawing was created from digital file "50201.dwg" provided by URS Cole Sherman

0 10 20 30 40 50 100m
SCALE IN METRES

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

NO.	OATE	BY	REVISION

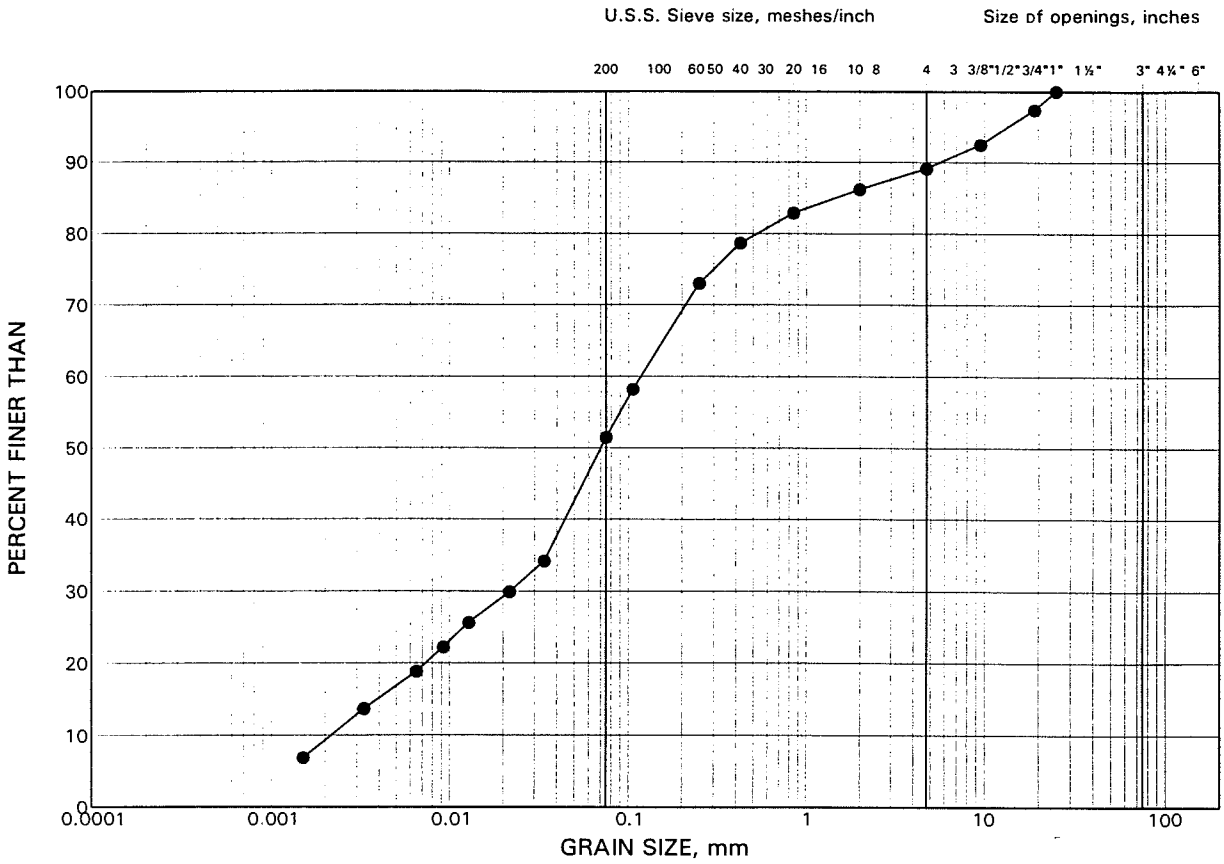
Geocres No.

HWY. No. 400		PROJECT NO.: 001-1143F	
SUBM'O. LCC	CHKO: ASP	OATE: JANUARY 2001	SITE 30-210
ORAWN: MHW	CHKO. LCC	APPO. ASP	OWG. 1

P1143F00.DWG

GRAIN SIZE DISTRIBUTION TEST RESULT
Clayey Silt Till

FIGURE 1



LEGEND

SYMBOL	BOREHOLE	SAMPLE	ELEVATION (m)
●	B4-1	2	300.9

Project 001-1143F

Golder Associates

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-01 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION , MTM NAD 83 Zone10: N 4 904 060.6 E 290 615.1 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.22 - 2019.05.24 LATITUDE 44.276410 LONGITUDE -79.677701 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
302.3	GROUND SURFACE								
0.0	**TOPSOIL:** (150mm)								
0.2	**SAND** and **SILT**, trace gravel, occasional rootlets Loose Brown Moist (FILL)		1	SS	5		302		
301.6									
0.7	**SAND**, trace gravel, trace to some silt, trace to some clay Loose to Compact Brown Moist		2	SS	5				0 86 14 (SI+CL)
			3	SS	22		301		
300.1									
2.2	**SAND**, silty, trace to some gravel, some clay Very Dense Brown Moist (TILL)		4	SS	61		300		
			5	SS	60		299		
			6	SS	100/ 0.100		298		
			7	SS	62		297		
							296		17 50 20 13
			8	SS	100		295		
							294		
			9	SS	100/ 0.200		293		

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P — NATURAL MOISTURE CONTENT w — LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

Augers grinding at 9.9m

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 15 5 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-01 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION , MTM NAD 83 Zone10: N 4 904 060.6 E 290 615.1 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.22 - 2019.05.24 LATITUDE 44.276410 LONGITUDE -79.677701 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (20 40 60 80 100): ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
292.1	**SAND**, silty, trace to some gravel, some clay (TILL) Very Dense Brown Moist						292				
10.2	**CLAY**, silty, some sand Hard Brown Moist (TILL)		10	SS	82		291				0 17 48 35
290.6											
11.7	**SAND**, silty, trace gravel, trace clay Very Dense Brown Moist (TILL)		11	SS	81		290				
289.5											
12.8	END OF BOREHOLE AT 12.8m. BOREHOLE OPEN AND WATER LEVEL AT 11.6m UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen.										

WATER LEVEL READINGS

DATE	DEPTH(m)	ELEV.(m)
2019.06.04	7.1	295.2
2020.04.08	7.3	295.0

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-02 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 117.6 E 290 618.1 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.27 - 2019.05.27 LATITUDE 44.276923 LONGITUDE -79.677664 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
301.1	GROUND SURFACE									
0.0	**ASPHALT** (150mm)						301			
0.2	**SAND** and **GRAVEL** Brown Moist (FILL)		1	GS				○		
300.4										
0.7	**SAND** and **SILT**, some gravel Compact Brown Moist (FILL)		1	SS	25		300	○		
299.6										
1.4	**SAND**, silty, some gravel, some clay Dense to Very Dense Brown Moist (TILL) occasional cobbles from 2.3m to 2.9m		2	SS	49		299	○		
			3	SS	49			○		19 50 17 14
			4	SS	56		298	○		
							297			
			5	SS	87			○		Augers grinding from 4.6m to 4.9m
295.4						▽	296			Spoon wet at about 5.4m depth
5.6	**SAND** and **SILT**, trace clay Very Dense Brown Wet		6	SS	86		295	○		0 56 35 9
293.9							294			
7.2	**SAND**, silty, some gravel, some clay Very Dense Grey Moist (TILL)		7	SS	100/ 0.150		293	○		
				SS	100/ 0.225		292	○		

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-02 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 117.6 E 290 618.1 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.27 - 2019.05.27 LATITUDE 44.276923 LONGITUDE -79.677664 CHECKED BY SKP

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES						GR SA SI CL
	Continued From Previous Page										
290.9							291				
10.2	END OF BOREHOLE AT 10.2m. WATER LEVEL AT 5.5m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG AND AUGER CUTTINGS TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-03 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 163.0 E 290 595.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.22 - 2019.05.22 LATITUDE 44.277331 LONGITUDE -79.677943 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
304.3	GROUND SURFACE								
0.0	**TOPSOIL:** (150mm)								
0.2	**SAND** and **SILT**, occasional organics Compact Brown Moist (FILL)		1	SS	10		304		
303.6 0.7	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)		2	SS	31		303		
			3	SS	100/				
			4	SS	100/ 0.250		302		
			5	SS	67		301		8 60 19 13
			6	SS	81		300		
			7	SS	53		299		
297.2 7.2	**SAND**, trace to some silt, trace gravel, trace clay Very Dense Brown Moist to Wet		8	SS	62		298		3 82 15 (SI+CL)
			9	SS	60		297		
							296		
							295		

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE
20 40 60 80 100

PLASTIC LIMIT w_P NATURAL MOISTURE CONTENT w LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

Continued Next Page

+³, ×³: Numbers refer to Sensitivity

15 (20/10) 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-03 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 163.0 E 290 595.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.22 - 2019.05.22 LATITUDE 44.277331 LONGITUDE -79.677943 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, trace to some silt, trace gravel, trace clay Dense Brown Moist						294				
			10	SS	39				○		
292.6							293				
11.7	**SAND**, silty, trace gravel, trace to some clay Very Dense Brown Moist (TILL)										
291.7			11	SS	100		292		○		5 61 34 (SI+CL)
12.6	END OF BOREHOLE AT 12.6m. WATER LEVEL AT 10.0m UPON COMPLETION BOREHOLE THEN CAVED-IN TO 7.3m. BOREHOLE BACKFILLED WITH AUGER CUTTINGS AND BENTONITE HOLEPLUG TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-04 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 188.8 E 290 603.4 ORIGINATED BY BI

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.28 - 2019.05.28 LATITUDE 44.277564 LONGITUDE -79.677850 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
301.8	GROUND SURFACE										
0.0	**ASPHALT** (150mm)										
0.2	**SAND** and **GRAVEL**, trace silt, trace clay Brown Moist (FILL)		1	GS					○		
301.2											
0.7	**SAND** and **SILT**, trace gravel Compact Brown Moist (FILL)		1	SS	19		301		○		
300.4											
1.4	**SAND**, silty, some gravel, some clay Very Dense Brown Moist (TILL)		2	SS	73		300		○		19 52 16 13
			3	SS	73		299		○		
			4	SS	86		298		○		
			5	SS	87		297		○		
			6	SS	100/ 0.250	▽	296		○		
294.8							295				
7.1	**SILT**, clayey, some sand Hard Brown Moist (TILL)		7	SS	100/ 0.175		294		○		0 13 67 20
293.3											
8.5	**SAND**, silty, some gravel, trace to some clay Very Dense Brown Moist (TILL)		8	SS	100/ 0.200		293		○		Augers grinding at 9.9m
292.3											
9.5	END OF BOREHOLE AT 9.5m. BOREHOLE CAVED-IN TO 7.6m. WATER LEVEL AT 5.8m UPON										

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-04 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 188.8 E 290 603.4 ORIGINATED BY BI

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.28 - 2019.05.28 LATITUDE 44.277564 LONGITUDE -79.677850 CHECKED BY SKP

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES						GR SA SI CL
	Continued From Previous Page										
	COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG AND AUGER CUTTINGS TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-05 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 219.2 E 290 582.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.21 - 2019.05.21 LATITUDE 44.277837 LONGITUDE -79.678107 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
304.6	GROUND SURFACE										
0.0	**TOPSOIL:** (125mm)										
0.1	**SAND** and **SILT**, some clay, trace gravel Loose Brown Moist (FILL)		1	SS	9		304		○		
			2	SS	7						
303.2											
1.4	**SAND**, silty, trace gravel, some clay Very Dense Brown Moist (TILL)		3	SS	100/ 0.050		303		○		Spoon bouncing at 1.4m. Borehole relocated to 2.0m south
			4	SS	70		302		○ ○		4 58 21 17
			5	SS	100/ 0.250		301		○		
			6	SS	100/ 0.250		300		○		6 60 18 16
			7	SS	100		299		○		
			8	SS	100		298		○		
			9	SS	100/ 0.225		297		○		17 54 17 12
294.7							296				Auger refusal at 9.9m and grinding
							295				

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No DC-05 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 904 219.2 E 290 582.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.21 - 2019.05.21 LATITUDE 44.277837 LONGITUDE -79.678107 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (20 40 60 80 100): ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
9.9	END OF BOREHOLE AT 9.9m. BOREHOLE OPEN AND DRY UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen. WATER LEVEL READINGS DATE DEPTH(m) ELEV.(m) 2019.06.04 7.1 297.5 2020.04.08 7.3 297.4										

$+^3$, $\times^3$: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-01 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 297.4 E 290 374.6 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.06 - 2019.05.06 LATITUDE 44.287537 LONGITUDE -79.680747 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
305.8	GROUND SURFACE				
0.0	**TOPSOIL** (125mm)				
0.1	**SAND** and **SILT**, some gravel Loose Brown Moist (FILL)	1	SS	7	
305.1 0.7	**SAND** and **SILT**, trace gravel, some clay Very Dense Brown Moist (TILL)	2	SS	59	Augers grinding from 0.8m to 1.5m
		3	SS	81	1 43 43 13
303.6 2.2	**SAND**, some silt, trace clay Dense to Very Dense Brown Moist	4	SS	37	
		5	SS	48	0 85 12 3
	Wet	6	SS	52	
		7	SS	47	Spoon wet at 6.1m
297.9 7.9	**SAND** and **SILT**, trace clay Compact Brown to Grey Moist to Wet	8	SS	28	0 49 47 4
296.2 9.6	**SAND**, silty, some gravel, trace clay Dense to Very Dense (TILL)				

ELEVATION SCALE: 305, 304, 303, 302, 301, 300, 299, 298, 297, 296

DYNAMIC CONE PENETRATION RESISTANCE PLOT: 20 40 60 80 100

SHEAR STRENGTH kPa: ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE; 20 40 60 80 100

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L

WATER CONTENT (%): 20 40 60

UNIT WEIGHT γ kN/m^3

GROUND WATER CONDITIONS

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-01 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 297.4 E 290 374.6 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.06 - 2019.05.06 LATITUDE 44.287537 LONGITUDE -79.680747 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, silty, some gravel, trace clay Dense to Very Dense Brown Moist (TILL)		9	SS	39						
294.8			10	SS	100/ 0.200		295				Spoon bouncing at 11.0m
11.0	END OF BOREHOLE AT 11.0m. BOREHOLE OPEN AND WATER LEVEL AT 6.0m UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen. WATER LEVEL READINGS DATE DEPTH(m) ELEV.(m) 2019.06.04 5.5 300.3 2020.04.09 6.3 299.6										

$+^3$, $\times^3$: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-02 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 349.3 E 290 382.5 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.30 - 2019.05.30 LATITUDE 44.288004 LONGITUDE -79.680649 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
309.1	GROUND SURFACE									
0.0 / 308.8	**ASPHALT** (300mm)						309			
0.3 / 308.5	**SAND** and **GRAVEL** Brown Moist (FILL)		1	GS						
0.7	**SAND**, silty, some gravel, trace to some clay, oxidized stains Compact to Dense Brown Moist (FILL)		1	SS	14		308			
			2	SS	15					12 50 24 14
			3	SS	40		307			
306.2										
3.0 / 305.8	**SILT**, clayey, some sand, trace gravel Hard Brown Moist (FILL)		4	SS	39		306			
3.4	**SAND**, silty, trace gravel, trace clay Dense Brown Moist (FILL)									
305.0							305			
4.1	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)		5	SS	38					4 51 29 16
			6	SS	75		304			
							303			
302.0										
7.2	**SAND**, some silt, trace to some clay Very Dense Brown Moist						302			
			7	SS	85					
							301			
			8	SS	56	▽	300			

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-02 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 349.3 E 290 382.5 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.30 - 2019.05.30 LATITUDE 44.288004 LONGITUDE -79.680649 CHECKED BY SKP

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES						GR SA SI CL
	Continued From Previous Page										
	SAND, some silt, trace clay Very Dense Brown Moist						299				
			9	SS	61		298		○		0 66 34 (SI+CL)
			10	SS	51		297		○		
			11	SS	47		296		○		
294.8	Very Dense						295				
14.3	END OF BOREHOLE AT 14.3m. WATER LEVEL AT 9.8m UPON COMPLETION. BOREHOLE THEN CAVED-IN TO 9.1m. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG, AND AUGER CUTTINGS TO 0.3m, THEN ASPHALT PATCH TO SURFACE.										

+^{3}, ×^{3}: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-03 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 416.9 E 290 351.8 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.07 - 2019.05.07 LATITUDE 44.288612 LONGITUDE -79.681037 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
305.4	GROUND SURFACE										
0.0	**TOPSOIL** (150mm)										
0.2	**SAND** and **SILT**, trace gravel Loose to Compact Brown Moist (FILL)		1	SS	7		305		○		
			2	SS	16				○		
303.9							304				
1.4	**SILT**, trace sand, trace to some clay Dense Brown Moist		3	SS	40				○		
			4	SS	34		303		○		0 8 82 10
			5	SS	45		302		○		
301.3											
4.1	**SAND**, silty, trace gravel, trace to some clay Very Dense to Dense Brown Moist to Wet (TILL)		6	SS	73		301		○		0 58 34 8
			7	SS	42	▽	299		○		
			8	SS	42		298		○		
							297				
							296		○		1 61 22 16

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-03 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 416.9 E 290 351.8 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.07 - 2019.05.07 LATITUDE 44.288612 LONGITUDE -79.681037 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, silty, trace gravel, trace to some clay Very Dense Brown Moist to Wet (TILL)		9	SS	91		295				
294.4			10	SS	100/ 0.175				○		
11.0	END OF BOREHOLE AT 11.0m. WATER LEVEL AT 6.0m UPON COMPLETION. BOREHOLE THEN CAVED-IN TO 6.4m. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG AND AUGER CUTTINGS TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-04 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 447.0 E 290 343.3 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.07 - 05/07/2019+ LATITUDE 44.288883 LONGITUDE -79.681143 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH kPa (○ UNCONFINED, ● QUICK TRIAXIAL, + FIELD VANE, × LAB VANE)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
304.9	GROUND SURFACE							20 40 60 80 100	20 40 60		
0.0	**TOPSOIL** (125mm)										
0.1	**SAND** and **SILT**, some organics Loose Brown Moist (FILL)		1	SS	8				○		
304.2											
0.7	**SAND**, silty, trace gravel, some clay, silt seams Dense Brown Moist (TILL)		2	SS	36		304		○		4 63 22 11
			3	SS	46		303		○		
302.7											
2.2	**SAND** and **SILT**, trace gravel, trace clay Very Dense Brown Moist (TILL)		4	SS	79		302		○		5 42 45 8
			5	SS	68				○		3 52 36 9
300.8							301				
4.1	**SAND**, trace silt, trace clay Dense to Very Dense Brown Moist		6	SS	49		300		○		
	Wet		7	SS	69		299		○		
			8	SS	91		297		○		0 94 6 (SI+CL)
	Moist to Wet		9	SS	100		296		○		
							295				

Continued Next Page

+ 3, × 3 : Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-04 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 447.0 E 290 343.3 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.07 - 05/07/2019+ LATITUDE 44.288883 LONGITUDE -79.681143 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, trace silt, trace clay Very Dense Brown Moist to Wet										
			10	SS	86		294		○		
293.6											
11.3	END OF BOREHOLE AT 11.3m. WATER LEVEL AT 6.4m UPON COMPLETION. BOREHOLE CAVED-IN TO 8.2m. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen.										

WATER LEVEL READINGS

DATE	DEPTH(m)	ELEV.(m)
2019.06.04	5.6	299.3
2020.04.09	5.8	299.1

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-05 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 497.8 E 290 356.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.29 - 2019.05.29 LATITUDE 44.289341 LONGITUDE -79.680983 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
312.0	GROUND SURFACE							20 40 60 80 100	20 40 60		
0.0	**ASPHALT** (150mm)										
0.2	**SAND** and **GRAVEL** Brown Moist		1	GS							
311.3	(FILL)						311				
0.7	**SAND**, silty, trace gravel, some clay Compact to Very Dense Brown Moist (FILL)		1	SS	30						
			2	SS	24		310				
			3	SS	30		309				
			4	SS	51						2 61 25 12
			5	SS	32		308				
			6	SS	30		307				
	Dark brown clay pockets		7	SS	45		306				
303.3							305				
8.7	**SAND**, silty, trace gravel, some clay, occasional cobbles Very Dense Brown Moist (TILL)		8	SS	100/ 0.150		304				
302.0							303				Augers grinding at 9.4m Spoon bouncing
							302				

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-05 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 497.8 E 290 356.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.29 - 2019.05.29 LATITUDE 44.289341 LONGITUDE -79.680983 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
10.0	**SILT**, clayey with sand, trace gravel Hard Brown Moist (TILL)		9	SS	88		301				3 40 36 21
300.3											
11.7	**SAND**, silty, trace gravel, trace to some clay Very Dense Brown (TILL)		10	SS	93		300				
298.7						▽	299				
13.3	**SAND**, trace silt, trace clay Very Dense Brown Wet		11	SS	74		298				0 93 7 (SI+CL)
297.7											
14.3	END OF BOREHOLE AT 14.3m. WATER LEVEL AT 13.1m UPON COMPLETION. BOREHOLE THEN CAVED-IN TO 12.8m. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG, AND AUGER CUTTINGS TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-06 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 630.3 E 290 329.6 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.16 - 2019.05.16 LATITUDE 44.290533 LONGITUDE -79.681320 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
312.4	GROUND SURFACE										
0.0	**ASPHALT** (125mm)										
0.1	**SAND** and **GRAVEL** Brown Moist (FILL)						312				
311.7											
0.7	**SAND**, silty, trace gravel, some clay Compact to Dense Brown Moist (FILL)		1	SS	17		311				
			2	SS	35						
310.2											
2.2	Clayey silt		3	SS	19		310				2 53 25 20
309.5											
3.0			4	SS	36		309				
			5	SS	40		308				
			6	SS	32		307				
305.8							306				
6.6	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)						305				
	Sand layer, wet		7	SS	34		304				6 62 17 15
	cobbles and boulders		8	SS	58		303				Augers grinding at 8.8m. Borehole did not advance beyond 8.9m depth. No recovery at SS8 Borehole was moved 5m north.
302.5											

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-06 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 630.3 E 290 329.6 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.16 - 2019.05.16 LATITUDE 44.290533 LONGITUDE -79.681320 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
9.9	**SAND**, silty, trace gravel, trace to some clay Very Dense Brown Moist (TILL)		9	SS	50		302		○		
300.7							301				
11.7	**SILT**, clayey with sand, trace gravel Very Stiff Brown Moist (TILL)		10	SS	29		300		⊣○⊢		2 46 30 22
299.2							299				
13.3	**SAND**, silty, trace gravel, trace to some clay Compact Brown Moist (TILL)		11	SS	27				○		
298.1											
14.3	END OF BOREHOLE AT 14.3m. BOREHOLE DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH HOLEPLUG AND AUGER CUTTINGS TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-07 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 668.9 E 290 298.3 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.14 - 2019.05.14 LATITUDE 44.290879 LONGITUDE -79.681713 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
303.8	GROUND SURFACE								
0.0	**TOPSOIL** (150mm)								
0.2 / 303.2	**SILT**, some sand,, some clay, some organics Compact Brown Moist (FILL)		1	SS	13				
0.6	**SAND**, silty, some clay, trace to some gravel Compact to Dense Brown Moist (TILL) Clayey Silt inclusion at 1.6m		2	SS	26		303		
			3	SS	15		302		10 51 23 16
			4	SS	36		301		
300.9									
2.9	**SILT**, clayey, with sand, trace gravel Very Stiff Brown Moist (TILL)		5	SS	17		300		5 44 29 22
299.7									
4.1	**SAND**, silty, trace gravel, some clay Very Dense Brown Moist (TILL)		6	SS	100/ 0.300	▼	299		
			7	SS	100/ 0.275		298		5 56 22 17
296.7							297		
7.1	**SAND**, some silt, trace gravel Loose Brown Wet		8	SS	4		296		
295.1									
8.7	Compact		9	SS	30		295		
							294		

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa 20 40 60 80 100
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE

PLASTIC LIMIT w_P NATURAL MOISTURE CONTENT w LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-07 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 668.9 E 290 298.3 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.14 - 2019.05.14 LATITUDE 44.290879 LONGITUDE -79.681713 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH kPa (○ UNCONFINED, ● QUICK TRIAXIAL, + FIELD VANE, × LAB VANE)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
293.2	**SAND**, some silt, trace gravel Compact Brown Wet		10	SS	29				○		
10.5	END OF BOREHOLE AT 10.5m WATER LEVEL AT 6.7m UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen. WATER LEVEL READINGS DATE DEPTH(m) ELEV.(m) 2019.06.04 4.7 299.1 2020.04.09 4.8 299.0										

$+^3$, $\times^3$: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-08 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 718.2 E 290 286.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.10 - 2019.05.10 LATITUDE 44.291322 LONGITUDE -79.681866 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
304.9	GROUND SURFACE								
0.0	**TOPSOIL** (200mm)								
0.2	**SAND**, silty, trace gravel, some clay Loose Brown Moist (TILL)		1	SS	9				
304.2									
0.7	Dense to Very Dense		2	SS	53		304		
			3	SS	49		303		4 54 29 13
			4	SS	49		302		
			5	SS	88		301		
300.9									
4.0	**SILT**, some sand, some clay Very Dense Brown Moist		6	SS	76		300		0 14 70 16
299.3									
5.6	**SAND**, some silt, trace gravel Very Dense Brown Moist to Wet		7	SS	100/ 0.275	▽	299		
			8	SS	100/ 0.250		298		
							297		
							296		
	Loose Wet		9	SS	9		295		

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa 20 40 60 80 100
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE

PLASTIC LIMIT w_P NATURAL MOISTURE CONTENT w LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-08 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 718.2 E 290 286.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.10 - 2019.05.10 LATITUDE 44.291322 LONGITUDE -79.681866 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, trace silt, trace clay Very Dense Brown Wet										
293.8			10	SS	100/ 0.275		294		○		0 97 3 (SI+CL)
11.1	END OF BOREHOLE AT 11.1m. WATER LEVEL AT 5.8m UPON COMPLETION. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG AND AUGER CUTTINGS TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-09 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 769.9 E 290 302.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2018.05.15 - 2019.05.15 LATITUDE 44.291788 LONGITUDE -79.681668 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
310.7	GROUND SURFACE										
0.0	**ASPHALT** (175mm)										
0.2	**SAND** and **GRAVEL** Brown Moist (FILL)										
309.9							310				
0.8	**SAND**, silty, trace gravel, some clay Compact to Dense Brown to Black Moist (FILL)		1	SS	13						4 54 26 16
			2	SS	37		309				
308.5											
2.2	Clayey silt		3	SS	28						2 52 26 20
307.7							308				
3.0			4	SS	17						
306.6							307				
4.1	**SAND**, silty, some clay, trace gravel Very Dense to Dense Brown Moist (TILL)		5	SS	58		306				
			6	SS	32		305				
304.7											
6.0	**CLAY**, silty, with sand, trace gravel Hard Brown Moist (TILL)		7	SS	39		304				4 41 28 27
303.5											
7.2	**SAND**, silty, trace gravel, some clay Very Dense Brown Moist (TILL)		8	SS	68		303				
							302				
			9	SS	55						Augers grinding
							301				

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-09 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 769.9 E 290 302.2 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2018.05.15 - 2019.05.15 LATITUDE 44.291788 LONGITUDE -79.681668 CHECKED BY SKP

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES						GR SA SI CL
	Continued From Previous Page										
	SAND, silty, trace gravel, some clay Very Dense Brown Moist (TILL)						300				
			10	SS	69				○		6 48 29 17
							299				
298.1			11	SS	100/ 0.250				○		
12.6	END OF BOREHOLE AT 12.6m. BOREHOLE DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH AUGER CUTTINGS AND CONCRETE TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-10 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 807.4 E 290 271.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.292126 LONGITUDE -79.682049 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
304.5	GROUND SURFACE								
0.0	**TOPSOIL** (200mm)								
0.2	**SAND** and **SILT**, trace gravel, trace clay Compact Brown Moist (FILL)		1	SS	11				
303.8 0.7	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)		2	SS	33				
			3	SS	36				
	Clayey silt inclusion at 2.4m		4	SS	54				4 55 27 14
			5	SS	42				
			6	SS	76	▽			Augers grinding at 5.3m
			7	SS	79				No recovery Spoon bouncing at 6.1m
			8	SS	100/ 0.225				1 56 27 16
			9	SS	100/ 0.275				4 54 24 18

SOIL PROFILE | SAMPLES

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa 20 40 60 80 100
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

ELEVATION SCALE 304 303 302 301 300 299 298 297 296 295

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-10 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 807.4 E 290 271.9 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.292126 LONGITUDE -79.682049 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (20 40 60 80 100): ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, silty, trace gravel, some clay Very Dense Brown Moist (TILL)						294				
293.5			10	SS	100/ 0.200				○		
11.0	END OF BOREHOLE AT 11.0m. WATER LEVEL AT 5.2m UPON COMPLETION. BOREHOLE CAVED-IN TO 9.1m. BOREHOLE BACKFILLED WITH BENTONITE HOLEPLUG AND AUGER CUTTINGS TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-11 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 856.6 E 290 265.8 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.09 - 2019.05.09 LATITUDE 44.292568 LONGITUDE -79.682126 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
303.8	GROUND SURFACE								
0.0	**TOPSOIL** (150mm)								
0.2	**SAND** and **SILT**, trace gravel, trace clay Compact Brown Moist (FILL)		1	SS	13				
303.1									
0.7	**SAND**, silty, trace to some gravel, some clay Very Dense Brown Moist (TILL)		2	SS	84		303		6 49 28 17 Augers grinding from 3.0m to 4.5m
			3	SS	100/ 0.275		302		
			4	SS	66		301		
			5	SS	63		300		
			6	SS	100/ 0.225	▼	299		14 54 19 13
			7	SS	91		298		
297.4									
6.4	**CLAY**, silty, with sand, trace gravel Hard Brown Moist (TILL)						297		2 28 31 39
296.3									
7.5	**SAND**, some gravel, trace to some silt and clay Very Dense Brown Moist to Wet		8	SS	100/ 0.225		296		12 73 15 (SI+CL)
294.6							295		
9.1	**SAND**, silty, trace gravel, some clay Very Dense Brown Moist (TILL)		9	SS	100/ 0.150		294		

DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100

SHEAR STRENGTH kPa 20 40 60 80 100
○ UNCONFINED + FIELD VANE
● QUICK TRIAXIAL × LAB VANE

PLASTIC LIMIT w_P | NATURAL MOISTURE CONTENT w | LIQUID LIMIT w_L
WATER CONTENT (%) 20 40 60

Continued Next Page

$+^3$, $\times^3$: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-11 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 856.6 E 290 265.8 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.09 - 2019.05.09 LATITUDE 44.292568 LONGITUDE -79.682126 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
292.7	**SAND**, silty, trace gravel, some clay Very Dense Brown Moist (TILL)		10	SS	100/ 0.200		293		○		
11.0	END OF BOREHOLE AT 11.0m WATER LEVEL AT 9.1m UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen.										

WATER LEVEL READINGS

DATE	DEPTH(m)	ELEV.(m)
2019.06.04	4.8	299.0
2020.04.09	4.6	299.1

$+^3$, $\times^3$: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-12 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 905.4 E 290 277.7 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.15 - 2019.05.15 LATITUDE 44.293007 LONGITUDE -79.681979 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
307.0	GROUND SURFACE										
0.0	**ASPHALT** (125mm)										
0.2	**SAND** and **GRAVEL** Brown Moist (FILL)										
306.2							306				
0.8	Clayey **SILT** with sand, trace gravel, trace silt Stiff to Very Stiff Brown Moist (FILL)		1	SS	12						4 46 29 21
			2	SS	21		305				
304.9											
2.1	**SAND**, silty, some gravel, some clay Compact to Dense Brown Moist (TILL)		3	SS	15		304				
			4	SS	17						15 44 21 20
							303				
			5	SS	35		302				
							301				
			6	SS	35						
							300				
			7	SS	29		299				
298.3											
8.7	**SILT**, clayey, with sand, trace gravel Hard Brown Moist (TILL)						298				
			8	SS	53						1 19 59 21
297.1											

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-12 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 905.4 E 290 277.7 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.15 - 2019.05.15 LATITUDE 44.293007 LONGITUDE -79.681979 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE) (20 40 60 80 100)	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L / WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
9.9	**SAND**, silty, trace gravel, trace clay Very Dense Brown Moist (TILL)		9	SS	100/ 0.300		296		○		
295.7											
11.3	END OF BOREHOLE AT 11.3m. BOREHOLE DRY UPON COMPLETION. BOREHOLE BACKFILLED WITH AUGER CUTTINGS TO 0.2m, THEN ASPHALT PATCH TO SURFACE.										

$+^3$, $\times^3$: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-13 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 946.8 E 290 252.4 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.293380 LONGITUDE -79.682296 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
302.8	GROUND SURFACE										
0.0	**TOPSOIL** (150mm)										
0.2	**SILT**, sandy, some organics Loose Brown Moist (FILL)		1	SS	6				○		
302.1											
0.7	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)		2	SS	78		302		○		
			3	SS	38		301		○		7 52 28 13
			4	SS	76		300		○		
299.9											
3.0	Compact		5	SS	25	▽	299		○		4 51 45 (SI+CL)
298.7											
4.1	Layer of sand, occasional cobbles Wet		6	SS	100/ 0.125		298		○		Spoon bouncing at 4.5m
			7	SS	100/ 0.250		297		○		Spoon bouncing at 5.5m No recovery at 6.0m
			8	SS	63		296				
							295		○		
			9	SS	79		294				
292.9							293		○		8 58 20 14 Augers grinding at 9.8m

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-13 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 946.8 E 290 252.4 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.293380 LONGITUDE -79.682296 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT / SHEAR STRENGTH kPa (○ UNCONFINED, ● QUICK TRIAXIAL, + FIELD VANE, × LAB VANE) 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
9.9	END OF BOREHOLE AT 9.9m. WATER LEVEL AT 3.7m UPON COMPLETION. BOREHOLE CAVED-IN AT 8.2m. BOREHOLE BACKFILLED WITH HOLEPLUG AND AUGER CUTTINGS TO SURFACE.										

+^{3}, ×^{3}: Numbers refer to Sensitivity

20 / 15 5 / 10 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-14 1 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 999.0 E 290 245.4 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.293849 LONGITUDE -79.682386 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100 / SHEAR STRENGTH kPa ○ UNCONFINED ● QUICK TRIAXIAL + FIELD VANE × LAB VANE 20 40 60 80 100	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L WATER CONTENT (%) 20 40 60	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
302.0	GROUND SURFACE									
0.0	**TOPSOIL** (125mm)									
0.1	**SAND** and **SILT** some clay Loose to Compact Brown Moist (FILL)		1	SS	9					
300.9			2	SS	31		301			
1.1	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist (TILL)		3	SS	60		300			
			4	SS	64					9 56 24 11
	occasional cobbles at 3.0m		5	SS	100/ 0.200		299			Spoon bouncing at 3.4m
297.9							298			
4.1	**SILT**, clayey, with sand, trace gravel Hard Brown Moist (TILL)		6	SS	61		297			3 46 35 16
296.4										
5.6	**SAND**, silty, trace gravel, some clay Dense to Very Dense Brown Moist to Wet (TILL)		7	SS	40		296			
							295			
			8	SS	100/ 0.275		294			
							293			
			9	SS	100/ 0.225					

Continued Next Page

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

20 / 15 ⊕ 5 / 10 (%) STRAIN AT FAILURE

Ministry of Transportation
Ontario

THURBER

RECORD OF BOREHOLE No HF-14 2 OF 2 METRIC

GWP# 2493-15-00 LOCATION MTM NAD 83 Zone10: N 4 905 999.0 E 290 245.4 ORIGINATED BY BL

DIST Central HWY 400 BOREHOLE TYPE Hollow Stem Augers COMPILED BY BH

DATUM Geodetic DATE 2019.05.08 - 2019.05.08 LATITUDE 44.293849 LONGITUDE -79.682386 CHECKED BY SKP

ELEV / DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: "N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / SHEAR STRENGTH kPa (20 40 60 80 100): ○ UNCONFINED, ● QUICK TRIAXIAL, + FIELD VANE, × LAB VANE	PLASTIC LIMIT w_P / NATURAL MOISTURE CONTENT w / LIQUID LIMIT w_L — WATER CONTENT (%) (20 40 60)	UNIT WEIGHT γ kN/m^3	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
	Continued From Previous Page										
	SAND, silty, trace gravel, some clay Very Dense Brown Moist (TILL)										
290.8			10	SS	79		291		○		0 59 23 18
11.3	END OF BOREHOLE AT 11.3m WATER LEVEL AT 7.6m UPON COMPLETION. Piezometer installation consists of 25mm diameter Schedule 40 PVC pipe with a 3.0m slotted screen.										

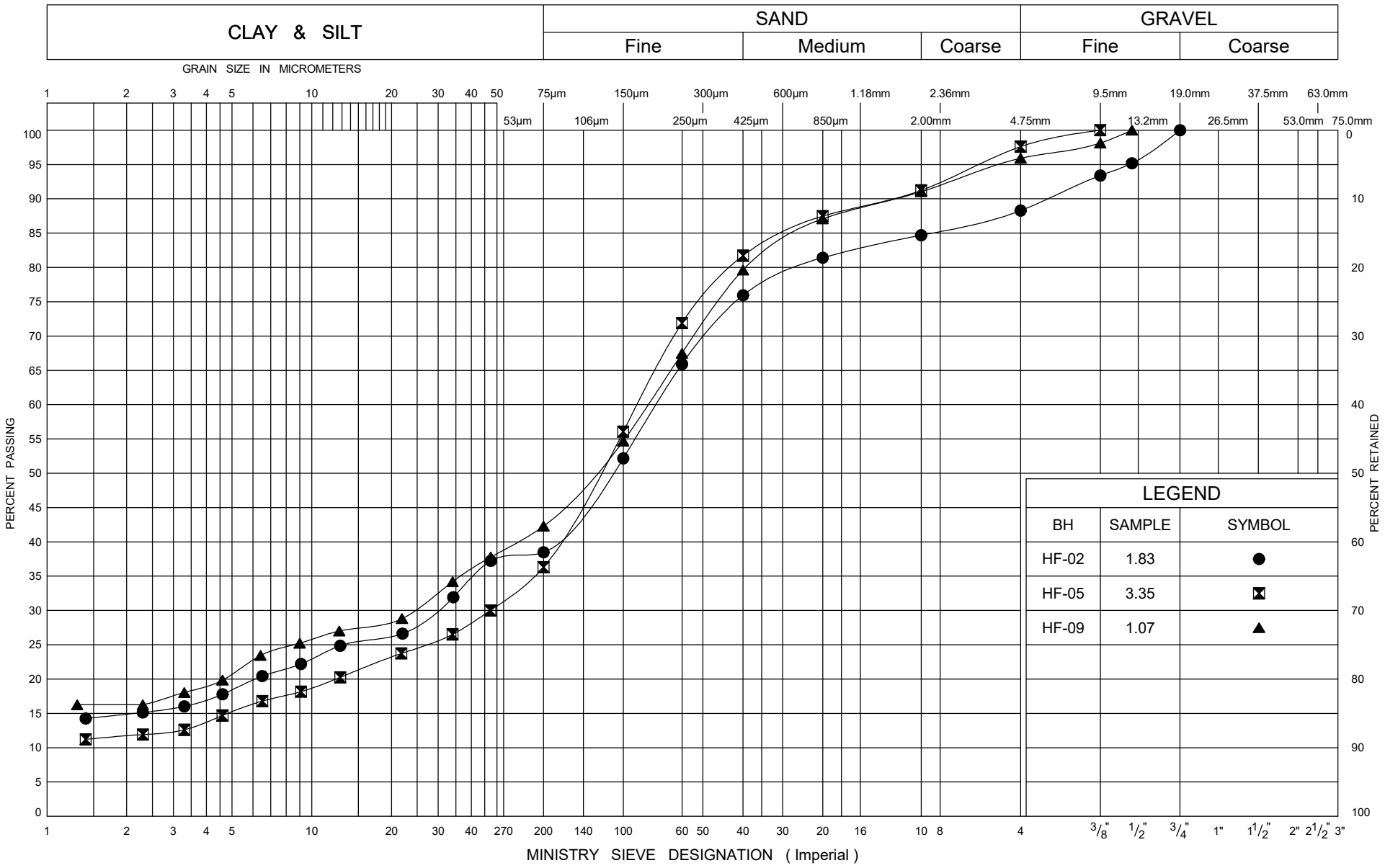
WATER LEVEL READINGS

DATE	DEPTH(m)	ELEV.(m)
2019.06.04	4.6	297.4
2020.04.09	4.4	297.6

+ ^{3}, × ^{3}: Numbers refer to Sensitivity

15 20 10 5 (%) STRAIN AT FAILURE

ONTMT4S2 MTO-21110.GPJ 2017TEMPLATE(MTO).GDT 4/28/20



Ministry of Transportation
Ontario

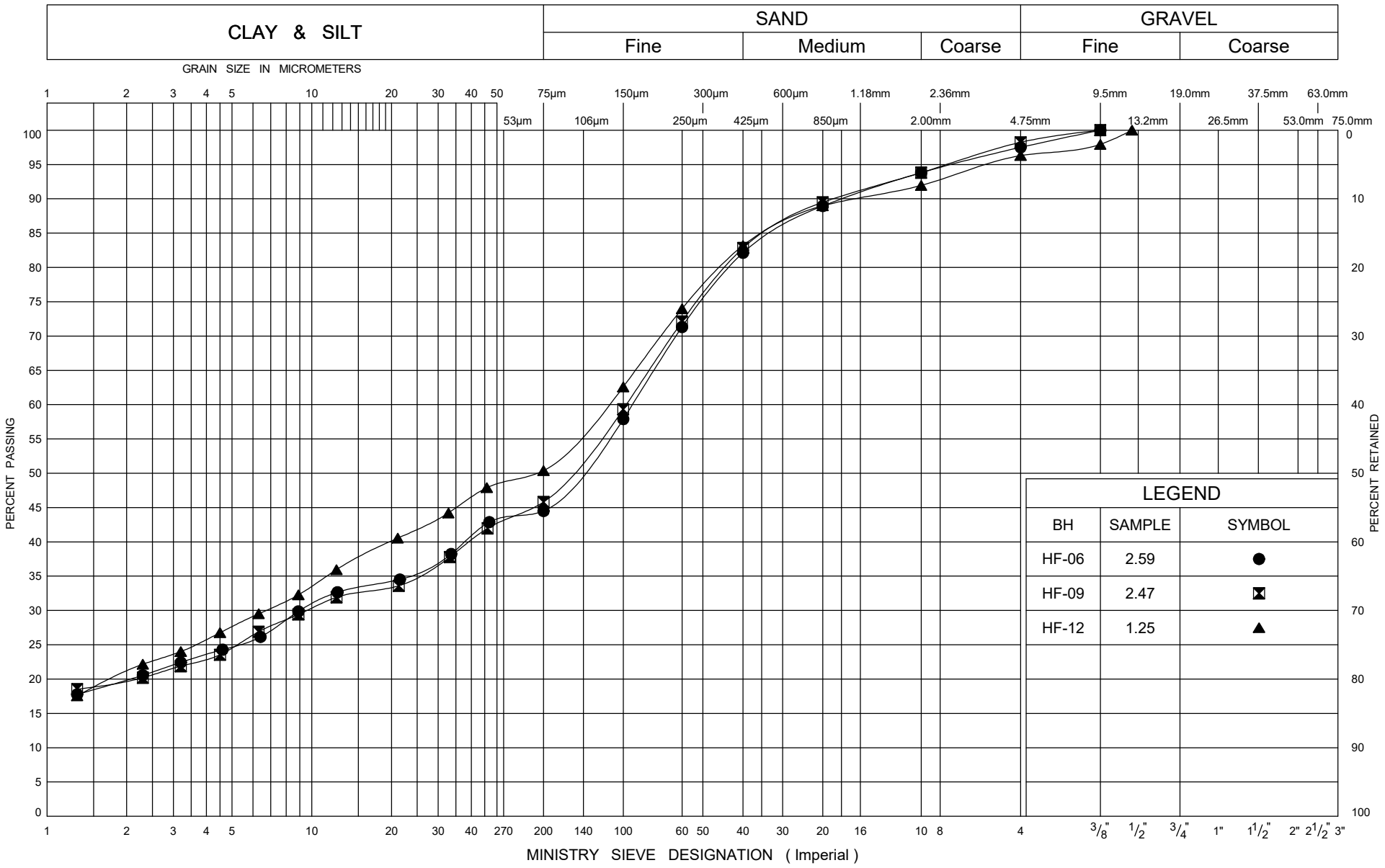
GRAIN SIZE DISTRIBUTION

Silty SAND Fill

FIG No B1

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/18/19



Ministry of Transportation
Ontario

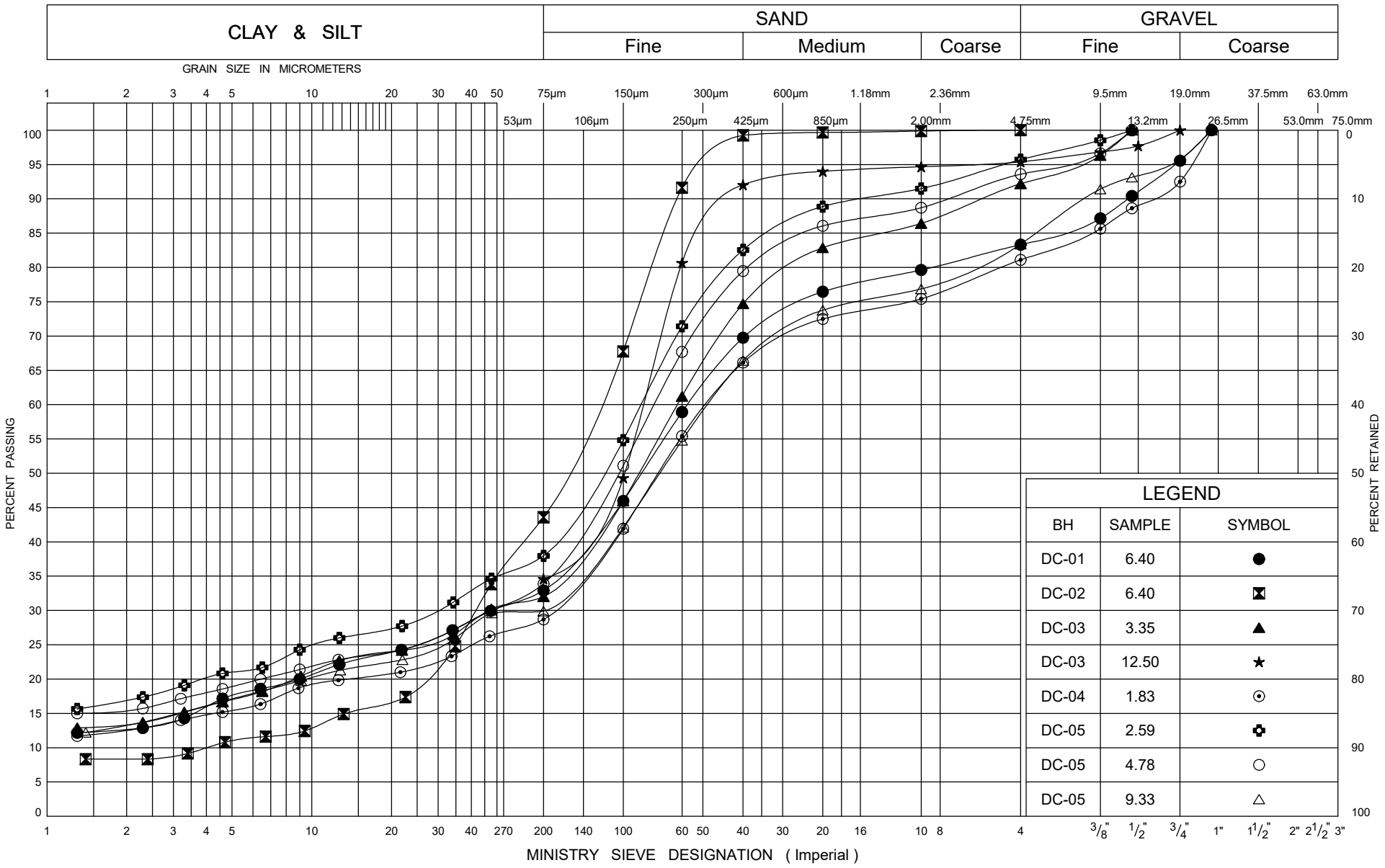
GRAIN SIZE DISTRIBUTION

Clayey SILT Fill

FIG No B2

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19



Ministry of Transportation
Ontario

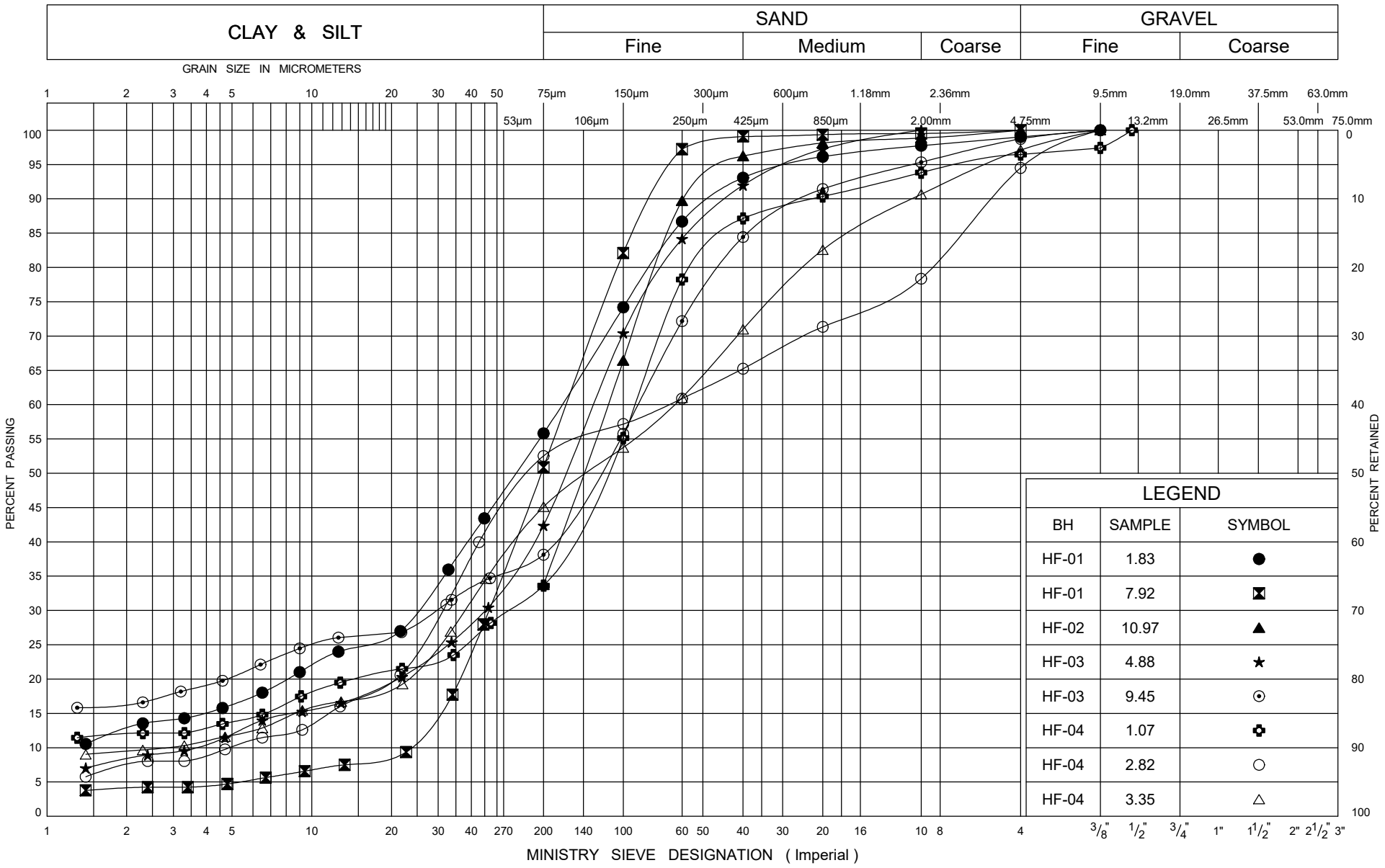
GRAIN SIZE DISTRIBUTION

Silty SAND Till

FIG No B3

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19



Ministry of Transportation
Ontario

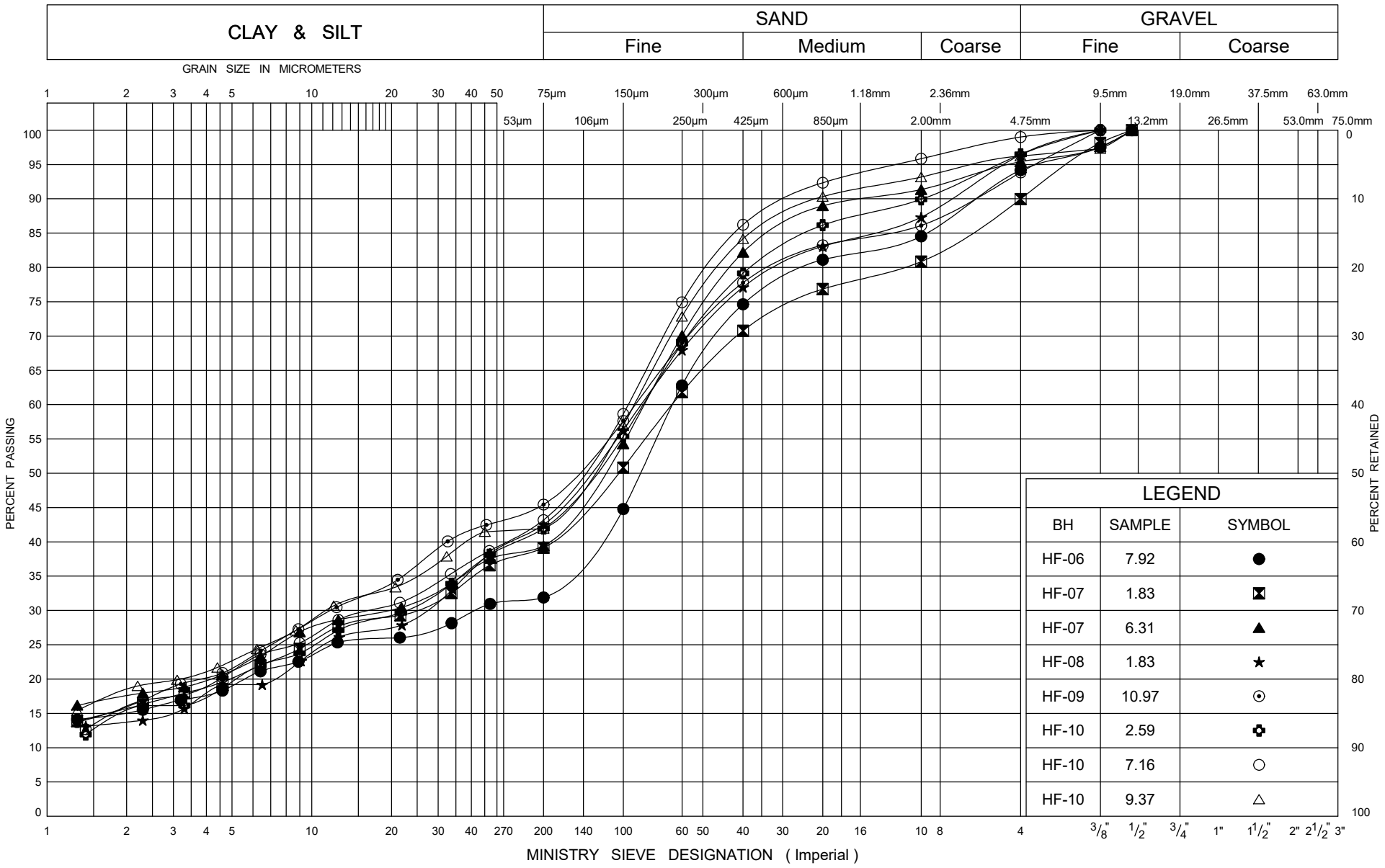
GRAIN SIZE DISTRIBUTION

Silty SAND Till

FIG No B4

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19



Ministry of Transportation
Ontario

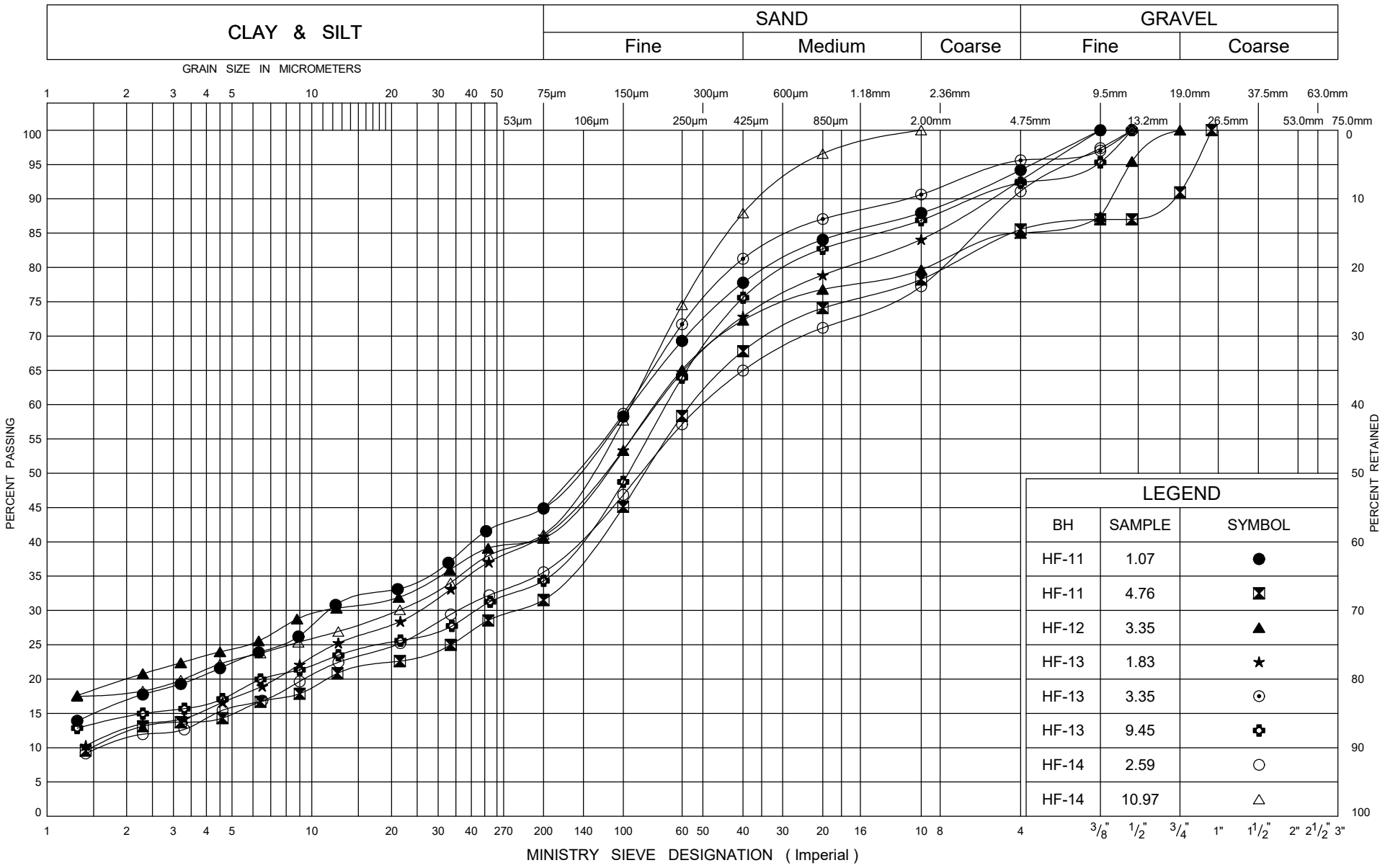
GRAIN SIZE DISTRIBUTION

Silty SAND Till

FIG No B5

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19



Ministry of Transportation
Ontario

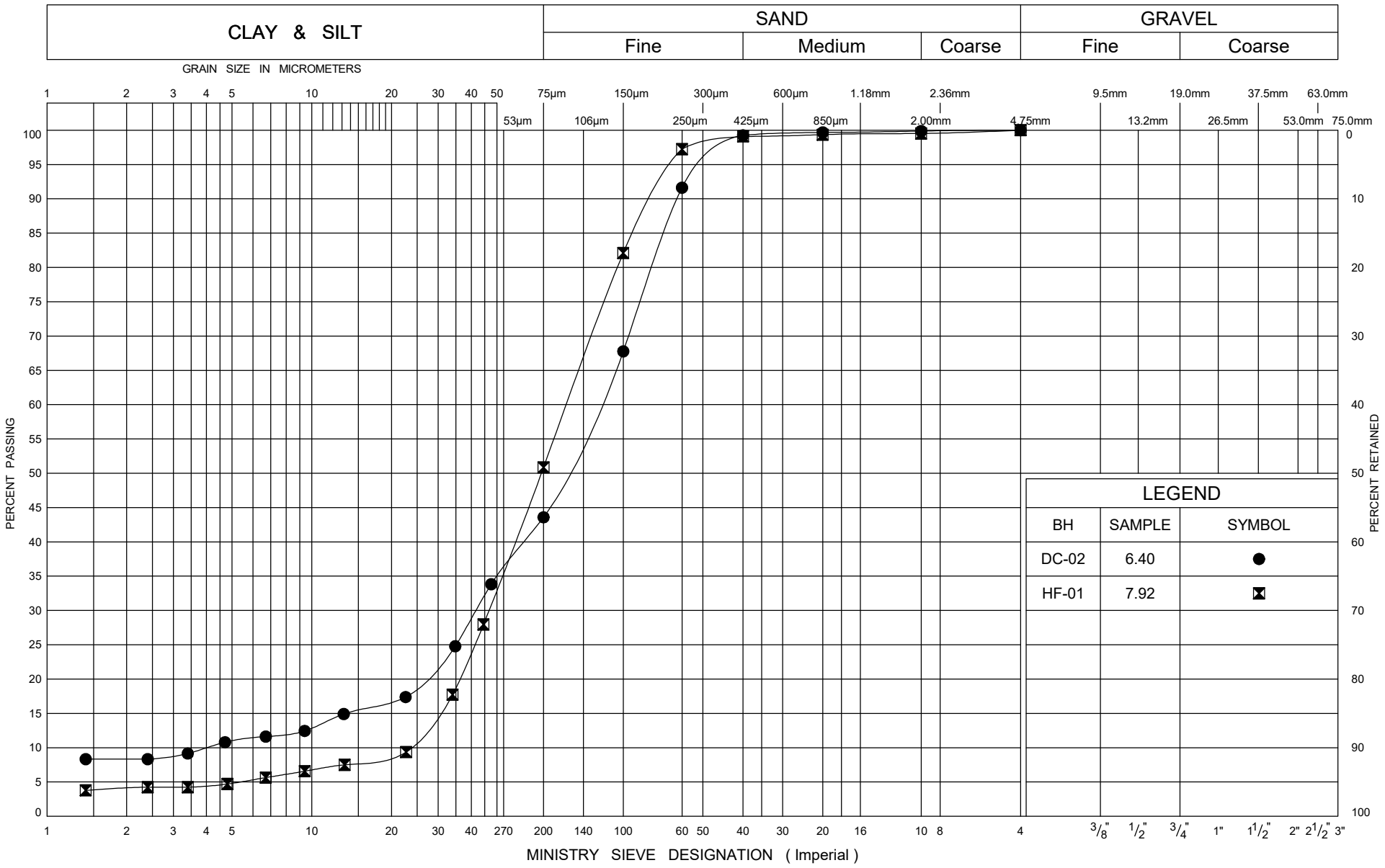
GRAIN SIZE DISTRIBUTION

Silty SAND Till

FIG No B6

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19



Ministry of Transportation
Ontario

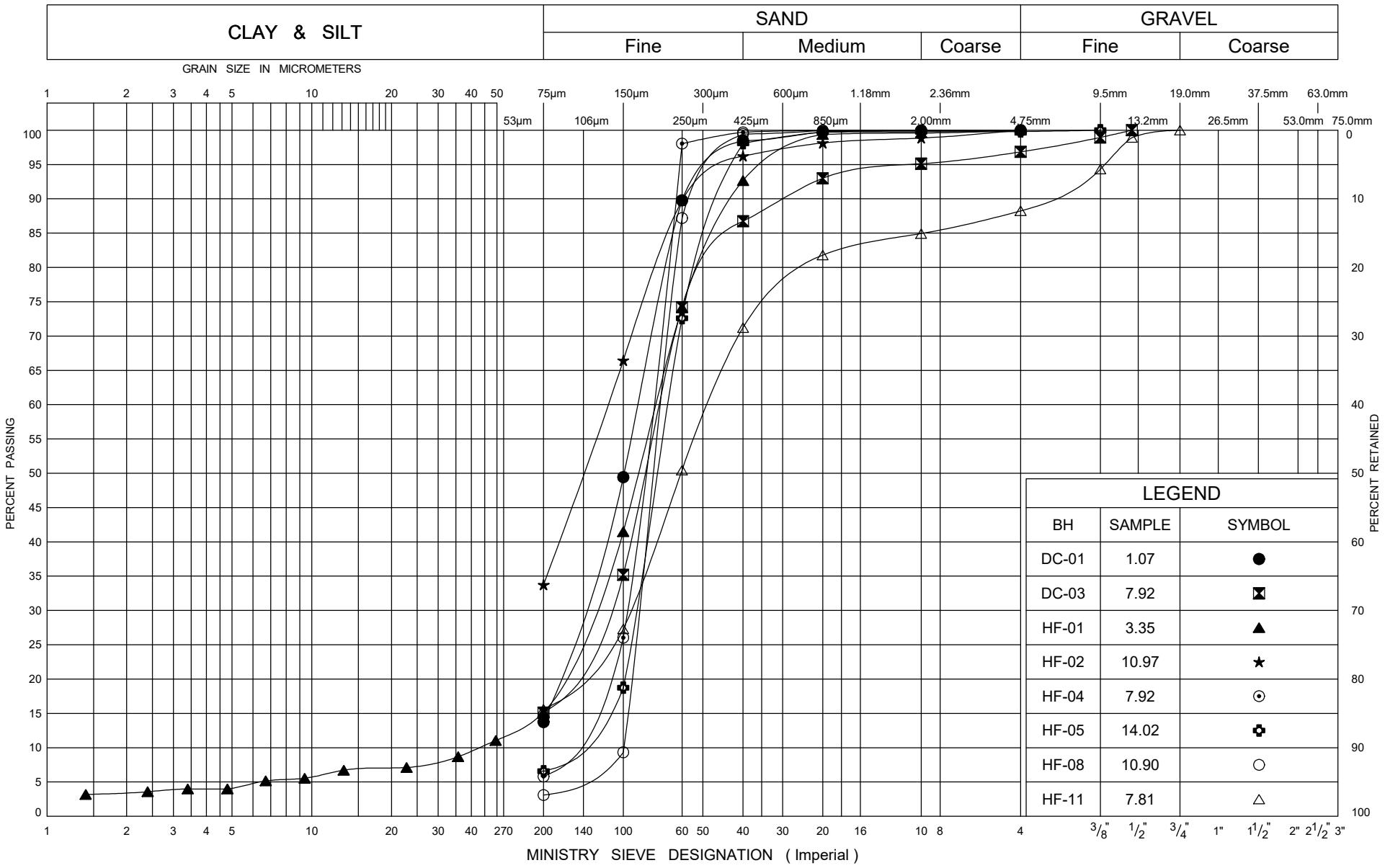
GRAIN SIZE DISTRIBUTION

SAND and SILT

FIG No B7

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/18/19



Ministry of Transportation
Ontario

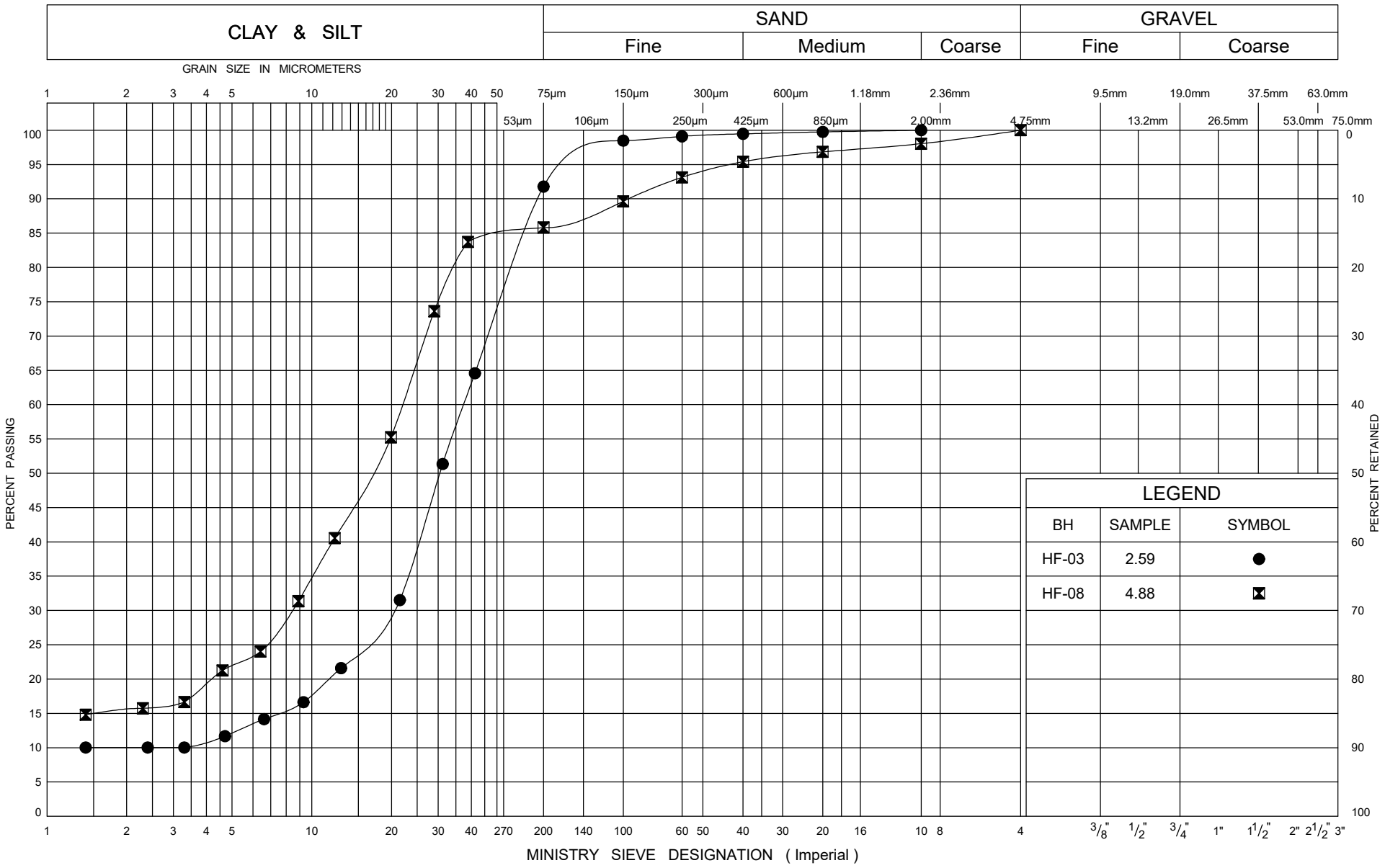
GRAIN SIZE DISTRIBUTION

SAND

FIG No B8

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/26/19



Ministry of Transportation
Ontario

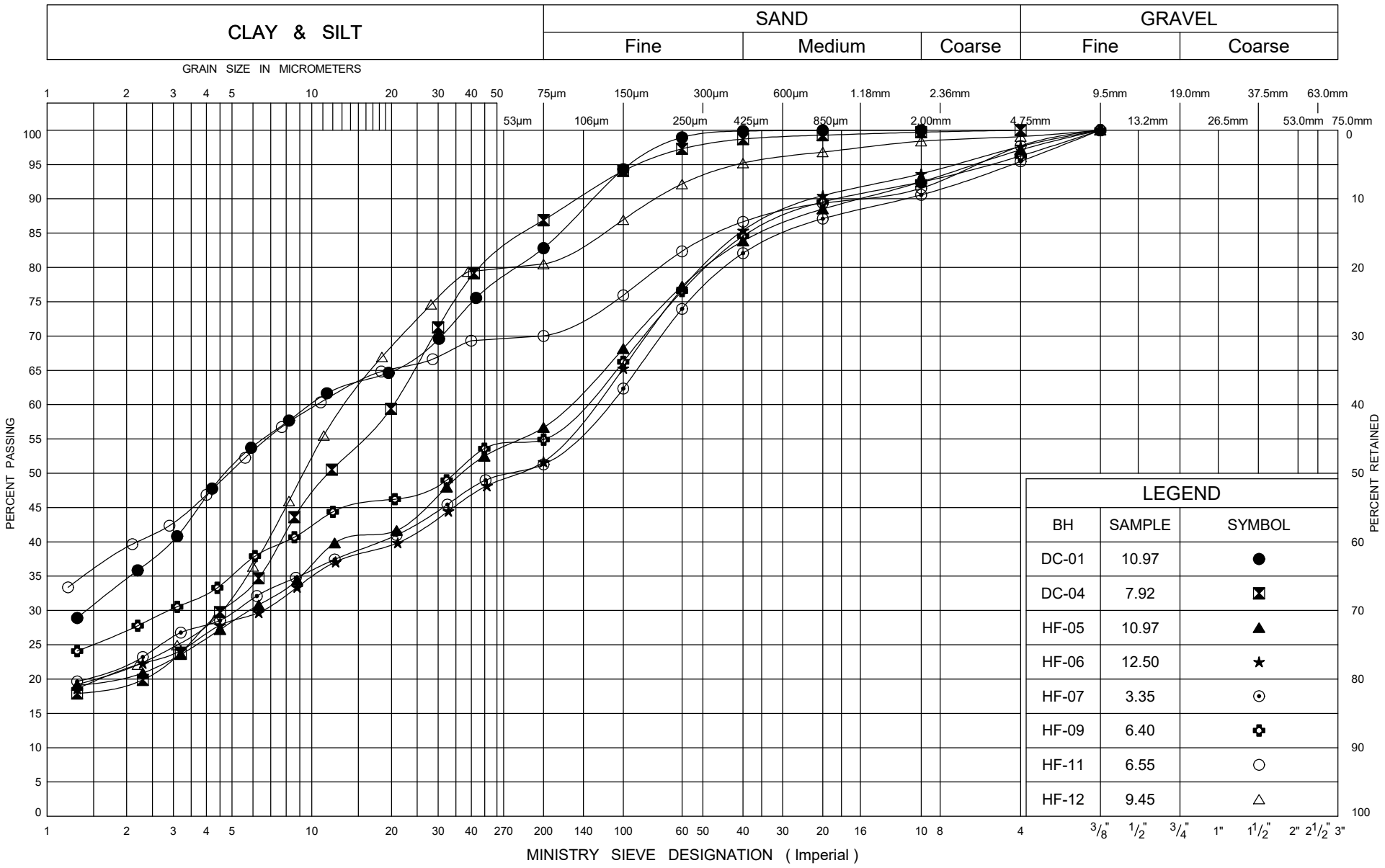
GRAIN SIZE DISTRIBUTION

SILT

FIG No B9

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/26/19



Ministry of Transportation
Ontario

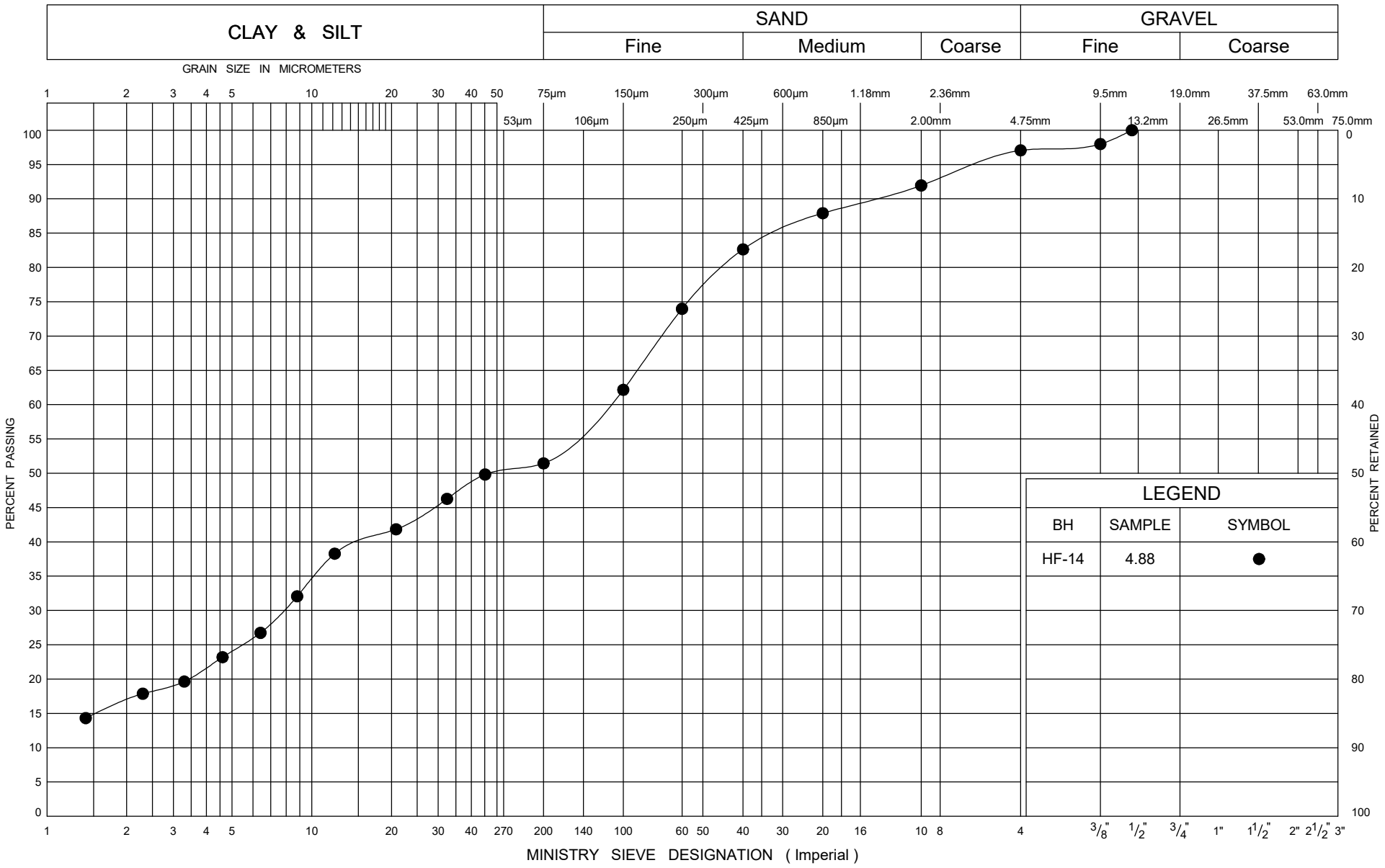
GRAIN SIZE DISTRIBUTION

Silty CLAY Till to Clayey SILT Till

FIG No B10

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/26/19



Ministry of Transportation
Ontario

GRAIN SIZE DISTRIBUTION

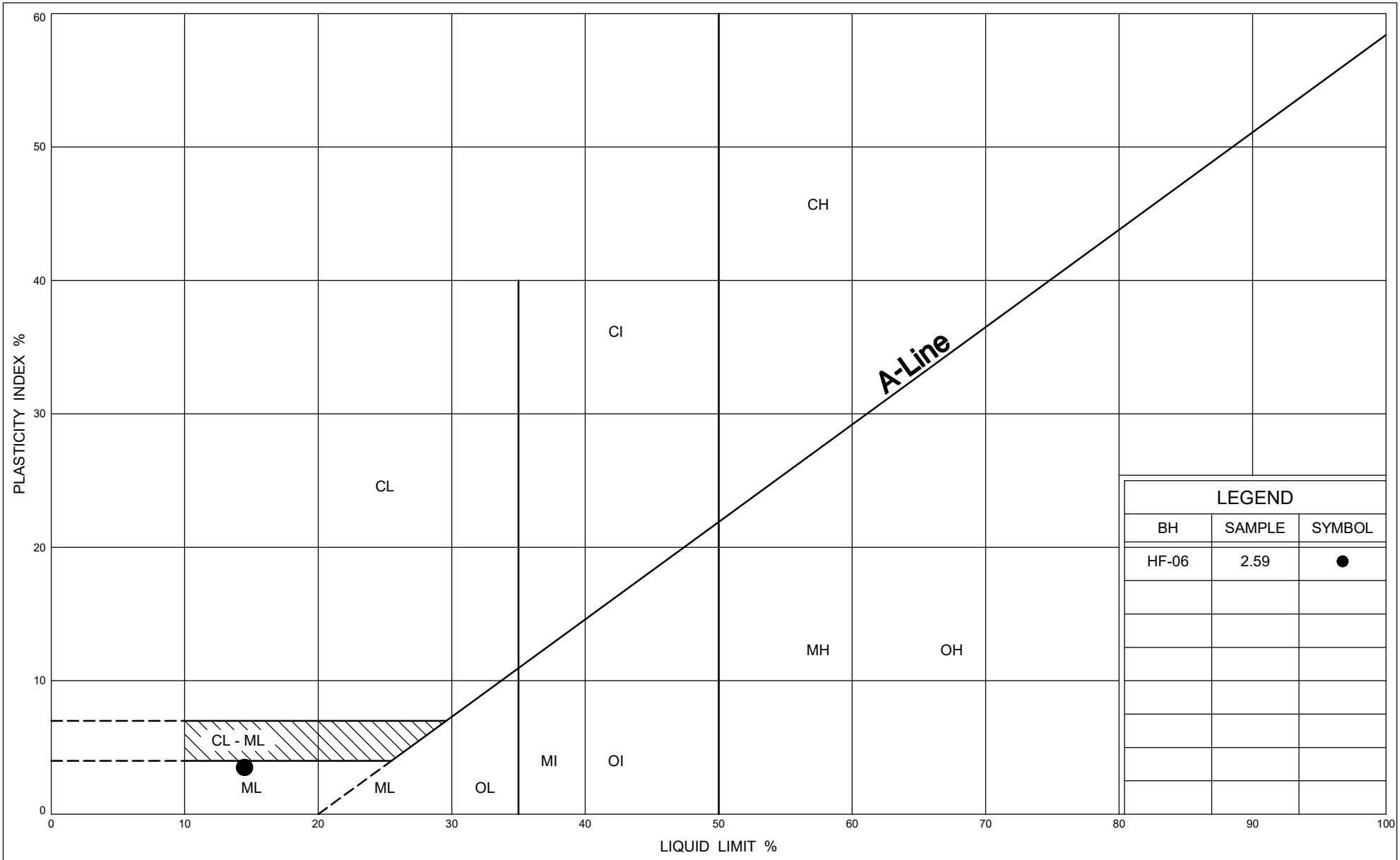
Silty CLAY Till to Clayey SILT Till

FIG No B11

W P 2493-15-00

ONTARIO MOT GRAIN SIZE 2 MTO-21110.GPJ ONTARIO MOT.GDT 7/26/19

Oct 75, FF - S - 21



ONTARIO MOT PLASTICITY CHART MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19

Ministry of Transportation
Ontario

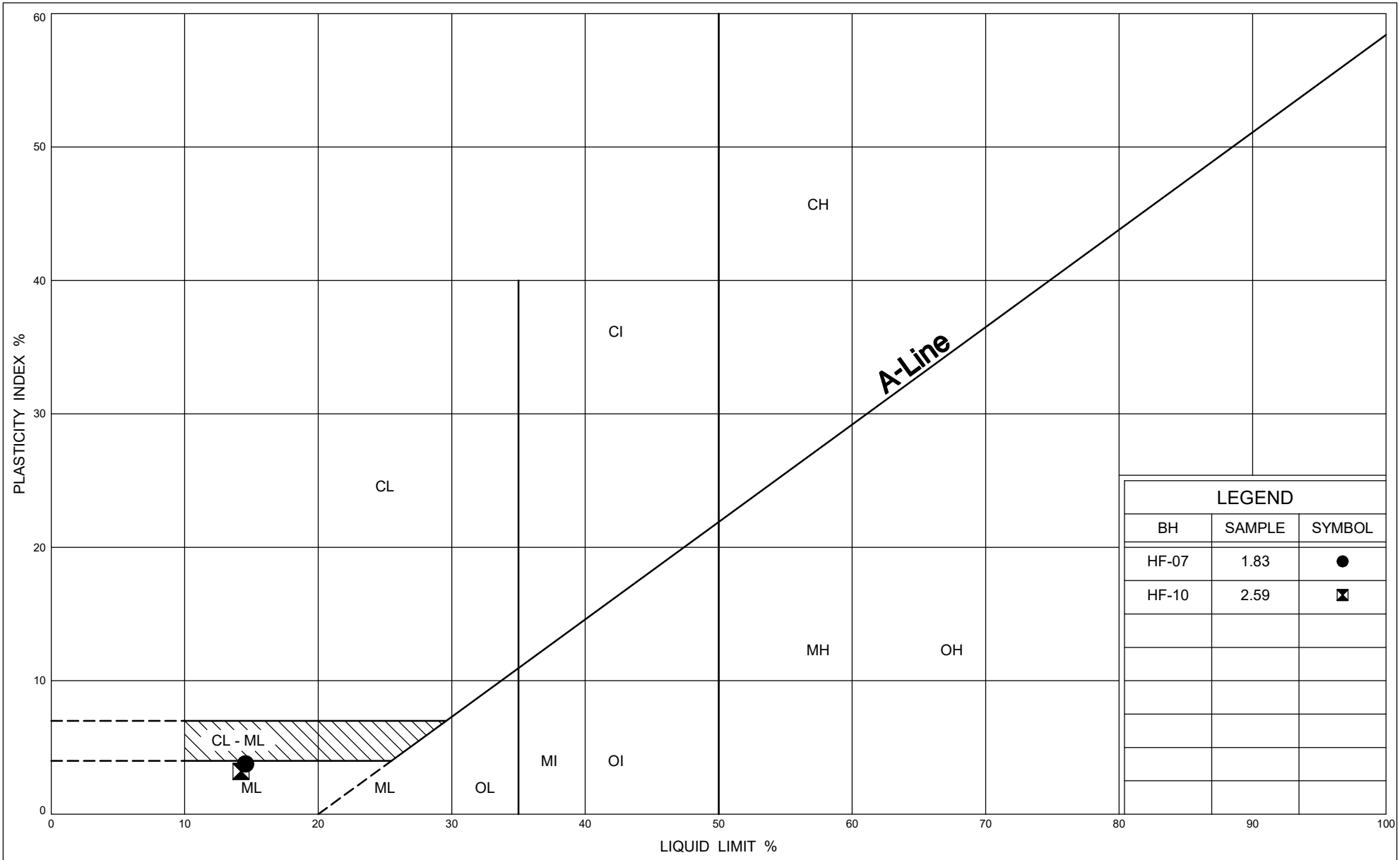
PLASTICITY CHART

Clayey SILT Zone in the Silty SAND Fill

FIG No B12

W P 2493-15-00

Oct 75, FF - S - 21



ONTARIO MOT PLASTICITY CHART MTO-21110.GPJ ONTARIO MOT.GDT 7/25/19

Ministry of Transportation
Ontario

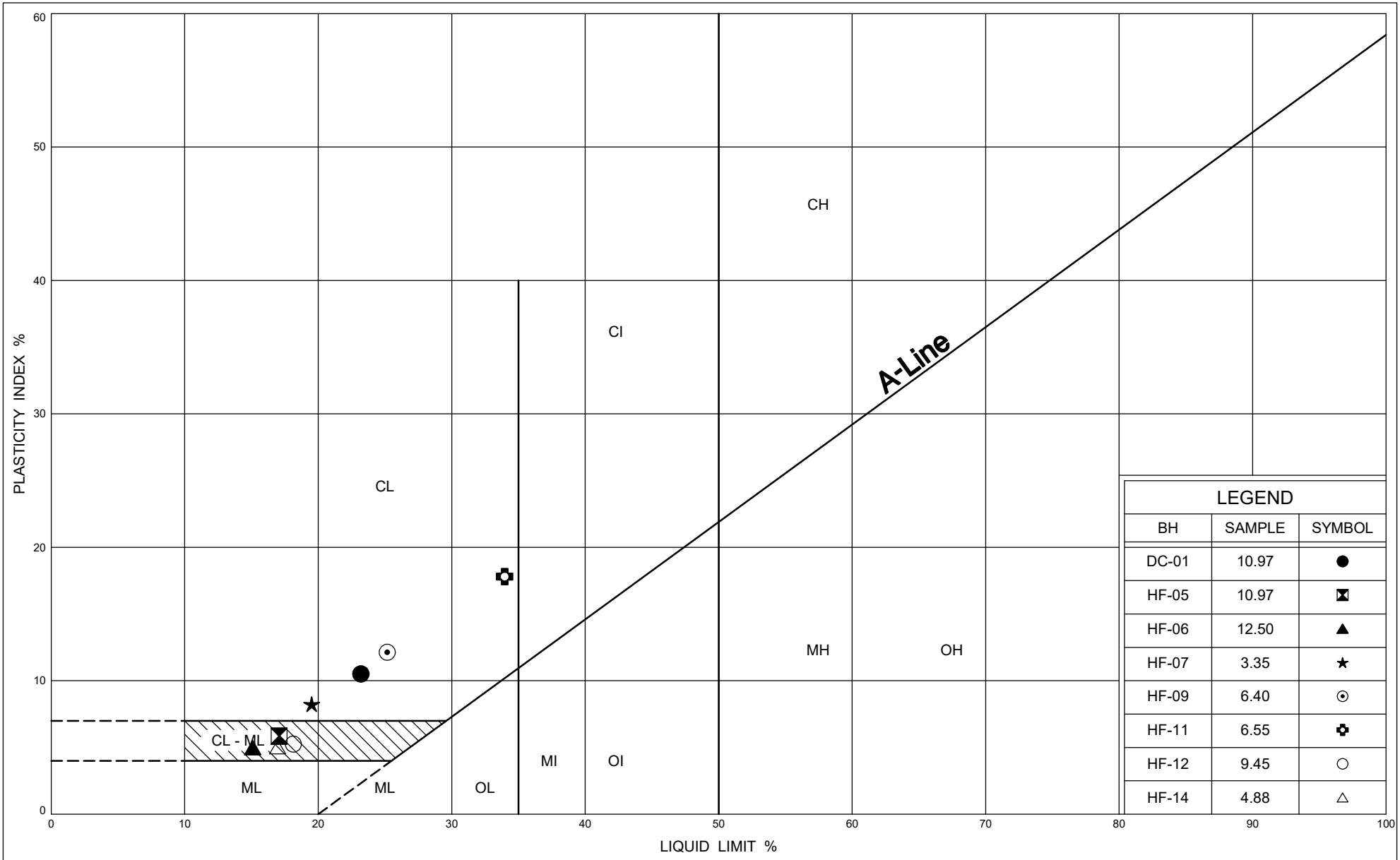
PLASTICITY CHART

Clayey SILT Zone in the Silty SAND Till

FIG No B13

W P 2493-15-00

Oct 75, FF - S - 21



ONTARIO MOT PLASTICITY CHART MTO-21110.GPJ ONTARIO MOT.GDT 7/26/19

Ministry of Transportation
Ontario

PLASTICITY CHART

Silty CLAY Till to Clayey SILT Till

FIG No B14

W P 2493-15-00

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

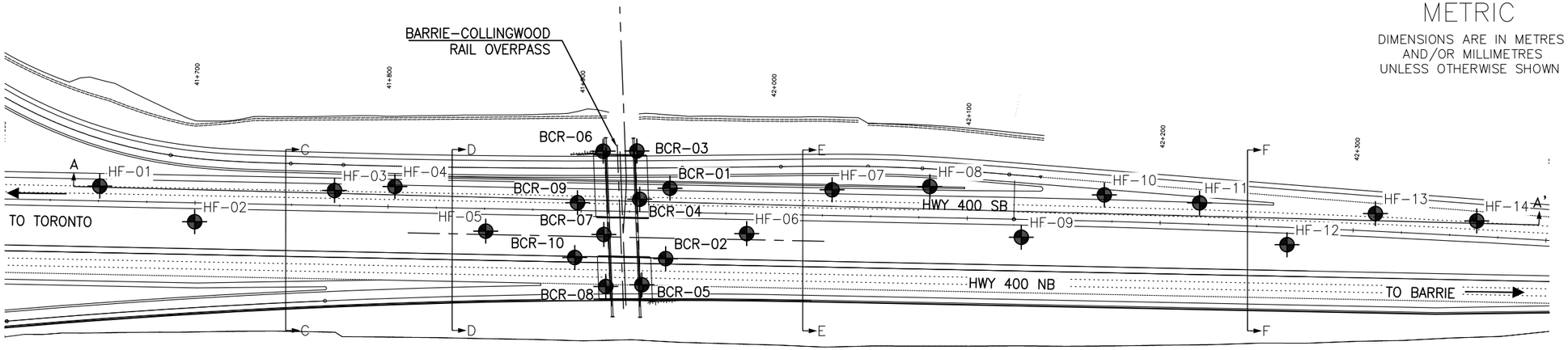
CONT No
GWP No 2493-15-00

SHEET

HIGHWAY 400
HIGH FILLS APPROX. STATIONS 41+600 TO 42+400
BOREHOLE LOCATIONS AND SOIL STRATA

McINTOSH PERRY

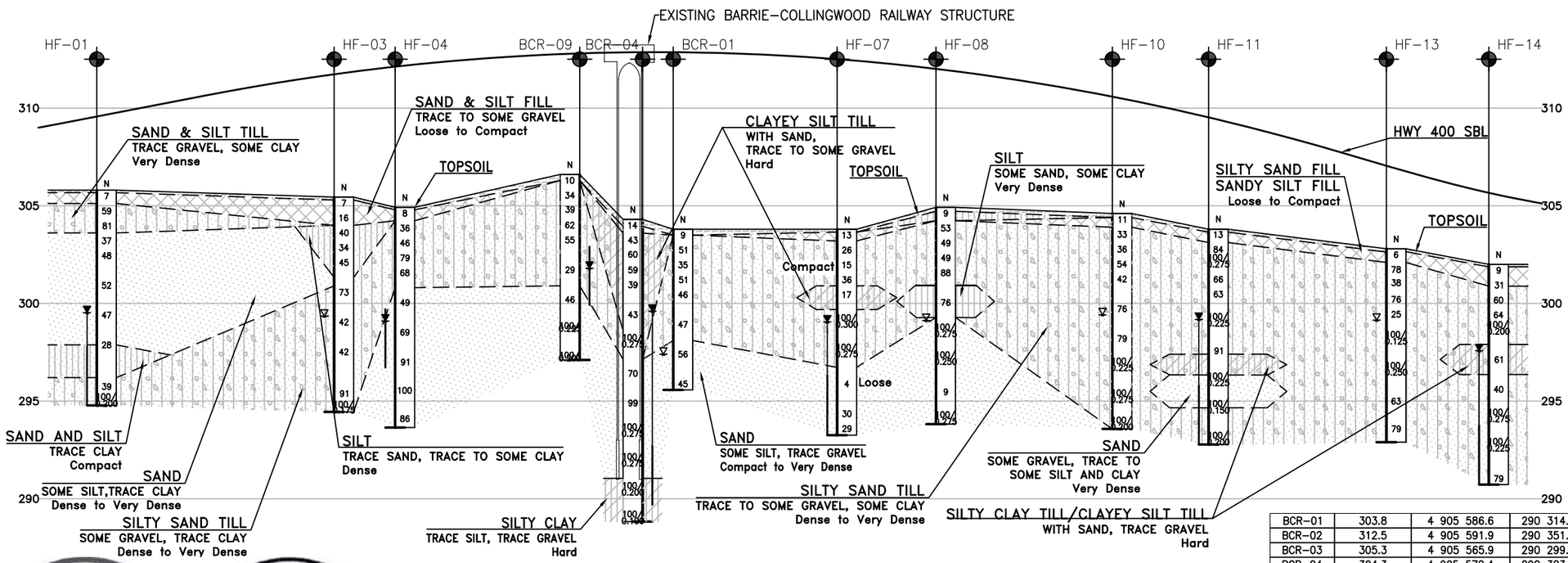
THURBER ENGINEERING LTD.

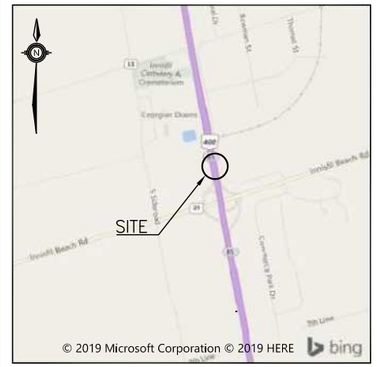


PLAN

50 0 50 100m

SCALE 1:2500





44.288 KEYPLAN -79.681

LEGEND

⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
HF-01	305.8	4 905 297.4	290 374.6
HF-02	309.1	4 905 349.3	290 382.5
HF-03	305.4	4 905 416.9	290 351.8
HF-04	304.9	4 905 447.0	290 343.3
HF-05	312.0	4 905 497.8	290 356.2
HF-06	312.4	4 905 630.3	290 329.6
HF-07	303.8	4 905 668.9	290 298.3
HF-08	304.9	4 905 718.2	290 286.2
HF-09	310.7	4 905 769.9	290 302.2
HF-10	304.5	4 905 807.4	290 271.9
HF-11	303.8	4 905 856.6	290 265.8
HF-12	307.0	4 905 905.4	290 277.7
HF-13	302.9	4 905 946.8	290 252.4
HF-14	302.0	4 905 999.0	290 245.4

BCR-01	303.8	4 905 586.6	290 314.8
BCR-02	312.5	4 905 591.9	290 351.0
BCR-03	305.3	4 905 565.9	290 299.5
BCR-04	304.3	4 905 572.4	290 323.6
BCR-05	312.5	4 905 582.6	290 366.8
BCR-06	304.6	4 905 548.8	290 303.1
BCR-07	312.4	4 905 558.0	290 345.3
BCR-08	312.4	4 905 564.5	290 371.5
BCR-09	306.6	4 905 541.3	290 332.0
BCR-10	312.4	4 905 545.7	290 360.1

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

GEOCRES No. 31D-742

LICENSED PROFESSIONAL ENGINEER
P. K. CHATTERJI
05/04/2020
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
S. PANG
35314509
05/04/2020
PROVINCE OF ONTARIO

PROFILE ALONG ℄ OF HIGHWAY 400 SB EMBANKMENT (A-A')

50 0 50 100m H 1:2500

5 0 5 10m V 1:250

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK	RPR	CODE	LOAD
DRAWN	BH	CHK	SKP	SITE	STRUCT

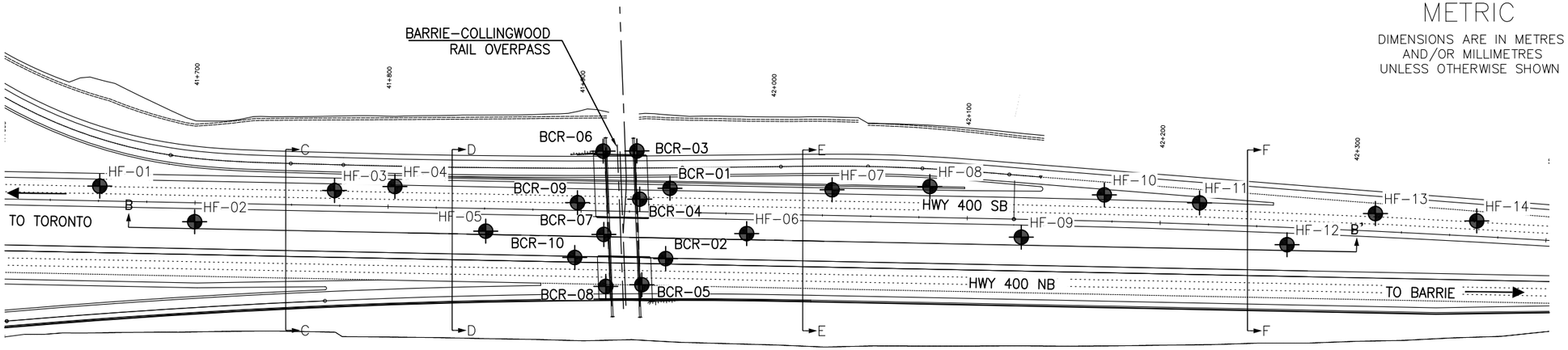
DATE MAY 2020
DWG 1

FILENAME: H:\Drafting\21000\21110\TED-21110-PLPR-HF.dwg
PLOTDATE: 5/4/2020 4:57 PM

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

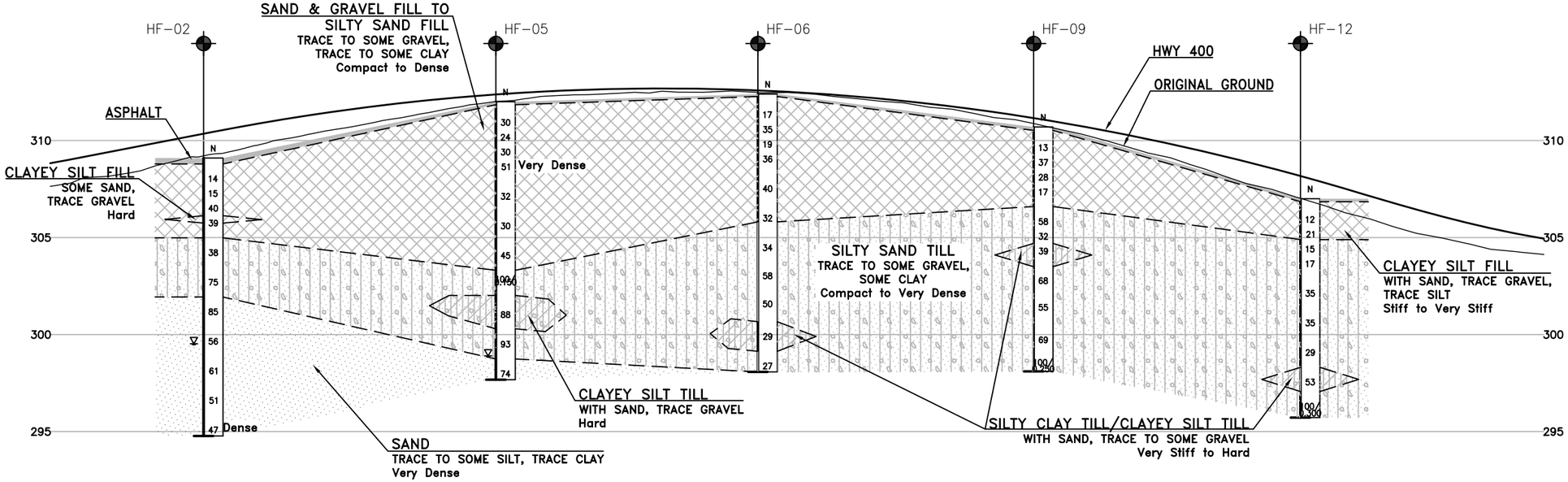
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN



PLAN

50 0 50 100m

SCALE 1:2500



BCR–01	303.8	4 905 586.6	290 314.8
BCR–02	312.5	4 905 591.9	290 351.0
BCR–03	305.3	4 905 565.9	290 299.5
BCR–04	304.3	4 905 572.4	290 323.6
BCR–05	312.5	4 905 582.6	290 366.8
BCR–06	304.6	4 905 548.8	290 303.1
BCR–07	312.4	4 905 558.0	290 345.3
BCR–08	312.4	4 905 564.5	290 371.5
BCR–09	306.6	4 905 541.3	290 332.0
BCR–10	312.4	4 905 545.7	290 360.1

PROFILE ALONG ℄ OF HIGHWAY 400 (B–B')

50 0 50 100m H 1:2500

5 0 5 10m V 1:250

LICENSED PROFESSIONAL ENGINEER
P. K. CHATTERJI
05/04/2020
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
S. PANG
35314509
05/04/2020
PROVINCE OF ONTARIO

CONT No
GWP No 2493–15–00

SHEET

HIGHWAY 400
HIGH FILLS APPROX. STATIONS 41+600 TO 42+400
BOREHOLE LOCATIONS AND SOIL STRATA

McINTOSH PERRY

THURBER ENGINEERING LTD.



44.288 KEYPLAN –79.681

LEGEND

⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
HF–01	305.8	4 905 297.4	290 374.6
HF–02	309.1	4 905 349.3	290 382.5
HF–03	305.4	4 905 416.9	290 351.8
HF–04	304.9	4 905 447.0	290 343.3
HF–05	312.0	4 905 497.8	290 356.2
HF–06	312.4	4 905 630.3	290 329.6
HF–07	303.8	4 905 668.9	290 298.3
HF–08	304.9	4 905 718.2	290 286.2
HF–09	310.7	4 905 769.9	290 302.2
HF–10	304.5	4 905 807.4	290 271.9
HF–11	303.8	4 905 856.6	290 265.8
HF–12	307.0	4 905 905.4	290 277.7
HF–13	302.9	4 905 946.8	290 252.4
HF–14	302.0	4 905 999.0	290 245.4

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

GEOCRES No. 31D-742

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK	RPR	CODE	LOAD
DRAWN	BH	CHK	SKP	SITE	STRUCT

DATE MAY 2020
DWG 2

FILENAME: H:\Drafting\21000\21110\TED–21110–PLPR–HF.dwg
PLOTDATE: 5/4/2020 5:07 PM

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

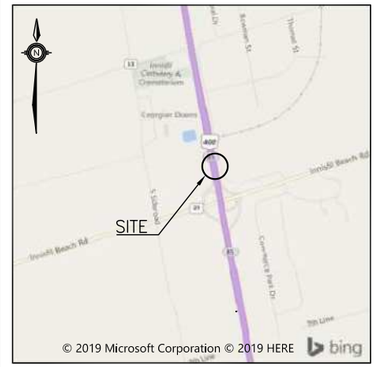
CONT No
GWP No 2493-15-00

HIGHWAY 400
HIGH FILLS APPROX. STATIONS 41+600 TO 42+400
BOREHOLE LOCATIONS AND SOIL STRATA

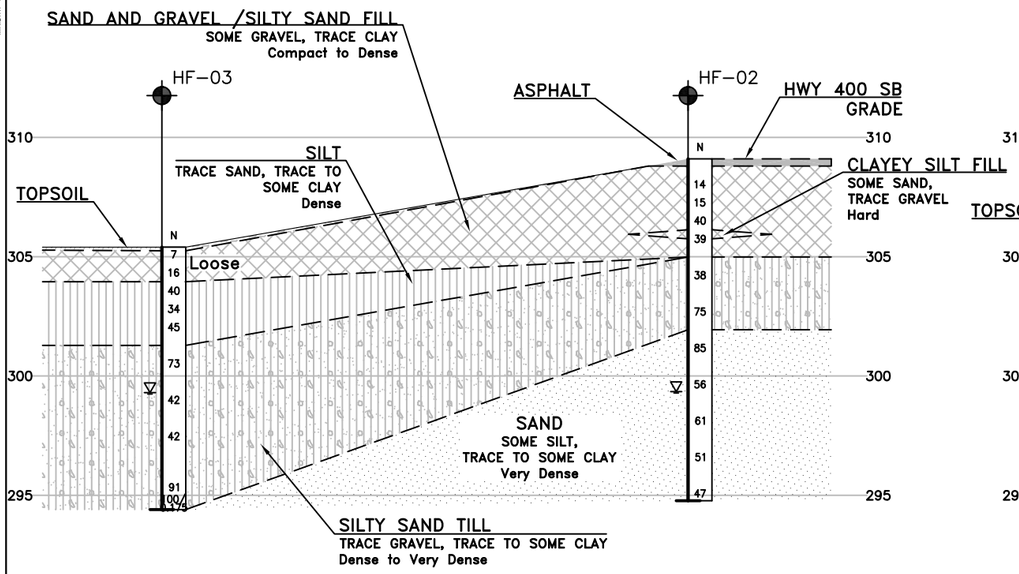
SHEET

McINTOSH PERRY

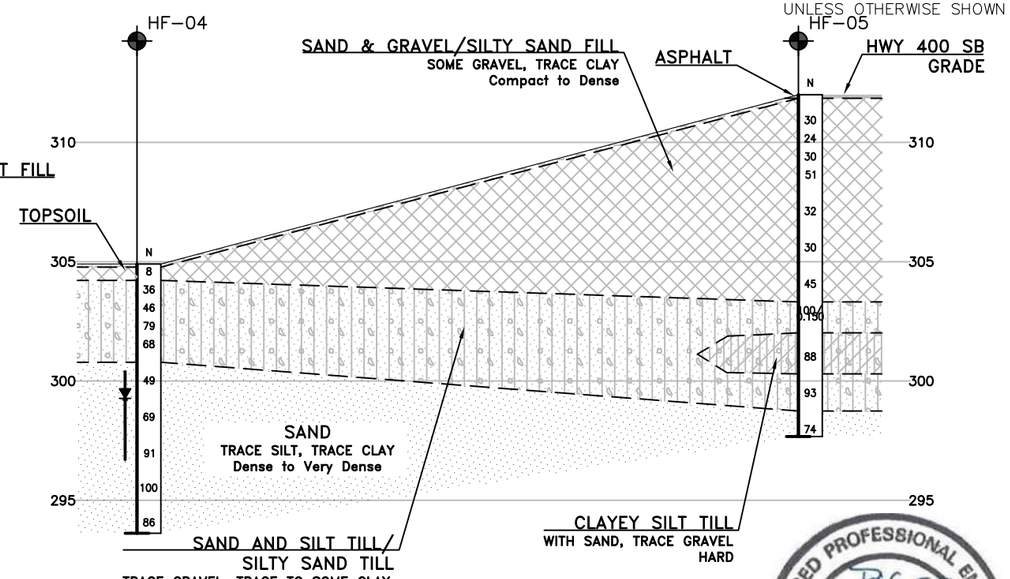
THURBER ENGINEERING LTD.



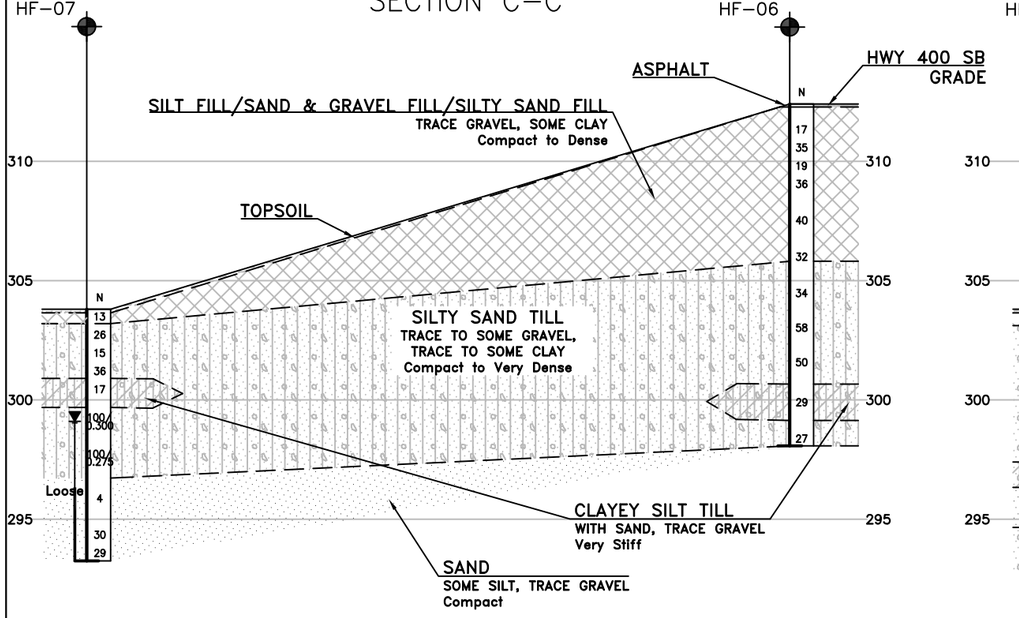
44.288 KEYPLAN -79.681



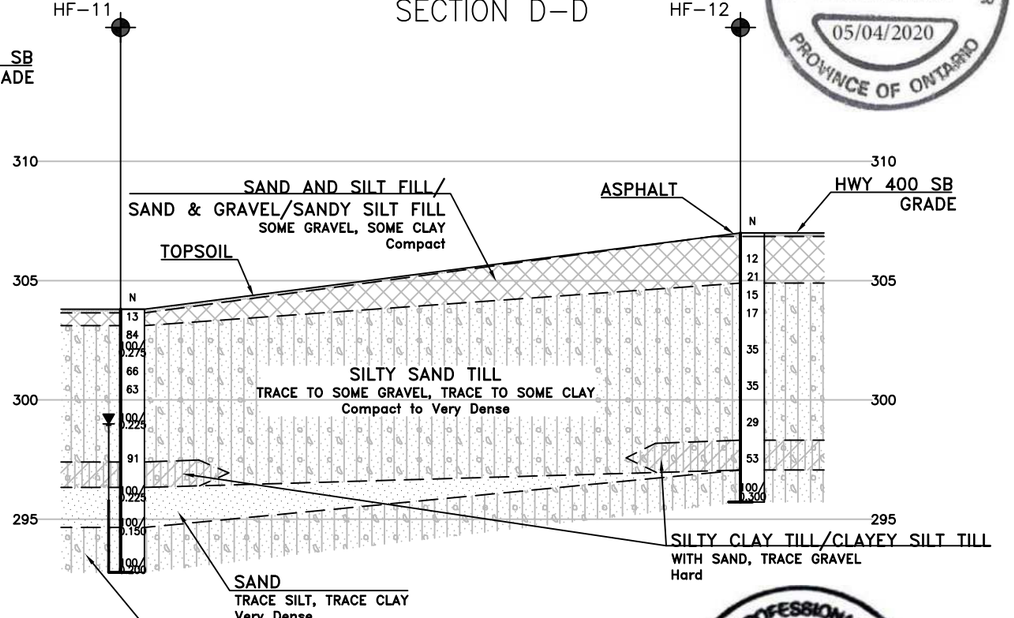
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

4 0 4 8m H 1:200
5 0 5 10m V 1:100

LICENSED PROFESSIONAL ENGINEER
P. K. CHATTERJI
05/04/2020
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
S. PANG
35314509
05/04/2020
PROVINCE OF ONTARIO

LEGEND

⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
HF-01	305.8	4 905 297.4	290 374.6
HF-02	309.1	4 905 349.3	290 382.5
HF-03	305.4	4 905 416.9	290 351.8
HF-04	304.9	4 905 447.0	290 343.3
HF-05	312.0	4 905 497.8	290 356.2
HF-06	312.4	4 905 630.3	290 329.6
HF-07	303.8	4 905 668.9	290 298.3
HF-08	304.9	4 905 718.2	290 286.2
HF-09	310.7	4 905 769.9	290 302.2
HF-10	304.5	4 905 807.4	290 271.9
HF-11	303.8	4 905 856.6	290 265.8
HF-12	307.0	4 905 905.4	290 277.7
HF-13	302.9	4 905 946.8	290 252.4
HF-14	302.0	4 905 999.0	290 245.4

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

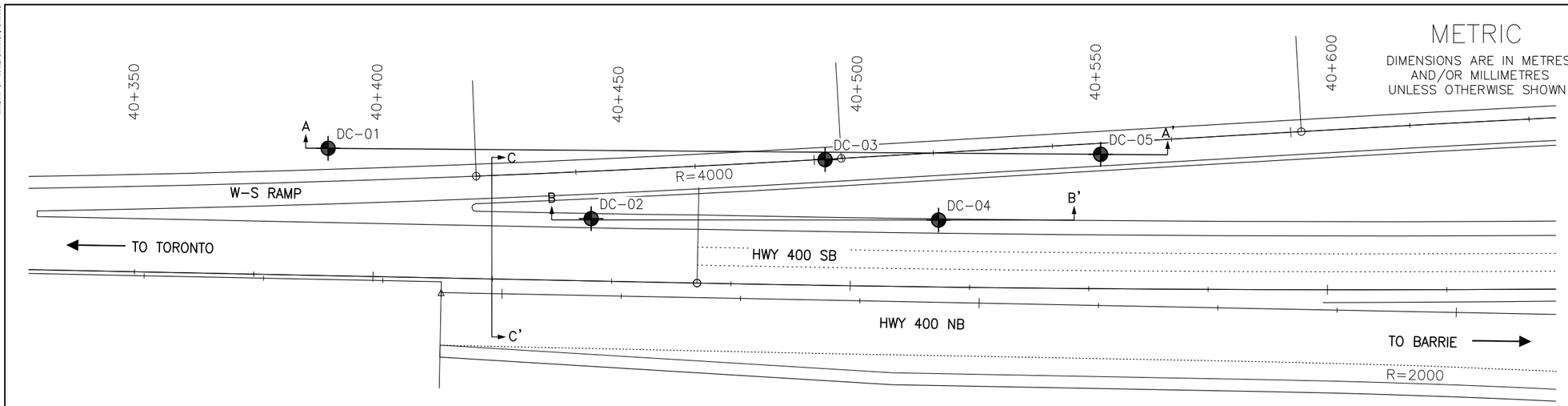
GEOCRES No. 31D-742

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK	RPR	CODE		LOAD	DATE MAY 2020
DRAWN	BH	CHK	SKP	SITE		STRUCT	DWG 3

FILENAME: H:\Drafting\21000\21110\TED-21110-PLPR-HF.dwg
PLOTDATE: 5/4/2020 5:09 PM

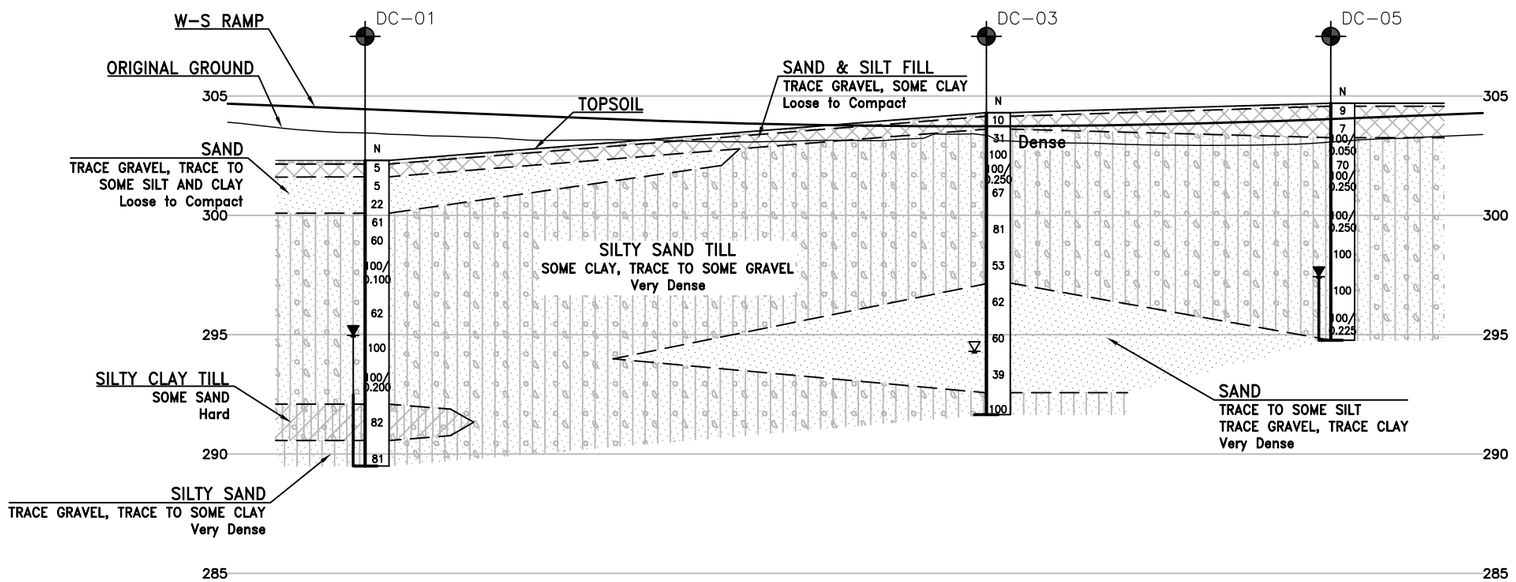
MINISTRY OF TRANSPORTATION, ONTARIO



PLAN

20 0 20 40m

SCALE 1:1000



PROFILE ALONG A–A'

20 0 20 40m H 1:1000

5 0 5 10m V 1:250

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT No

GWP No 2493-15-00

HIGHWAY 400
DEEP CUTS APPROX. STATIONS 40+350 TO 40+600
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

McINTOSH PERRY

THURBER ENGINEERING LTD.



44.288 KEYPLAN -79.681

LICENSED PROFESSIONAL ENGINEER
S. PANG
35314509
05/04/2020
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
P. K. CHATTERJI
05/04/2020
PROVINCE OF ONTARIO

LEGEND

⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
DC-01	302.3	4 904 060.6	290 615.1
DC-02	301.1	4 904 117.6	290 618.1
DC-03	301.9	4 904 163.0	290 595.9
DC-04	301.9	4 904 188.8	290 603.4
DC-05	304.7	4 904 219.2	290 582.9

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

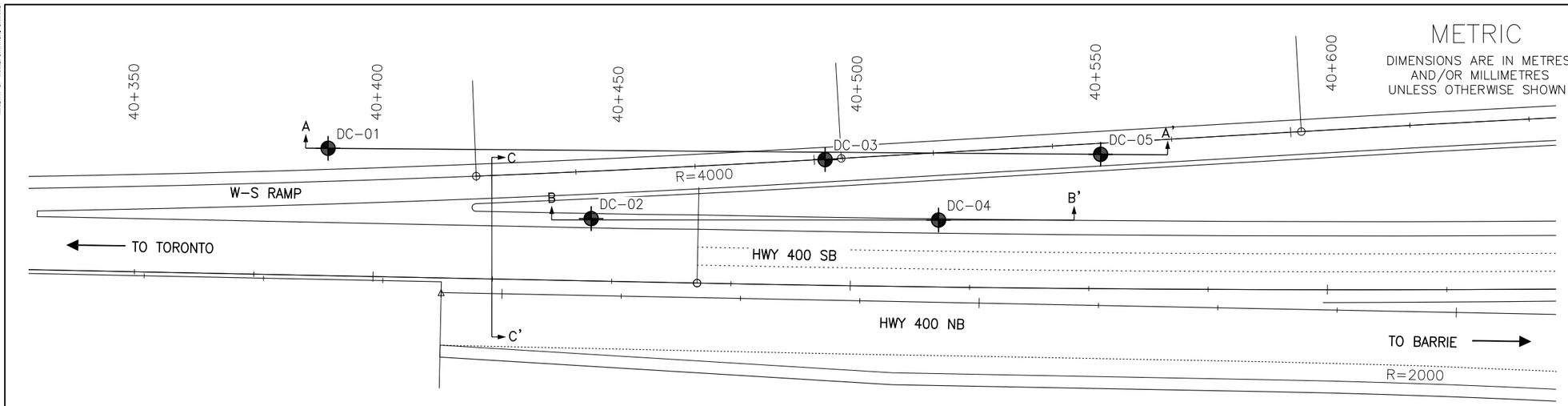
GEOCRES No. 31D-742

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK RPR	CODE	LOAD	DATE MAY 2020
DRAWN	BH	CHK SKP	SITE	STRUCT	DWG 4

FILENAME: H:\Drafting\21000\21110\TED-21110-PLPR-HF.dwg
PLOTDATE: 5/4/2020 5:09 PM

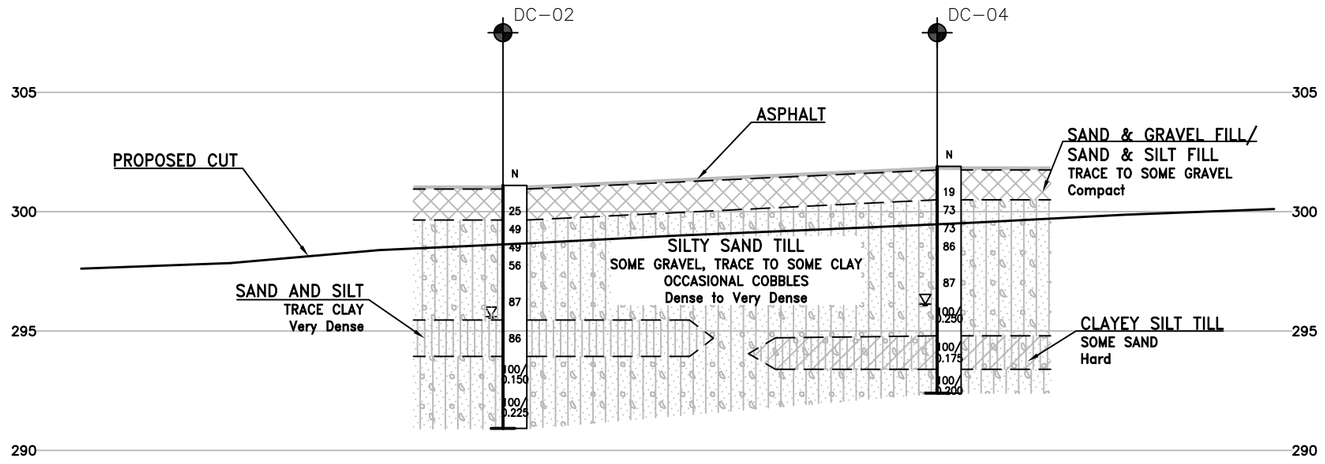
MINISTRY OF TRANSPORTATION, ONTARIO



PLAN

20 0 20 40m

SCALE 1:1000



PROFILE ALONG B–B'

20 0 20 40m H 1:1000

5 0 5 10m V 1:250

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT No

GWP No 2493-15-00

HIGHWAY 400
DEEP CUTS APPROX. STATIONS 40+350 TO 40+600
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

McINTOSH PERRY

THURBER ENGINEERING LTD.



44.288 KEYPLAN -79.681

LICENSED PROFESSIONAL ENGINEER
S. PANG
35314509
05/04/2020
PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER
P. K. CHATTERJI
05/04/2020
PROVINCE OF ONTARIO

	LEGEND
⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
DC-01	302.3	4 904 060.6	290 615.1
DC-02	301.1	4 904 117.6	290 618.1
DC-03	301.9	4 904 163.0	290 595.9
DC-04	301.9	4 904 188.8	290 603.4
DC-05	304.7	4 904 219.2	290 582.9

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

GEOCRES No. 31D-742

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK	RPR	CODE	LOAD
DRAWN	BH	CHK	SKP	SITE	STRUCT

DATE MAY 2020
DWG 5

FILENAME: H:\Drafting\21000\21110\TED-21110-PLPR-HF.dwg
PLOTDATE: 5/4/2020 5:10 PM

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

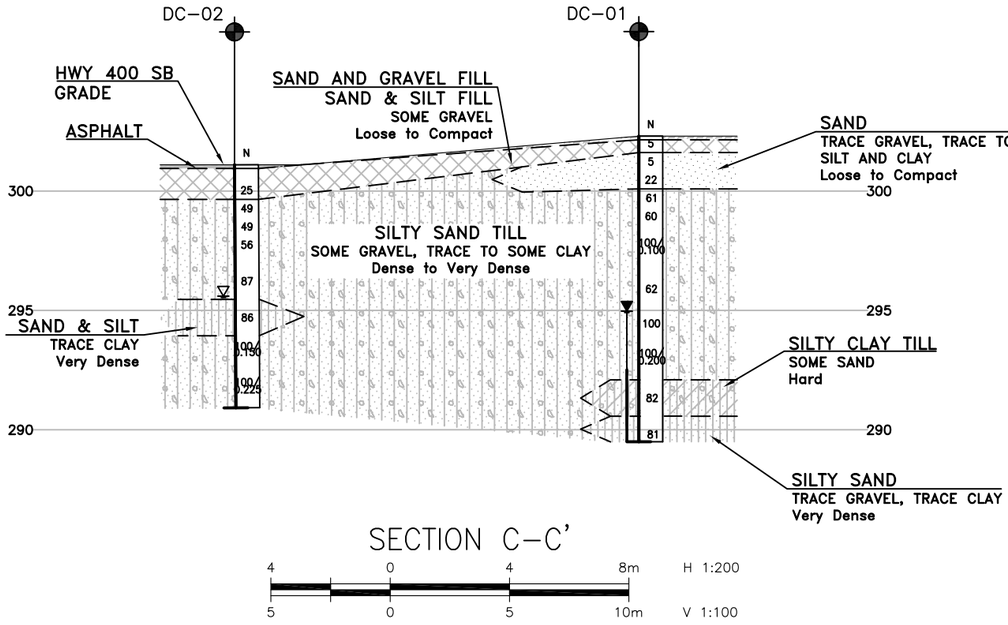
CONT No
GWP No 2493-15-00

HIGHWAY 400
DEEP CUTS
40+425
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET

McINTOSH PERRY

THURBER ENGINEERING LTD.



SECTION C-C'

4 0 4 8m H 1:200

5 0 5 10m V 1:100







44.288 KEYPLAN -79.681

LEGEND

⊕	Borehole (Current Investigation)
N	Blows /0.3m (Std Pen Test, 475J/blow)
CONE	Blows /0.3m (60° Cone, 475J/blow)
PH	Pressure, Hydraulic
▽	Water Level
▼	Water Level
	Piezometer
90%	Rock Quality Designation (RQD)
A/R	Auger Refusal

NO	ELEVATION	NORTHING	EASTING
DC-01	302.3	4 904 060.6	290 615.1
DC-02	301.1	4 904 117.6	290 618.1
DC-03	301.9	4 904 163.0	290 595.9
DC-04	301.9	4 904 188.8	290 603.4
DC-05	304.7	4 904 219.2	290 582.9

-NOTES-

1) The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.
2) This drawing is for subsurface information only. Surface details and features are for conceptual illustration.
3) Coordinate system is MTM NAD 83 Zone 10.

GEOCRES No. 31D-742

REVISIONS		
DATE	BY	DESCRIPTION

DESIGN	RPR	CHK	RPR	CODE		LOAD	DATE MAY 2020
DRAWN	BH	CHK	SKP	SITE		STRUCT	DWG 6

FILENAME: H:\Drafting\21000\21110\TED-21110-PLPR-HF.dwg
PLOTDATE: 5/4/2020 5:10 PM

Appendix C

Environmental Constraints Analysis of Natural Heritage Features

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

July 14, 2022 AEC21-242

Ainley Group
280 Pretty River Parkway
Collingwood ON
L9Y 4J5

Re: **Environmental Constraints Analysis of Natural Heritage Features**
Sewage Pumping Station #2
Town of Innisfil

Dear Ms. Smeh:

Azimuth Environmental Consulting, Inc. (Azimuth) was retained to provide an Environmental Constraints Analysis (ECA) of the potential natural heritage constraints which would require consideration in the evaluation of potential locations for the Sewage Pumping Station #2 (SPS2) as part of the Schedule B Municipal Class Environmental Assessment (MCEA). Potential locations for the SPS2 are being explored as part of the MCEA within the identified study area as provided by Ainley Group (Ainley) and depicted in Figures 1-3. Preliminary constraints are presented in this ECA, as they relate to Key Natural Heritage Features (KNHFs), as defined by Provincial Planning Policy. KNHFs may include woodlands, wetlands, valleylands, Significant Wildlife Habitat (SWH), fish habitat, and habitat for Species at Risk (SAR) protected under Ontario's *Endangered Species Act*, 2007 (ESA).

The ECA includes a summary of recommendations to be considered for future stages of the project including recommendations for additional environmental field study and evaluation, depending upon the ultimate proposed location for SPS2.

Information provided herein will ultimately be included in an Environmental Impact Study (EIS) report once design details are known, and all stages of development are understood in order to adequately identify mitigation requirements for natural heritage protection, and permitting requirements from the regulatory agencies.

1.0 STUDY APPROACH

Prior to undertaking field studies, an initial classification of habitats was undertaken using recent air photo imagery for an area encompassing the study area and adjacent lands [*i.e.* lands within approximately 120 metres (m)]. A field survey was completed by an Azimuth ecologist on October 5 and October 20, 2021 and environmental features mapping (Figure 2B; attached) illustrates information derived from a combination of desktop mapping resources and field conclusions. The high level field assessment for this ECA was restricted to a 'windshield' survey from within the road right-of-way (ROW). Detailed environmental investigations were not undertaken as part of the ECA. Vegetation units were generally classified using Ecological Land Classification for Southern Ontario (ELC) protocols as illustrated in Figure 2B.

2.0 SUMMARY OF NATURAL HERITAGE CONDITIONS

2.1 Vegetation and Vegetation Communities

The study area includes several natural heritage components including woodlands, wetlands and watercourses that are intermixed with agricultural, rural residential and commercial lands. Excluding the anthropogenic land uses (*i.e.* agricultural and/or maintained lands), a total of six vegetation communities were identified by Azimuth in 2021 (Figure 2B).

Woodland and wetland features have been identified within the study area (Figure 2B). Some of the woodlands within the study area are part of a larger contiguous woodland community that extends beyond the study area.

Unevaluated wetland exists within the study area and adjacent lands (Figure 2B).

The ROW was typically composed of open 'field' habitat composed of opportunistic herbaceous/grass species.

Riparian vegetation typically exists in proximity to two mapped watercourses within the study area (Figure 2B).

Although not considered a KNHF, many of the rural properties are treed and include hedgerows that border the properties.

There were no Butternut (Endangered) or Black Ash* (Endangered) observed during Azimuth's 2021 field investigations.

*Black Ash was recently added to the Species at Risk Ontario List (January 26, 2022). The province has temporarily suspended protections for Black Ash for a period of two years from the time the species was added to the list (MECP, 2022).

2.2 Wildlife and Wildlife Habitat

The Ministry of Natural Resources and Forestry's (MNRF) NHIC database identifies records for two SAR: Eastern Meadowlark (Threatened) and Wood Thrush (Special Concern).

2.3 Watercourses and Fish Habitat

The study area includes two drainage features as shown on Figure 2B. The more northerly of the two crossings is the Lawson Drain within the Thornton Creek sub-watershed, crossing Line 5 approximately 560m south of Innisfil Beach Road with discharge westerly. This north crossing is located in the NVCA watershed. The more southerly drainage feature originates at Line 5 and discharges easterly under Highway 400, forming a small headwater tributary of Lover's Creek approximately 133m north of the 7th Line. This southern feature is in the LSRCA watershed. Both drainage features are discussed as follows.

Lawson Drain

Many desktop background mapping resources (including NVCA regulation mapping, Toporama, NHIC, VuMap, FishOn-line) do not identify a drainage feature in the northern portion of the project area. Mapping from the following resources do however identify occurrence of a feature: Google Maps (https://www.google.com/maps), 'Ag maps' from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), (http://omafra.gov.on.ca/english/landuse/gis/portal.htm), and the Town of Innisfil Drain Mapping resource, (https://innisfil.ca/en/living-here/resources/Documents/Municipal-Drainage-Map.pdf. Aerial imagery combined with site observation indicates that a feature occurs, and is therefore reflected on Figure 2B. Drainage is westerly under the roadway, capturing seasonal surface runoff from agricultural lands and Line 5 ditches.

The drain bears evidence of past straightening and channelization, and conveys runoff in a narrow vegetated corridor dominated by grasses and cattails. Background mapping indicates that the Lawson Drain is also known as 'Drain D-13', (Innisfil, 2016), a municipal drain regulated under the *Ontario Drainage Act*. The drain has been historically identified as a Type "D" drain indicative of a permanently flowing system with fall spawning fish community (Innisfil, 2009; DFO, 2019). Current municipal drainage mapping by Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) also classifies the drain feature as Type "D", however this tributary does not

function as coldwater habitat for such species (Azimuth site observation). The system appears to convey ephemeral/intermittent flow, and is expected to provide indirect habitat for a simple baitfish community. Habitat does not support coldwater fish species. The Type 'D' classification does not align with current conditions at the 5th Line therefore consultation occurred with Fisheries and Oceans Canada (DFO) for this sub-catchment 2021 (for this and other projects within the municipality) to review fish habitat potential for drain classification. Based on the lack of flow permanency, site conditions and fish habitat potential, Azimuth requested that the drain be reclassified as an 'F' Drain, indicative of intermittent flow conditions with potential for spring spawning in the catchment, and low sensitivity (no aquatic SAR). DFO concurred with Azimuth's recommendation that the feature would more appropriately classified as an 'F' drain accordingly, (MNRF consultation, 2017, DFO consultation 2017).

The Lawson Drain at the 5th Line is expected to provide indirect fish habitat and is protected under the Federal *Fisheries Act*. There are no records of aquatic SAR in the sub-watershed. Any construction activities that propose to alter site conditions will require project review by a fisheries ecologist to determine potential impacts fish habitat, mitigation requirements, and requirements for permitting.

Tributary of Lover's Creek

Desktop mapping resources identify a feature as originating at Line 5, extending east towards Highway 400. The channel appears historically channelized between agricultural lands and a privately owned commercial business (IHL Canada), mapped as a first order system in the Lover's Creek sub-watershed. Drainage is within a vegetated narrow riparian corridor before crossing under the highway, before entering the Lover's Creek natural heritage system that includes PSW wetland and woodlands in what may be considered the 'west portion' of the overall Lover's Creek PSW wetland. Google Earth mapping indicates a drainage feature originating on the west side of the 5th Line, however site conditions concur with all other available mapping showing drainage originating on the east side only.

The Tributary of Lover's Creek at the 5th Line is expected to provide indirect fish habitat and is protected under the Federal *Fisheries Act*. There are no records of aquatic SAR in the sub-watershed. Any construction activities that propose to alter site conditions will require project review by a fisheries ecologist to determine potential impacts fish habitat, mitigation requirements, and requirements for permitting.

3.0 SUMMARY OF CONSTRAINTS AND OPPORTUNITIES

Azimuth has identified several KNHF within the study area based on a review of site conditions. Preliminary Environmental Constraints mapping for the study area is presented in Figure 3B.

3.1 Wetlands

Wetland habitat has been identified within the study area (Figure 3B).

3.2 Woodland

Significant woodland has been identified within the study area (Figure 3B)

3.3 Watercourses

They study area includes the Lawson Drain (in the NVCA watershed) and Tributary of Lover's Creek (in the LSRCA watershed), both of which are considered drainage features with potential fish habitat functions (Figure 3B).

3.4 Significant Wildlife Habitat

Detailed studies are required to confirm the presence/absence of SWH. Typically, SWH functions are associated with other KNHF such as woodlands and wetlands but would require further assessment to confirm.

3.5 Species at Risk

The following list only considers species that have a moderate or high possibility of occurring within the study area:

- Butternut (Endangered) and Black Ash (Endangered);
    - While no Butternut or Black Ash were identified during 2021 field surveys, potential habitat for these species occurs within the wetland and forest communities in addition to individual trees on rural properties or within hedgerows;
- Bobolink and Eastern Meadowlark (Threatened);
    - Potential habitat for Bobolink and Eastern Meadowlark occurs within the agricultural lands of the study area with a higher likelihood of presence within fallow or hay fields (Figure 2B);
- Endangered Bats (Little Brown Myotis, Northern Myotis and Tri-colored Bat);
    - Forest habitat provides potential habitat for Endangered bat species.
- Red-headed Woodpecker (Endangered);
    - Potential habitat for Red-headed Woodpecker includes woodlands or areas with tall trees of large circumferences, high basal area, a low density of

stems in the understorey, and a high density of snags and dead limbs that are used for perching, nesting and food catching.

As illustrated on Figures 2B and 3B, the study area contains wetland, woodland/treed areas and agricultural lands that may provide habitat for SAR, as discussed above.

4.0 CONSIDERATIONS AND RECOMMENDATIONS

4.1 Aquatic Considerations

Both the Lawson Drain and Tributary of Lover's Creek are preliminarily classified as watercourses protected under the Federal *Fisheries Act*. Any proposal to alter site conditions in water or within lands regulated by the NVCA or LSRCA (Figure 3B) requires site specific fisheries evaluation of project activities to confirm potential impacts, and mitigation requirements prior to development. Mitigation planning should include best management practices for works around waterbodies, and use of DFO's Standards and Interim Codes of Practice where applicable. Land development with potential for impacts to watercourses requires review in accordance with DFO's 'Projects Near Water'. Fisheries timing restrictions governed by MNRF are expected to apply for all work around watercourses, to protect fish (either in the study area or downstream) during sensitive spawning periods.

4.2 NVCA and LSRCA Regulated Lands

Portions of the study area are regulated by the NVCA as per Ontario Regulation 172/06 and the LSRCA as per Ontario Regulation 179/06 (Figure 3B), therefore NVCA and/or LSRCA consultation is required prior to site alteration in regulated lands.

4.3 Potential Additional Surveys

The need for additional in-season surveys will depend on the proposed location(s) of the SPS2. The following additional surveys may be recommended:

- Detailed summer vegetation (late June-August) inventories to further characterize the limits and extent of vegetation communities within the footprint of the SPS2. This survey will include a screening for SAR flora including a comprehensive search for Butternut and Black Ash trees.
- Complete breeding bird surveys in June to confirm the presence/absence of diurnal birds. The number of surveys required will depend on the habitat.
- Should construction of the SPS2 be proposed within a treed area (*i.e.* woodland or forest), a general survey screened for presence of "snag" trees with potential to provide refuge and maternity roosting habitat for bat species listed as Endangered

under the ESA (Little Brown Myotis, Nothern Myotis, and Tri-colored Bat) may be required.

- Obtain up-to-date SAR information from Ministry of Environment, Conservation and Parks (MECP) as required and to determine if any additional SAR need to be considered within the assessment and/or if any SAR have been confirmed within the study area.
- Should SAR be confirmed within the footprint of the SPS2, advise the client if additional species specific surveys are recommended relating to potential SAR habitat. If not, confirm mitigation measures that should be implemented to avoid incidental impact to SAR (*i.e.* exclusion fencing, timing restrictions for tree clearing).
- Should construction of the SPS2 have the potential to impact fish and fish habitat directly or indirectly, complete an aquatic habitat assessment to confirm potential for fish use in the study area, and classify fish habitat as 'direct' (fish occur), 'seasonal direct' (fish can access the study area seasonally or under elevated water levels), or 'indirect' (no fish occur but drainage discharges to fish that occur downstream).

Subsequent to the completion of the recommended studies, detailed mitigation measures would be outlined in an EIS.

5.0 CONCLUSIONS

Based on our initial assessment, several KNHF's have been identified within the study area including:

- Wetland;
- Woodland;
- Watercourses - fish habitat;
- Potential SAR and/or SAR habitat; and
- Potential SWH.

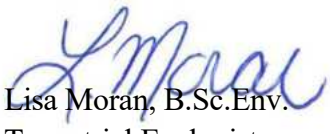
Based on the identified features and functions, it is recommended that siting of SPS2 occur outside/away from of the identified KNHF including the wetland, woodland, watercourse and NVCA/LSRCA regulated lands, to mitigate potential impacts to the identified KNHF's, fish and aquatic resources and potential SAR habitat in the study area.

As highlighted in Section 4.3, additional studies will likely be required once the proposed location for the SPS2 is known. The need for specific studies can be recommended once

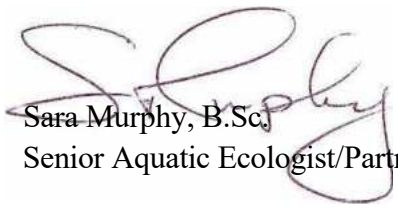
this information is available and should be confirmed in consultation with NVCA and/or LSRCA.

Should you have any additional questions or concerns, or wish to discuss further please do not hesitate to contact the undersigned.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.



Lisa Moran, B.Sc.Env.
Terrestrial Ecologist



Sara Murphy, B.Sc.
Senior Aquatic Ecologist/Partner

Attach: Figure 1, Figure 2B, Figure 3B

6.0 REFERENCES

Endangered Species Act, Ontario. (2007). An Act to protect species at risk and to make related changes to other Acts. Bill 184 Chapter 6, Statutes of Ontario 2007.

Fisheries and Oceans Canada. 2017. Guidance for Maintaining and Repairing Municipal Drains in Ontario.

Fisheries and Oceans Canada. 2019. Aquatic Species at Risk Map. https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario. First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Sciences Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Nottawasaga Valley Conservation Authority (NVCA). 2022. Online Regulation Mapping. https://www.nvca.on.ca/Pages/Maps.aspx Site accessed January 2022.

Ministry of Environment, Conservation and Parks (MECP). 2022. Species at Risk https://www.ontario.ca/page/species-risk. Site accessed January 2022.

Ministry of Natural Resources and Forestry (MNRF). 2021. Online Make a Map Tool. Website. Available Online: https://www.ontario.ca/page/make-naturalheritage-area-map Accessed October 2021

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). 2017. AgMaps Geographic Information Portal, https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA

Town of Innisfil. 2016. Municipal Drain Map, https://innisfil.ca/wp-content/uploads/2020/03/Municipal-Drains-2016-ID-168737-1.pdf

606000.000 609000.000 612000.000 615000.000

4908000.000

4905000.000

STROUD SEWAGE PUMPING STATION

20 SIDEROAD SEWAGE PUMPING STATION

INNISFIL HEIGHTS SEWAGE PUMPING STATION #1

INNISFIL HEIGHTS SEWAGE PUMPING STATION #6

INNISFIL HEIGHTS SEWAGE PUMPING STATION #2

LOCKHART ROAD
VETERANS DRIVE
SALEM ROAD
HIGHWAY 400 NORTH
10TH LINE
9TH LINE
MCKAY STREET EAST
MCKAY ROAD WEST
10 SIDEROAD
20 SIDEROAD
YONGE STREET
INNISFIL BEACH ROAD
ORAL DRIVE
BOWMAN STREET
THOMAS STREET
CLIFFORD COURT
7TH LINE
INDUSTRIAL PARK ROAD
HIGHWAY 400 SOUTH
WINISBROOK STREET
5 SIDEROAD
COMMERCE PARK DRIVE
FOREST VALLEY DRIVE
6TH LINE
5TH LINE
BELLE AIRE BEACH ROAD

0 750 1500
HORIZONTAL SCALE 1: 30000

606000.000 609000.000 612000.000 615000.000

Plotted by: ALIU on October 6, 2021 at 5:14pm
File: Q:\21 Projects\21-242 Gore EA_5 Pumping Stations – Innisfil\04.0 – Drafting\21-242 Pumping Station Locations.dwg Layout: Pumping Station Locations Plotscale: 1

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

LEGEND:

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS
INNISFIL, ON

PUMPING STATION LOCATIONS

DATE ISSUED:	*SEPTEMBER 2021*	Figure No.
CREATED BY:	*A.L.*	1
PROJECT NO.:	*21-242*	
REFERENCE:	*SIMCOE COUNTY*	

HIGHWAY 400 NORTH
HIGHWAY 400 SOUTH
LSRCA WATERSHED
NVCA WATERSHED
AGRICULTURAL
AGRICULTURE
THDM2
AGRICULTURE (FALLOW)
FOD
SWDM4-5
AGRICULTURE (FALLOW)
MEMM3
BARN
AGRICULTURE
MEMM3
5 SIDEROAD
INNISFIL BEACH ROAD
AGRICULTURE
AGRICULTURE
AGRICULTURE
AGRICULTURE
AGRICULTURE (HAY)
7TH LINE
LAWSON DRAIN
FOCM6-1
FOD
FOM

LEGEND:

- STUDY AREA
- HIGHWAY
- EXISTING WATERCOURSE (ONTARIO MNR, 2020)
- LSRCA/NVCA WATERSHED BOUNDARY
- HEDGEROW
- EXISTING WATERBODY (ONTARIO MNR, 2020)
- EXISTING WETLAND AREA (ONTARIO MNR, 2020)

ELC VEGETATION COMMUNITIES:

UPLAND COMMUNITIES

MEMM3	DRY-FRESH MIXED MEADOW ECOSITE
FOCM6-1	DRY-FRESH WHITE PINE NATURALIZED CONIFEROUS PLANTATION TYPE
FOD	DECIDUOUS FOREST
FOM	MIXED FOREST
THDM2	DRY-FRESH DECIDUOUS SHRUB THICKET ECOSITE

WETLAND COMMUNITIES:

SWDM4-5	POPLAR MINERAL DECIDUOUS SWAMP TYPE



KEY MAP

0 125 250

HORIZONTAL SCALE 1:5000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

ENVIRONMENTAL FEATURES
INNISFIL HEIGHTS PUMPING STATION #2

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS

DATE ISSUED:	*JULY 2022*	Figure No.
CREATED BY:	*A.L.*	2B
PROJECT NO.:	*21-242*	
REFERENCE:	*SIMCOE COUNTY*	

Plotted by: ALU on July 14, 2022 at 10:06am
File: Q:\21 projects\21-242 class ea 5 pumping stations - innisfil\04.0 - drafting\21-242 Environmental Features.dwg Layout: EFPS2 Plotscale: 1

HIGHWAY 400 NORTH
HIGHWAY 400 SOUTH

BARN

SWDM4-5

BARN

5 SIDEROAD

5 SIDEROAD

INNISFIL BEACH ROAD

LAWSON DRAIN

7TH LINE

LEGEND:

- STUDY AREA
- HIGHWAY
- WATERCOURSE (ONTARIO MNRF, 2021)
- SIGNIFICANT WOODLAND
- UNEVALUATED WETLAND (ONTARIO NDMNRF, 2021)
- NVCA REGULATED AREA (NVCA, 2022)
- LSRCA REGULATORY LIMIT (LSRCA, 2021)

WETLAND COMMUNITIES:

SWDM4-5 POPLAR MINERAL DECIDUOUS SWAMP TYPE



KEY MAP

0 125 250

HORIZONTAL SCALE 1:5000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

PRELIMINARY ENVIRONMENTAL CONSTRAINTS
INNISFIL HEIGHTS PUMPING STATION #2

INNSERVICES UTILITIES INC.
FIVE SEWAGE PUMPING STATIONS

DATE ISSUED:	JULY 2022	Figure No. 3B
CREATED BY:	A.L.	
PROJECT NO.:	21-242	
REFERENCE:	SIMCOE COUNTY	

Plotted by: ALU on July 14, 2022 at 10:07am
File: Q:\21_projects\21-242_class ea_5 pumping stations - Innisfil\104.0 - drafting\21-242 Environmental Features.dwg Layout: PEGPS2 Plotscale: 1

Appendix D

Scoped Environmental Impact Study Report

AZIMUTH

Environmental Approvals

Fisheries & Aquatic Ecology

Terrestrial & Wetland Ecology

Environmental Engineering

Hydrogeology & Contaminant Hydrogeology

Arborist Services

Environmental Site Assessment

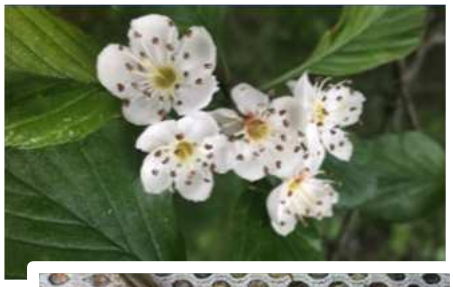
Species at Risk

Project Management

Environmental Impact Assessment

Water and Wastewater Engineering

Environmental Site Inspection / Construction Monitoring











Scoped Environmental Impact Study

7131 5th Sideroad

Town of Innisfil

InnServices Utilities Inc.

Prepared for the Ainley Group

AEC Project No. 21-242 December 2024

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

December 12, 2024 AEC 21-242

Ainley Group
280 Pretty River Parkway
Collingwood ON
L9Y 4J5

Attention: Wendy Smeh, C.E.T., PMP, Project Manager

Re: **Environmental Impact Study, InnServices Sewage Pumping Station #2, 7131 5th Sideroad, Town of Innisfil**

Dear Wendy Smeh,

Azimuth Environmental Consulting, Inc. (Azimuth) is pleased to provide an Environmental Impact Study (EIS) for the Innisfil Heights Sewage Pumping Station #2 (IH SPS 2) building in the Town of Innisfil. The EIS represents a continuation of study from the Environmental Constraints Analysis (ECA) completed for the Schedule B Municipal Class Environmental Assessment (Class EA) in 2022.

Should you have any questions or require additional information please do not hesitate to contact the undersigned.

Regards,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Lisa Moran, B.Sc.Env.
Senior Ecologist

Sara Murphy, HBSc.,
Partner/Aquatic Ecologist

Table of Contents

page

Letter of Transmittal ..... **i**

1.0 INTRODUCTION **1**

2.0 PLANNING AND POLICY CONTEXT **2**

2.1 County of Simcoe **2**
2.2 Town of Innisfil **2**
2.3 Lake Simcoe Protection Plan **3**
2.4 Lake Simcoe Region Conservation Authority **3**
2.5 Endangered Species Act, 2007 ..... **3**
2.6 Federal Fisheries Act **4**

3.0 STUDY APPROACH **4**

3.1 Field Program Summary **4**
3.1.1 Breeding Bird Surveys 5
3.2 Background Information **5**
3.3 Agency Correspondence **6**

4.0 EXISTING CONDITIONS **6**

4.1 Land Use **6**
4.2 Vegetation and Vegetation Communities **7**
4.3 Wildlife and Wildlife Habitat **8**
4.3.1 Terrestrial Crayfish 8
4.3.2 Breeding Bird Surveys 9
4.4 Species at Risk **9**
4.5 Wetlands **9**
4.6 Woodlands **9**
4.7 Valleylands **9**
4.8 Candidate Significant Wildlife Habitat **10**
4.9 Areas of Natural and Scientific Interest **10**
4.10 Watercourses and Fish Habitat **10**
4.10.1 Tributary of Lover's Creek – North Watercourse 10
4.10.2 Tributary of Lover's Creek – South Watercourse 11

5.0 KEY NATURAL HERITAGE FEATURES SUMMARY 12

6.0 PROPOSED WORKS 12

7.0 IMPACT ASSESSMENT 13

7.1 Other Wetlands 13

7.2 Candidate Significant Wildlife Habitat 13

7.2.1 Turtle Wintering Areas and Turtle Nesting Areas 13

7.2.2 Terrestrial Crayfish 13

7.2.3 Habitat for Special Concern and Rare Wildlife Species 14

Barn Swallow 14

Snapping Turtle 14

7.3 Fish Habitat 14

8.0 MITIGATION 15

8.1 Species at Risk 15

8.2 Migratory Birds 15

8.3 Turtle Mitigation 15

8.4 Fish Habitat 16

8.5 Sediment and Erosion Controls 18

8.6 Operations 18

9.0 CONCLUSIONS 18

10.0 REFERENCES 20

List of Figures

Figure 1: Site Location

Figure 2: Environmental Features and Proposed Location of SPS #2

List of Tables

Table 1: Breeding Bird Summary

Table 2: Species at Risk Habitat Summary and Assessment

List of Appendices

Appendix A: Natural Heritage Policy Information
Appendix B: LSRCA Information
Appendix C: Photographic Record
Appendix D: Background Information

1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) was retained by the Ainley Group to undertake an Environmental Impact Study (EIS) for the Innisfil Heights Sewage Pumping Station 2 (IH SPS 2) located at 7131 5th Sideroad in the Town of Innisfil (the "Town"), County of Simcoe (the "County"). A map illustrating the location of the proposed IH SPS 2 building in its regional context is shown on Figure 1. It is our understanding that the Town and Lake Simcoe Region Conservation Authority (LSRCA) have requested an EIS be undertaken due to presence of wetland and watercourses in the study area..

As background, InnServices Utilities Inc. (InnServices) completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the Town of Innisfil and its anticipated growth. The MSP recommended the construction of four (4) new SPS. Each proposed SPS requires a Schedule B Municipal Class Environmental Assessment (MCEA) prior to construction. InnServices has retained the Ainley Group to complete the Schedule B Class EA. This Scoped EIS will form a component of the EA in accordance with the Municipal Class Environmental Assessment Document (2000).

Azimuth completed an Environmental Constraints Analysis (ECA) for a larger study area (in which the IH SPS 2 was being considered) in July 2022 to identify candidate Key Natural Heritage Features (KNHFs) present that should be avoided when considering potential locations for the IH SPS 2. This EIS represents a continuation of the ECA, to assess the potential impacts associated with IH SPS 2 on KNHFs at its proposed location as presented in Figure 1. The EIS includes a review of background information, in combination with results of a detailed field program completed in 2024 to confirm natural heritage features and functions. This EIS also examines potential for Species at Risk (SAR) protected under Ontario's *Endangered Species Act,* 2007 (ESA), and potential for negative impacts to natural heritage features with recommendations for avoidance and mitigation where required.

The location of the proposed infrastructure is within the Stormwater Management (SWM) Block associated with the development at 7131 5th Sideroad. An EIS for the proposed development at this location was undertaken by others under a separate cover as part of the development approval process (Cambium Inc., 2022). As such, this EIS does not include environmental assessment of the proposed development for the property aside from the IH SPS 2 itself.

For the purposes of this EIS, the study area comprises the proposed footprint of the IH SPS 2 and adjacent lands (within approximately 120m) as depicted on Figures 1-2. The EIS does not assess any external connections beyond the footprint of the IH SPS 2. Natural features in the overall planning area beyond the defined study area limits are discussed where applicable throughout the report.

2.0 PLANNING AND POLICY CONTEXT

2.1 County of Simcoe

Section 4.7 of the County of Simcoe's Official Plan provides direction to lower-tier municipalities with respect to Infrastructure: Sewage and Water.

For those lands within the Lake Simcoe Protection Plan – Watershed Boundary, as shown on Schedule 5.1 Land Use Designations, Section 3.13 of this Plan also applies. The study area is within the Lake Simcoe watershed.

Policies related to the Lake Simcoe Protection Plan are discussed in Section 2.3 below.

The County of Simcoe Official Plan does not identify any portion of the study area within the County Greenlands System nor have any wetlands or ANSI been identified (Appendix A). Streams have been identified within the study area (Appendix A).

2.2 Town of Innisfil

The footprint of the IH SPS 2 is within an area designated as Employment Area as per Schedule B6 Land Use: Innisfil Heights. Key Natural Heritage Features & Key Hydrologic Features have been mapped within the study area (Appendix A).

As outlined within Section 23.1.15 of the OP infrastructure (including infrastructure required for sewage) shall be permitted in all land use designations except for lands designated Key Natural Heritage Features and Key Hydrological Features in the Greenbelt Plan Area. The study area is not located within the Greenbelt Plan Area.

As per Section 23.1.17 of the OP, infrastructure may be permitted in a Natural Environmental Area Designation where subject to an approved provincial and/or federal environmental assessment.

As per Appendix 9: Natural Areas of the OP, streams have been identified within the study area (Appendix A). There are no ANSI's, wetlands or significant woodlands identified within the study area (Appendix A).

2.3 Lake Simcoe Protection Plan

The study area is not located within a Settlement Area and is within the Lake Simcoe Watershed. Therefore, applicable provision of the Lake Simcoe Protection Plan (LSPP) are relevant to the proposed works. Relevant Natural Heritage policies of the LSPP are highlighted below, although other policies may be applicable, specific to sewage infrastructure.

Key Natural Heritage Features of the LSPP include wetlands, significant woodlands, significant valleylands and natural areas abutting Lake Simcoe. Key hydrologic features are wetlands, permanent and intermittent streams and lakes other than Lake Simcoe (Section 6.21 and 6.22).

As per Section 6.23-DP, development or site alteration is not permitted within a key natural heritage feature, a key hydrologic feature and within a related vegetation protection zone, except in relation to (g) infrastructure, but only if the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and there is no reasonable alternative.

2.4 Lake Simcoe Region Conservation Authority

The study area is located within the jurisdiction of the LSRCA. The study area includes lands subject to O. Reg. 41/24 – "Prohibited Activities, Exemptions and Permit" by the LSRCA (Appendix A). Under Regulation 41/24, the LSRCA may require that approvals be obtained for any proposed development or site alteration within areas regulated under the Conservation Authority's jurisdiction (Appendix B).

2.5 Endangered Species Act, 2007

Ontario's ESA provides regulatory protection to Endangered and Threatened species prohibiting harassment, harm and/or killing of individuals and destruction of their habitats. Habitat is broadly characterized within the ESA as the area prescribed by a regulation as the habitat of the species or an area on which the species depends, directly or indirectly, to carry on its life processes including reproduction, rearing of young, hibernation, migration or feeding.

The various schedules of the ESA included under O. Reg. 230/08 identify SAR in Ontario. These include species listed as Extirpated, Endangered, Threatened and Special Concern. As noted

above, only species listed as Endangered and Threatened receive protection from harm and destruction to habitat on which they depend.

2.6 Federal *Fisheries Act*

The *Fisheries Act* includes protections for fish and fish habitat in the form of standards, codes of practice, and guidelines for projects near water. The *Fisheries Act* provides protection against the "death of fish, other than by fishing", (Section 34.4(1)) and the "harmful alteration, disruption or destruction of fish habitat", (Section 35(1)), otherwise known as HADD. In cases where impacts to fish and fish habitat cannot be avoided, and the project does not fall within waterbodies where Fisheries and Oceans Canada (DFO) review is not required, proponents are asked to submit a request for review to their Fish and Fish Habitat Protection Program regional office to determine approval requirements. All projects are encouraged to avoid causing the death of fish and a HADD of fish habitat, using measures to protect fish and fish habitat that include standards and codes of practice for common works, undertakings and activities.

3.0 STUDY APPROACH

3.1 Field Program Summary

Azimuth attended the property in 2024 to carry out an assessment of the natural features within the study area. Field surveys were completed by Azimuth ecologists on the following dates:

- October 5, and October 20, 2021 – site characterization for preparation of a Preliminary Environmental Constraints Memorandum (Azimuth, 2022)
- June 6, 2024 – Characterization of drainage features (Sara Murphy, Azimuth Aquatic Ecologist)
- June 17 and 26, 2024 – Completion of dawn breeding bird surveys (Lisa Moran, Azimuth Terrestrial Ecologist)
- September 18, 2024 – Vegetation assessment of the property (Jordan Wrobel, Azimuth Terrestrial Ecologist)

Prior to undertaking the field study an initial classification of habitats was undertaken using recent air photo imagery for an area encompassing the study area in conjunction with a review of the EIS associated with the development proposal (Cambium Inc., 2022).

Part of the 2022 EIS (Cambium Inc., 2022) completed for the property included the delineation of wetland communities that were delineated following provincially approved methods as per the Ontario Wetland Evaluation System (MNR, 2014), and verified in the field with LSRCA staff

on July 19, 2021. The digital file with the wetland boundary was obtained from LSRCA and overlaid onto Figure 2 for use in our assessment.

Finally, vegetation boundaries were checked in the field and delineated as illustrated in Figure 2. Vegetation community types were classified using the Ecological Land Classification for Southern Ontario: First Approximation (ELC; Lee *et al*., 1998, updated 2008).

A SAR screening was undertaken for the scope of this assignment that compares the habitat requirements of species with potential to occur in the overall planning area with habitat types that occur on the property. The screening was based on air photo interpretation combined with onsite evaluation of habitats within the study area.

3.1.1 Breeding Bird Surveys

Two dawn breeding bird surveys were conducted within the study area on June 17 and 26, 2024 guided by point count methodology presented in Appendix D of the OBBA Guide for Participants (2001). All surveys were conducted no earlier than one half hour before sunrise and were completed prior to 10:00a.m. Surveys were completed under suitable weather conditions (*i.e.* no precipitation and light winds (Beaufort wind scale ≤3)), with an observation period of 5 minutes carried out at the point count station shown on Figure 2.

3.2 Background Information

A review of background documents provided information on site characteristics, habitat, wildlife, fisheries, rare species and communities, and general cultural/historic aspects of the study area. This included a review of the following:

- MNR's Natural Heritage Information Center (NHIC; MNR, 2024a);
    - Make-A-Map: Natural Heritage Areas application;
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman *et al*., 2007);
- Ontario Reptile and Amphibian Atlas (2020);
- MECP's Species at Risk Ontario list (2024);
- Atlas of the Mammals of Ontario (Dobbyn, 1994).
- LSRCA regulation limit mapping (2024);
- Aerial photographs available for the study area (Google Earth, VuMap);
- County of Simcoe interactive mapping (2024);
- County of Simcoe Official Plan (2020);
- Town of Innisfil Official Plan (2018);
- Environmental Impact Study – 7131 5th Sideroad, Innisfil, ON (Cambium Inc., 2022);

- MNR Fish ON-Line and Geohub interactive Aquatic Resource Area (ARA) mapping (MNR, 2024b, MNR, 2024c);
- DFO Aquatic SAR interactive mapping (2024);
- Ministry of Agriculture, Food and Rural Affairs (OMAFRA) municipal drain mapping (2024); and,
- Barrie Creeks, Lovers Creek and Hewitt's Creek Subwatershed Plan (LSRCA, 2012).

3.3 Agency Correspondence

A Terms of Reference for the above survey program was provided to the LSRCA on August 16, 2024, to which a response was received on September 11, 2024 confirming the scope of the program undertaken was acceptable with a list of additional items to be included within the EIS. Additional information requested by LSRCA included:

- The aquatic habitat assessment for all drainage features/watercourses in the study area, should include characterization of hydrologic features (i.e. permanent, intermittent, ephemeral, headwater drainage feature) and suitability as fish habitat. Include a description of instream and riparian cover, bank stability, substrate composition, stream morphology, dimensions and gradient, thermal regime indicators, potential barriers, woody debris distribution, aqua c vegetation, groundwater seepage areas, etc.),
- Provide a general description of the methodology, dates, timing, and locations of completed field surveys.
- Provide a detailed description of the proposed development.
- Demonstrate how the proposed development is in conformity with all federal, provincial, regional, and,
- municipal natural heritage policies applicable in the Lake Simcoe watershed.

Azimuth is in agreement with this scope. A consultation record between Azimuth and the LSRCA is provided in Appendix B.

4.0 EXISTING CONDITIONS

4.1 Land Use

The study area includes former agricultural lands that have naturalized to some degree to form an open cultural meadow community in addition to wetland. Three (3) watercourses have been identified as traversing through the study area. Active agriculture exists to the south (south of the 7th line and/or 7th line unopened road allowance) and commercial use resides to the west.

4.2 Vegetation and Vegetation Communities

A field survey was undertaken to evaluate vegetation community types including representative plant species compositions on September 18, 2024. The site visit was undertaken by a qualified Terrestrial Ecologist with knowledge of rare, Threatened, and Endangered plant species with potential to occur in the area.

There are no elements of occurrence (EO_ID) within the study area for provincially Endangered or Threatened, or provincially rare vegetation species according to the MNR NHIC database. A detailed survey was undertaken to identify Butternut (*Juglans cinerea*) and Black Ash (*Fraxinus nigra*) trees; however, none were observed within the study area.

No plant species considered Endangered or Threatened were identified during the site investigation. Further, no provincially rare species were observed during the field program. None of the vegetation communities or species documented are of federal or provincial conservation concern (MNR, 2024).

Vegetation communities within the study area were determined in accordance with the ELC system, and are summarized as observed below and illustrated on Figure 2. Vegetation communities identified within the study area include:

MEFM1 (Dry-Fresh Forb Meadow): Highly disturbed regenerating meadow community composed primarily of forb species such as Wild Carrot (*Daucus carota*), Red Clover (*Trifolium pratense*), Bird's-foot Trefoil (*Lotus corniculatus*), New England Aster (*Symphyotrichum novae-angliae*), Horseweed (*Erigeron canadensis*), Orchard Grass (*Dactylis glomerata*), and Tall Goldenrod (*Solidago altissima*) among others.

MAMM1 (Graminoid Mineral Meadow Marsh): Largely dominated by invasive Common Reed (*Phragmites australis ssp. australis*).

SWTM (Mineral Deciduous Thicket Swamp): Includes a mix of willows (*Salix bebbiana, Salix eriocephala*) and Red-osier Dogwood (*Cornus sericea*) with other wetland adept species such as Reed Canary Grass (*Phalaris arundinacea*), Spotted Jewelweed (*Impatiens capensis*) and a pocket of Broad-leaved Cattail (*Typha latifolia*).

SAF1-3 (Duckweed Floating-leaved Shallow Aquatic): Adjacent pond with Common Duckweed (*Lemna minor*) surrounded by shrubs and forbs.

As highlighted above, the limits of the wetlands were confirmed on site with LSRCA through the EIS process associated with the proposed development (Cambium, 2022) and are presented on Figure 2.

4.3 Wildlife and Wildlife Habitat

Direct and indirect observations of wildlife (*i.e.* tracks, scat, fur) are collected as a matter of course during Azimuth's site investigations.

4.3.1 Terrestrial Crayfish

Terrestrial crayfish chimneys (burrows) were observed on the property immediately north of an existing fill pile from the entrance to the property on the east side of the IHL Canada development. While a formal search for chimney crayfish was not undertaken, a total of four chimneys were observed on June 6, 2024. Locations of burrows are shown on Figure 2, with Photographs provided in Appendix C.

As documented in Wild Species Canada (Gov't of Canada, 2005), the Chimney or Digger Crayfish, *Fallicambarus fodiens*, (hereafter Chimney Crayfish) is one of two native, burrowing species found in Ontario. Within Canada, they are only found in southern Ontario, living in wetlands, creek beds, ditches and in dry ground far from permanent surface water. To survive in these habitats, Chimney Crayfish dig burrows into the ground, that consist of one to three entrance tunnels connecting with a vertical shaft. The burrow entrance is marked by a pile (or chimney) of mud pellets, collected during excavation. Chimney Crayfish are thought to be omnivorous; they probably eat any vegetation or invertebrates encountered in their burrows.

The occurrence of the chimneys was also documented by Cambium in the EIS of 2022, occurring in the wetland feature that is limited in size, hydraulically disconnected from surrounding features, dominated by invasive plant species, and disturbed due to human alteration of the landscape. As such, Cambium concluded that the habitat was not considered Significant Wildlife Habitat in according to the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015).

Chimney crayfish are not provincially or federally listed SAR and therefore are not afforded protection under the Provincial ESA or the federal SARA.

4.3.2 Breeding Bird Surveys

A total of 13 bird species were recorded during dawn breeding bird surveys, all of which are typical of open field/thicket habitats (Table 1).

One species of conservation concern, Barn Swallow (Special Concern) was observed foraging during Azimuth's dawn breeding bird survey.

4.4 Species at Risk

A screening for SAR occurred within the planning area based on potentially suitable habitat features identified during the site investigation (Table 2). The SAR assessment fully considers SAR with potential to occur within the overall planning area. Based on this assessment in combination with vegetation communities and other environmental features observed during the site investigation, the following species are considered below in this report:

- **Threatened and Endangered:** None
- **Special Concern:** Barn Swallow, Snapping Turtle

4.5 Wetlands

Wetlands within the study area are not identified as provincially or locally Significant Wetland, or afforded a similar designation on municipal or provincial mapping resources (Appendix A).

Wetlands within the study area are depicted on Figure 2 and are considered "other wetland" for the purposes of this assessment.

4.6 Woodlands

There are no woodlands that have been mapped within the study area according to municipal or provincial mapping resources (Appendix A and D).

Field study confirmed there are no woodlands within the study area (Figure 2).

4.7 Valleylands

There are no valleyland features within the study area according standards presented in the NHRM, principally due to the lack of permanent or intermittent watercourses that constitute a defining component of a valleyland feature. No portion of the study area fulfills the well-defined valley morphology and landform prominence required to be considered Candidate Significant Valleyland.

4.8 Candidate Significant Wildlife Habitat

An assessment of the potential for Significant Wildlife Habitat (SWH) within study area was conducted using the criteria outlined within the Significant Wildlife Habitat Technical Guide (OMNR, 2000) and the accompanying the Ecoregion 6E Criteria Schedules (MNRF, 2015). The following Candidate SWH types were determined to be present, or have potential to be present within the study area based on the results of the field program:

- Turtle Wintering Areas
- Turtle Nesting Areas
- Terrestrial Crayfish
- Special Concern and Rare Wildlife Species (Barn Swallow and Snapping Turtle)

4.9 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest located within the study area according to municipal or provincial mapping resources (Appendix A and D).

4.10 Watercourses and Fish Habitat

The study area includes three unnamed drainage features as shown on Figure 2 that convey drainage from west to east, within the west headwater catchment area Lover's Creek. All are identified by MNR as Aquatic Resource Area (ARA) MH-0140-LOV, within the west catchment of the Lover's Creek watershed, regulated by the LSRCA. Drainage features were assessed during field visits in 2024, and previously by Cambium as part of the EIS completed for the property (Cambium, 2022). Site observations are described in the following sections.

4.10.1 Tributary of Lover's Creek – North Watercourse

Desktop mapping resources identifies a feature as originating at Line 5, extending east towards Highway 400. The channel is a first order system that appears historically channelized between agricultural lands and a privately owned commercial business (IHL Canada) within the Lover's Creek sub-watershed. The feature is a mapped watercourse that conveys permanent flow eastward, crossing under Highway 400 to the Lover's Creek Provincially Significant Wetland (PSW) located approximately 240m east of the Highway. The watercourse is approximately 1m wide with a wetted depth of approximately 0.2cm. MNR background information classifies the system as thermally coldwater, however fish sampling completed by Cambium for the EIS (Cambium, 2022), captured Creek Chub and Brook Stickleback in shallow water, noting that the Tributary was deemed as not suitable for coldwater species spawning. The creek and associated floodplain are regulated by the LSRCA, and the watercourse functions as fish habitat,

protected under the Federal *Fisheries Act*. There are no records of aquatic SAR in the sub-watershed.

4.10.2 Tributary of Lover's Creek – South Watercourse

Desktop mapping indicates two drainage features located on either side of the unassumed 7th Line road allowance that extends towards Highway 400. Site assessment of both features indicates that the primary flow is along the south side of the road allowance, appearing to originate at a small pond approximately 400m^2 in size, that discharges flow in the south side ditch towards Highway 400. Photographs are provided in Appendix C.

The ditch is vegetated with tree and shrub cover to providing stream shading. Watercress (*Nasturtium sp.*) was observed through the reach, indicating that some degree of groundwater upwelling or seeps occurs locally. The channel width varied up to 0.3- 0.4m, and had a shallow water wetted depth of up to 0.05m. The system had trickle flow in June, and flows are considered permanent.

Flow is conveyed easterly under Highway 400, joining drainage from the north Tributary approximately 250m east of the highway at the west limits of the Lover's Creek PSW. To our knowledge, fish sampling has not been historically completed on this feature, however background information from MNR indicate coldwater conditions. Given flow permanency and hydraulic connectivity downstream there is expectation that the south side ditch functions as a watercourse, and fish habitat, with potential to host fish directly on a seasonal basis. The creek and associated floodplain are regulated by the LSRCA, and the watercourse functions as fish habitat, protected under the Federal *Fisheries Act*.

Secondary drainage occurs to this Tributary from a ditch on the north side of the unassumed road allowance. The ditch originates at an informal driveway entrance east of the IHL Canada development area, and was dry at the time of field visits. Drainage occurs under the road allowance as shown on Figure 2, via a corrugated steel pipe culvert, with a small grade drop at the outlet before entering the south side watercourse.

As of April 1, 2024, the *Conservation Authorities Act* modified the definition of a watercourse as, *"*a defined channel, having a bed and banks or sides, in which a flow of water regularly or continuously occurs*"*. (*Conservation Authorities Act*, 2024). The ditch was vegetated and did not contain substrate or features indicative of a watercourse. Headwater drainage features (HDF) are defined within Credit Valley Conservation and Toronto and Region Conservation Authority's Headwater Drainage Feature Guidelines (2014; subsequently referred to as "the HDF Guideline") as: "non-permanently flowing drainage features that may not have defined

beds or banks; they are first-order and zero-order intermittent and ephemeral channels, swales and connected headwater wetlands, but do not include rills or furrows". The ditch may meet this definition, however given the artificial nature of the ditch it would be conservative to consider it a HDF.

Drainage on the north side of the road allowance is regulated by the LSRCA (Appendix B), functioning as ephemeral with storm responsive conveyance functions. Based on site observation it is not considered a watercourse, and does not function as fish habitat. As such, it is not protected under the Federal *Fisheries Act*. In any case, runoff from the ditch ultimately enters the permanently flowing Tributary on the south side of the road allowance, therefore the ditch does have indirect conveyance functions requiring consideration of mitigation measures during site development given proximity to a watercourse.

5.0 KEY NATURAL HERITAGE FEATURES SUMMARY

The results of Azimuth's site investigation combined with review of background information indicate the potential for the following candidate KNHFs within the study area:

- Other Wetlands
- Candidate Significant Wildlife Habitat
    - Turtle Wintering Areas
    - Turtle Nesting Areas
    - Terrestrial Crayfish
    - Habitat for Special Concern and Rare Wildlife Species
        - Barn Swallow and Snapping Turtle
- Fish Habitat
    - direct fish habitat in the north Tributary
    - potential for seasonal direct in the south Tributary (south side of the unassumed road allowance).

6.0 PROPOSED WORKS

The build-out of the servicing area for IH SPS 2 is defined as the complete development of the proposed lands to meet the short- and long-term needs of the Innisfil Heights economic area. Additionally, flow from SPS 4 will be directed to the trunk sewer on Innisfil Beach Road via IH SPS 2. SPS 4 is a proposed potential station that may be constructed in the future but is outside the scope of this EA.

SPS 2 will service 65.6 hectares (ha) of industrial land and receive flow from IH SPS 4. According to the Town of Innisfil's design criteria, the total average daily flow of 13.2 L/s and the total peak wet weather flow of 26.5 L/s will be directed to the proposed IH SPS 2.

7.0 IMPACT ASSESSMENT

This impact assessment is prepared with regards to the construction footprint of the proposed IH SPS 2, as described above and illustrated in Figure 2.

7.1 Other Wetlands

There are no anticipated impacts to the identified wetlands resulting from the construction of IH SPS 2.

The identified wetlands, on the property and south of Line 7 will not be directly impacted as a result of the IH SPS 2 (Figure 2). Due to the intervening road (7th Line), there is no expectation that there will be any indirect impact to the SAS-1 (Figure 2), provided the appropriate mitigation measures, including erosion and sediment controls are implemented.

It is our understanding that, the potential impacts to the wetland features have been considered within the EIS associated with the EIS for the development proposal (Cambium Inc., 2022). Where wetland removals are required (associated with the development application), it is our understanding that the proponent associated with the development proposal is working with the LSRCA with respect to compensation associated with the loss of this wetland feature. Therefore, no further action is required with respect to the wetland loss.

7.2 Candidate Significant Wildlife Habitat

7.2.1 Turtle Wintering Areas and Turtle Nesting Areas

It is expected that any potential turtle nesting habitat would be in the vicinity of the pond (unconfirmed). As indicated in Section 7.1 above, there is no expectation that there will be any direct or indirect impacts to the wetland (*i.e.* pond) located to the south of Line 7, provided the appropriate mitigation measures are implemented. Mitigation recommendations have been included should any nesting turtles be encountered.

7.2.2 Terrestrial Crayfish

IH SPS 2 will not have impact on the identified Terrestrial Crayfish habitat identified within the study area.

As part of the development approval process and as documented in Cambium (2022), Cambium recommended that the Terrestrial Crayfish be relocated to an alternate location within suitable habitat within the overall property immediately prior to earthworks.

7.2.3 Habitat for Special Concern and Rare Wildlife Species

Barn Swallow

There will be no impacts to potential nesting habitat (*i.e.* structures) that may occur on adjacent lands. Foraging habitat is abundant locally and there is no expectation that there will be any impact to this function. There will be no impacts to this potential SWH function.

Snapping Turtle

As indicated in Section 7.1 above, there is no expectation that there will be any direct or indirect impacts to the wetland (*i.e.* pond) located to the south of Line 7, provided the appropriate mitigation measures are implemented. There will be no impacts to this potential SWH function.

7.3 Fish Habitat

The sanitary pump station proposed in Block 8 is on the north side of the 7th Line road allowance, on the south side of the SWM pond proposed as part of the property development previously evaluated and documented in the EIS completed by Cambium (2022). The Block 8 parcel has no impact on the north watercourse or the south watercourse. The area is adjacent to the ephemeral drainage feature on the north side of the 7th Line road allowance, but does not have direct impact on a watercourse.

Site alteration is proposed in proximity to fish habitat on the south side of the road allowance, therefore mitigation will be required to protect identified features and fish habitat. Mitigation will also be required to prevent indirect effects to the ditch on the north side of the allowance, considering that site runoff ultimately reaches areas of fish habitat downstream. Mitigation should focus on isolating areas of site disturbance and sediment and erosion control to prevent offsite mobilization of sediments to prevent entry to the adjacent watercourse.

Measures to protect fish habitat can be developed prior to construction, in order to prevent impacts to fish habitat, therefore project review under the *Fisheries Act* will not be required for the project. Noting that this EIS is only for the development of the IH SPS 2 in Block 8, and acknowledges that a separate EIS has already been prepared for the property development as documented in the EIS by Cambium (2022).

8.0 MITIGATION

8.1 Species at Risk

It should be noted that the absence of a protected species within the study area does not indicate that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. Care should be taken in the interpretation of presence of species of concern including those listed under the ESA. Changes to policy, or the natural environment, could result in shifts, removal, or addition of new areas to the list of areas currently considered SAR habitat. This report is intended as a point in time assessment of the potential to impact SAR; not to provide long term "clearance" for SAR. While there is no expectation that the assessment should change significantly, it is the responsibility of the proponent to ensure that they are not in contravention of the ESA at the time that site works are undertaken. A review of the assessment provided in this report by a qualified person should be sufficient to provide appropriate advice at the time of the onset of future site works.

8.2 Migratory Birds

Activities involving the removal of vegetation should be restricted from occurring during the breeding season. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 (MBCA) and the *Fish and Wildlife Conservation Act,* 1997 (FWCA). Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website. In Zones C1 and C2 vegetation clearing should be avoided between **April 1 through August 31** of any given year. If work requires that vegetation clearing is required between these dates screening by an ecologist with knowledge of bird species present in the area could be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

8.3 Turtle Mitigation

IH SPS 2 will occur in proximity to potential habitat for turtles, identified within an open pond (SAS_1) south of the 7th Line road allowance (Figure 2). Mitigation measures as outlined in Cambium (2022) would be applicable to works associated with the IH SPS 2 and include:

- Worker training to identify potential turtle nests (nesting season occurs May 15 – August 15);
- Stockpiled materials should be kept inside exclusion fencing and covered (if possible);
- Should nesting turtles be encountered, work should stop and the turtle should be left to finish nesting (undisturbed). The nest should be marked to ensure it is left undisturbed for the duration of construction or until the eggs have hatched;

- If nesting occurs in stockpile, a qualified individual (Ecologist) should be contacted to determine if the nest can be re-located; and
- Individual turtles encountered should be allowed to move out of the work area.

8.4 Fish Habitat

Site development for IH SPS 2 will occur near fish habitat, and will require measures to protect fish and fish habitat using standards for routine works, undertakings and activities. Mitigation planning should include best management practices for works around waterbodies, with focus on work area isolation and use of sediment and erosion control measures to prevent mobilization of sediment laden runoff to a waterbody, particularly following storm events.

Construction work plans should ensure proper sediment control by:

- avoiding introducing sediment in the water
- developing and implementing an erosion and sediment control plan:
    - installing effective erosion and sediment control measures to stabilize all erodible and exposed areas;
    - regularly inspecting and maintaining the erosion and sediment control measures during all phases of the project;
    - keeping the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized;
    - installing settling basin and/or filtration system for water flowing onto the site and water being pumped or diverted from the site, including:
        - holding back runoff water until suspended sediment has resettled in the settling basin and runoff water is clear;
        - dewatering gradually to prevent sediment resuspension and bank destabilization;
- disposing of and stabilizing all excavated material above the high water mark or top of bank of nearby waterbodies and ensuring sediment re-entry to the watercourse is prevented;
- heeding weather advisories and scheduling work to avoid wet, windy and rainy periods that may result in high flow volumes and/ or increase erosion and sedimentation;
- regularly monitoring the watercourse for signs of sedimentation during all phases of the work, undertaking or activity and taking corrective action if required;
- using biodegradable erosion and sediment control materials whenever possible and removing all exposed non-biodegradable erosion and sediment control materials once site is stabilized;
- operating machinery on land in stable dry areas;

- stopping work and containing sediment-laden water to prevent dispersal;
- installing temporary clear span bridges to accommodate expected high water flows and to not damage erodible banks;
- limiting the impacts to stream or shoreline banks.

Construction work will be required to prevent entry of deleterious substances in water by:

- avoiding depositing any deleterious substances in the watercourse;
- developing a response plan to be implemented immediately in the event of a spill of a deleterious substance;
- keeping an emergency spill kit on site;
- stopping work and containing deleterious substances to prevent dispersal;
- reporting any spills of sewage, oil, fuel or other deleterious material whether near or directly into a water body;
- ensuring clean-up measures are suitably applied so as not to result in further alteration of the bed and/or banks of the watercourse;
- cleaning up and appropriately disposing of the deleterious substances;
- planning activities near water such that materials and chemicals do not enter the watercourse, including:
    - grout
    - paint
    - primers
    - degreasers
    - rust solvents
    - poured concrete
    - blasting abrasives
    - or other chemicals
- maintaining all machinery on site in a clean condition and free of fluid leaks to prevent any deleterious substances from entering the water;
- washing, refueling and servicing machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water;
- disposing all waste materials (including construction, demolition, excavation, commercial logging) above the high water mark of nearby waterbodies to prevent entry;
- ensuring that building material used in a watercourse is handled and treated in a manner to prevent the release or leaching of substances into the water that may be deleterious to fish.

8.5 Sediment and Erosion Controls

As indicated above, diligent application of sediment and erosion controls (ESCs) is required for all construction activities to minimize the extent of accidental or unavoidable impacts to adjacent vegetation communities, wildlife habitat and fish habitat. Prior to the commencement of site works, silt fencing should be applied along the length of directly adjacent natural or naturalized features, and routine inspection/maintenance of the silt fencing should occur throughout construction. It is recommended that ESCs be maintained until vegetation is re-established post-construction.

Materials storage on the property (*i.e*. soil stockpiles) should be located over 30m from natural features where feasible. Material storage areas should be contained with ESCs to avoid potential indirect impacts to natural features onsite.

8.6 Operations

All maintenance activities (including refueling) required during future construction should be conducted at least 30m away from natural features to prevent accidental spillage of deleterious substances that may harm natural environments.

Snow fencing or equivalent should be installed at the limit of the work area to prevent the accidental intrusion of machinery operations into adjacent undisturbed natural areas.

The contractor is recommended to have a Contaminant and Spill Management Plan in place prior to initiation of works. This should include keeping an emergency spill kit on site at all times. In the event of a spill, the contractor must report it immediately to the provincial Spills Action Centre (SAC).

9.0 CONCLUSIONS

Based upon our analysis, it is concluded that the environmental conditions are not limiting to the construction of the IH SPS 2 through incorporation of the environmental protection measures described in Section 8 of this report.

At this time, our findings are summarized as follows:

- The proposed infrastructure works are consistent with the applicable natural heritage policies of the ESA, County of Simcoe Official Plan, Town of Innisfil Official Plan, and the Lake Simcoe Protection Plan.

- A permit from the LSRCA under O. Reg. 41/24 may be required prior to worksite disturbance.

- The proposed works are not expected to negatively impact the ecological functions of Other Wetlands or Candidate Significant Wildlife Habitat outlined in Section 5 if the appropriate mitigation measures outlined in Section 8 are followed.

- No ephemeral, intermittent or permanent drainage features, open water units, fish or fish habitat are expected to be negatively impacted as a result of the proposed works if the appropriate mitigation measures described in Section 8 are followed during and post construction.

10.0 REFERENCES

Azimuth Environmental Consulting Inc. 2022. Environmental Constraints Analysis of Natural Heritage Features Sewage Pumping Station #2

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario (OBBA). 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologies, Ontario Ministry of Natural Resources and Ontario Nature, Toronto, xxii + 706pp.

Cambium, 2022. Environmental Impact Study – 7131 5th Sideroad, Innisfil, Ontario. Cambium Reference 12513-002

Conservation Authorities Act, 2024. R.S.O. 1990, Chapter C.27. Access version in force: June 6, 2024.

County of Simcoe. Office Consolidation February 2023. County of Simcoe Official Plan.

County of Simcoe. 2024 Online Mapping (https://opengis.simcoe.ca/)

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists.

Endangered Species Act, Ontario. 2007. An Act to protect species at risk and to make related changes to other Acts. Bill 184 Chapter 6, Statutes of Ontario 2007.

Fish and Wildlife Conservation Act, Ontario. 1997. S.O. 1997, c.41

Fisheries and Oceans Canada. 2024. Aquatic Species at Risk Map (https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html)

Government of Canada. 1985. *Federal Fisheries Act.* (http://laws-lois.justice.gc.ca/eng/acts/f-14/)

Government of Canada, 2005. Wild Species 2005: The General Status of Species in Canada

Government of Canada. 2014. *Migratory Birds Convention Act*. (http://laws-lois.justice.gc.ca/eng/acts/M-7.01/)

Government of Canada. 2024. List of Wildlife Species at Risk.

(https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

iNaturalist. 2024. (NHIC) Rare Species of Ontario. (https://www.inaturalist.org/projects/nhic-rare-species-of-ontario).

Lake Simcoe Protection Plan. 2009.

Lake Simcoe Region Conservation Authority (LSRCA) 2012. Barrie Creeks, Lovers Creek and Hewitt's Creek Subwatershed Plan.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998, 2008. Ecological Land Classification for Southern Ontario. First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Sciences Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Ministry of the Environment, Conservation and Parks (MECP). 2024. Species at Risk in Ontario List. (https://www.ontario.ca/page/species-risk).

Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. Ontario Ministry of Natural Resources, Fish & Wildlife Branch, Wildlife Section. Peterborough, ON.

Ministry of Natural Resources. 2010. Natural Heritage Reference Manual for Policy 2.3 of the provincial policy statement, 2005 (2nd Ed.). Ontario Ministry of Natural Resources, Toronto, ON.

Ministry of Natural Resources, 2014, Significant Wildlife Habitat Mitigation Support Tool. (https://docs.ontario.ca/documents/4773/mnr-swhmist-accessible-2015-03-10.pdf)

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat criterion schedules for Ecoregion 6E. MNRF Regional Operations Division & Northeast Region Resources Section. 39pp.

Ministry of Natural Resources and Forestry (MNRF), 2014. Ontario Wetland Evaluation System: Southern Manual. 3rd Edition, King's Printer for Ontario. vi. +
239 pp.

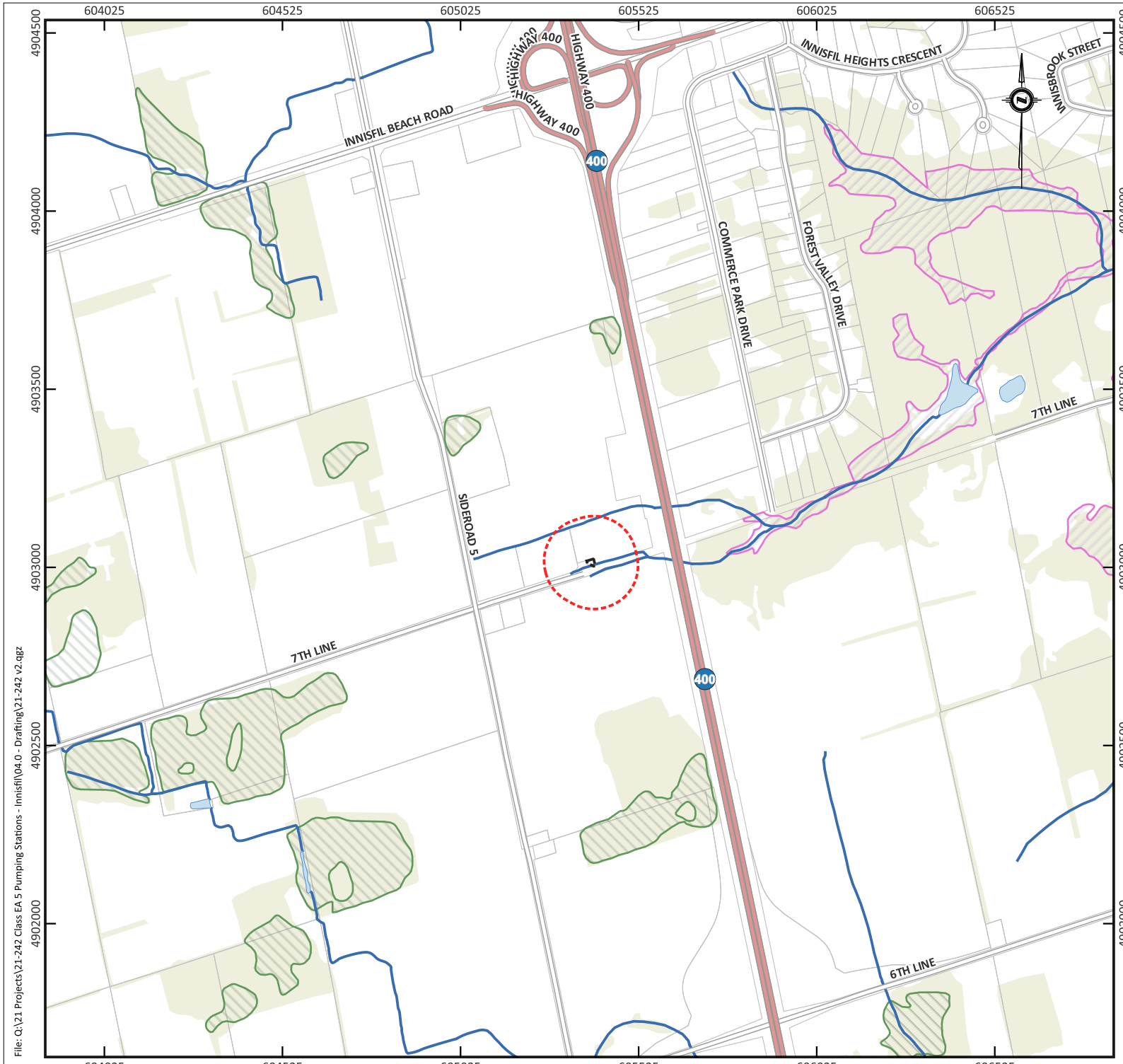
Ministry of Natural Resources (MNR). 2024a. Geohub interactive Aquatic Resource Area (https://geohub.lio.gov.on.ca/datasets/aquatic-resource-area-polygon-segment-/explore)

Ministry of Natural Resources (MNR). 2024b. Fish ON-line (https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA)

Ministry of Natural Resources (MNR). 2024c. Natural Heritage Information Centre (NHIC) internet web page. Government of Ontario, Ministry of Natural Resources (https://www.ontario.ca/page/natural-heritage-information-centre).

Ontario Nature. 2020. Ontario Reptile and Amphibian Atlas Program (https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/).

Town of Innisfil. 2018. Our Place Innisfil Official Plan.



LEGEND

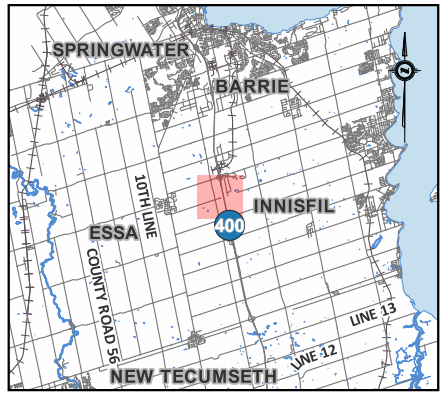
- Approximate Location of Inn Services\Sewage Pu
- 120m Radius Study Area
- Waterbody
- Mapped Watercourse
- Unevaluated Wetland
- Provincially Significant Wetland
- Wooded Area
- Road
- Highway

NOTES

1. Watercourse, Waterbody, Wetland, Woodland and ANSI layers are derived from MNRF GIS data, retrieved December 2022.
2. The metric grid displayed on the map corresponds to NAD83 / UTM zone 17N (EPSG:26917).

REGIONAL MAP

SCALE 1:500000



0 0.25 0.5 0.75

KILOMETERS

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

SITE LOCATION

INN SERVICES PUMPING STATION #2
INNISFIL, ON

DATE ISSUED:	NOVEMBER 2024
CREATED BY:	A.L.
PROJECT NO.:	21-242
BASE MAP:	MNRF

Figure No. 1

File: Q:\21 Projects\21-242 Class EA 5 Pumping Stations - Innisfil\04.0 - Drafting\21-242 v2.qgz

ACTIVE AGRICULTURE

TRIBUTARY OF LOVERS CREEK (NORTH)

FARM CROSSING CULVERT

MAMM1

MEFM1

BLOCK 7

14m MTO SETBACK

HIGHWAY 400

CULVERT

1

2

TRIBUTARY OF LOVERS CREEK (CENTRAL)

SWTM

7TH LINE

ACCESS ROAD

HEDGEROW

CULVERT

SAS-1

POND
(OPEN WATER)

ACTIVE AGRICULTURE

CULVERT

PROJECT NORTH

TRUE NORTH

LEGEND:

- PROPOSED LOCATION OF SPS #2
- 120m RADIUS STUDY AREA
- PERMANENT DRAINAGE
- EPHEMERAL DRAINAGE
- CULVERT

ELC UPLAND COMMUNITIES:

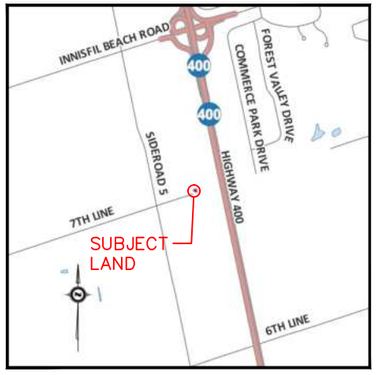
MEFM1 DRY_FRESH FORB MEADOW

ELC WETLAND COMMUNITIES:

MAMM1 GRAMINOID MINERAL MEADOW MARSH
SWTM MINERAL DECIDUOUS THICKET SWAMP
SAS-1 SUBMERGED SHALLOW AQUATIC

- LSRCA CONFIRMED WETLAND (2021)
- DAWN BREEDING BIRD SURVEY STATION
- CHIMNEY CRAYFISH

LOCATION PLAN



0 25.00 50.0

HORIZONTAL SCALE 1:1000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
ENVIRONMENTAL ASSESSMENTS & APPROVALS

ENVIRONMENTAL FEATURES & PROPOSED LOCATION OF SPS #2

INN SERVICES PUMPING STATION #2
INNISFIL, ON

DATE ISSUED:	NOVEMBER 2024	Figure No.
CREATED BY:	A.L.	2
PROJECT NO.:	21-242	
REFERENCE:	SIMCOE COUNTY	

Plotted by: AUJ on November 25, 2024 at 4:21pm
File: G:\21 projects\21-242_class ea 5 pumping stations - innisfil\04.0 - drafting\21-242 IH SPS 2.dwg Layout: 2 ENVIRONMENTAL FEATURES & PROPOSED LOCATION OF SPS #2 Plotscale: 1

Table 1: Breeding Bird Summary, IHSPS2, Town of Innisfil AEC21-242

FAMILY	SCIENTIFIC NAME	COMMON NAME	Location[1,2]				Adjacent Lands	Incidental	Conservation Rankings[3]				
			1		2				GRANK	SRANK	ESA	SARA	TRACK
			Visit 1	Visit 2	Visit 1	Visit 2							
Fringillidae	*Spinus tristis*	American Goldfinch	S	S	S	S			G5	S5			N
Parulidae	*Setophaga petechia*	Yellow Warbler	S	S	S	S			G5	S5B			N
Passerellidae	*Passerculus sandwichensis*	Savannah Sparrow	S	S	S	S			G5	S5B,S3N			N
Parulidae	*Geothlypis trichas*	Common Yellowthroat		S		S			G5	S5B,S3N			N
Icteridae	*Agelaius phoeniceus*	Red-winged Blackbird	P	S	S	S			G5	S5			N
Bombycillidae	*Bombycilla cedrorum*	Cedar Waxwing				S			G5	S5			N
Sturnidae	*Sturnus vulgaris*	European Starling			FO				G5	SNA			N
Charadriidae	*Charadrius vociferus*	Killdeer			FO				G5	S4B			N
Passerellidae	*Melospiza melodia*	Song Sparrow	S	S	S				G5	S5			N
Corvidae	*Corvus brachyrhynchos*	American Crow		S					G5	S5			N
Hirundinidae	*Hirundo rustica*	Barn Swallow		FORAGE					G5	S4B	SC	THR	Y
Turdidae	*Turdus migratorius*	American Robin	S						G5	S5			N
Columbidae	*Zenaida macroura*	Mourning Dove	H						G5	S5			N

[1] Visit 1: June 17, 2024, Observer: L.Moran, Temperature 22°C, Cloud Cover 10% , Wind: B2, Precipitation: Nil, Search Time09:15 to 09:42; Visit 2: June 26, 2024, Observer: L.Moran, Temperature 20°C, Cloud Cover 40% , Wind: B1, Precipitation: Nil, Search Time 08:24 to 08:46

[2] Breeding Bird Evidence Codes: X - Species observed, C - Call heard, FO - Flyover (Species presence); H - Species observed in its breeding season in suitable nesting habitat, S - Singing male (Possible Breeding); P - Pair observed , T - Territorial behaviour, A - Agitated behaviour or anxiety calls of adult, V - Visiting a probably nest site, N - Nest building or excavation of nest hole (Probable Breeding); DD - Distraction display or injury feigning, NU - Used Nest or egg shells, FY - Recently fledged young, AE - Adult leaving or entering nest sites, FS - Adult carrying fecal sac, CF - Adult carrying food for young, NE - Nest containing eggs, NY - Nest with young seen or heard (Confirmed Breeding).

[3] Conservation Rankings: From Ontario Ministry of Natural Resources, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

Common Name	Species Name	ESA	SARA	Key Habitats Used By Species[1]	Assessment
Bank Swallow	*Riparia riparia*	THR	THR	Nests in burrows excavated in natural and human-made settings with vertical sand and silt faces. Commonly found in sand or gravel pits, road cuts, lakeshore bluffs, and along riverbanks (COSEWIC, 2013a). ESA Protection: Species and general habitat protection	No potentially suitable habitat for the species within the study area. Not documented during Azimuth's 2024 dawn breeding bird surveys.
Barn Swallow	*Hirundo rustica*	SC	THR	Ledges and walls of man-made structures such as buildings, barns, boathouses, garages, culverts and bridges. (COSEWIC, 2011a). ESA Protection: Species and general habitat protection	Observed foraging during one of Azimuth's dawn breeding bird surveys. No evidence of possible or probable breeding. The adjacent land use (structure) may provide suitable nesting habitat for the species.
Black Ash	*Fraxinus nigra*	END	No Status	Facultative wetland tree species frequently found in floodplain forests, swamps, seepage areas, shoreline margins and fens. Occupied sites are generally seasonally-flooded (COSEWIC, 2018a). ESA Protection: Species and general habitat protection	No Black Ash observed during Azimuth's field investigations.
Bobolink	*Dolichonyx oryzivorus*	THR	THR	Nests primarily in forage crops (*e.g.* hayfields and pastures) dominated by a variety of species such as clover, Timothy, Kentucky Bluegrass, tall grass, and broadleaved plants. abandoned fields dominated by tall grasses. Does not generally occupy fields of row crops or short-grass prairie. Sensitive to habitat size and has lower reproductive success in small habitat fragments (COSEWIC, 2010). ESA Protection: Species and general habitat protection	Meadow habitat is primarily composed of forb species, which is not typical habitat for Bobolink. No Bobolink were observed during Azimuth's 2024 dawn breeding bird surveys.
Butternut	*Juglans cinerea*	END	END	Commonly found in riparian habitats, but is also found in rich, moist, well-drained loams, and well-drained gravels. Butternut is intolerant of shade (COSEWIC, 2017). ESA Protection: Species and general habitat protection	No Butternut observed during Azimuth's field investigations.
Chimney Swift	*Chaetura pelagica*	THR	THR	Nests primarily in chimneys though some populations (*i.e* . in rural northern areas) may nest in cavity trees (COSEWIC, 2018b). Recent changes in chimney design may be a significant factor in recent declines in numbers (Cadman *et al* ., 2007). ESA Protection: Species and general habitat protection	No potentially suitable habitat for the species within the study area. Not documented during Azimuth's 2024 dawn breeding bird surveys.
Common Nighthawk	*Chordeiles minor*	SC	THR	Open habitats including sand dunes, beaches recently logged/burned over areas, forest clearings, short grass prairies, pastures, open forests, bogs, marshes, lakeshores, gravel roads, mine tailings, quarries, and other open relatively clear areas (COSEWIC, 2018c). ESA Protection: N/A	No potentiallly suitable habitat for the species within the study area. Meadow habitat is fully vegetated. Historically, it appears that disturbance has occurred throughout the years at the southwest access point into the property. Due to the frequency of disturbance, it is not anticipated that sutiable conditions for Common Nighthawk are present. Similarily, continuous use along 7th Line and on adjacent commercial lands make it unsuitable for the species. Not documented during Azimuth's 2024 field surveys.
Eastern Meadowlark	*Sturnella magna*	THR	THR	Most common in grassland, pastures, savannahs, as well as anthropogenic grassland habitats, including hayfields, weedy meadows, young orchards, golf courses, restored surface mines, *etc* . (COSEWIC, 2011). ESA Protection: Species and general habitat protection	Meadow habtiat is primarily composed of forb species, which is not typical habitat for Eastern Meadowlark. No Eastern Meadowlark were observed during Azimuth's 2024 dawn breeding bird surveys.
Eastern Wood-pewee	*Contopus virens*	SC	SC	Mostly in mature and intermediate-age deciduous and mixed forests having an open understory. It is often associated with forests dominated by Sugar Maple and oak. Usually associated with forest clearings and edges within the vicinity of its nest (COSEWIC, 2012a). ESA Protection: N/A	No potentially suitable woodland habitat within the study area. Species not documented during Azimuth's 2024 dawn breeding bird surveys.
Grasshopper Sparrow *pratensis* subspecies	*Ammodramus savannarum pratensis*	SC	SC	Typically breeds in large human-created grasslands (≥5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by low, sparse perennial herbaceous vegetation (COSEWIC, 2013b). ESA Protection: N/A	Meadow habtiat is primarily composed of forb species, which is not typical habitat for Grasshopper Sparrow. No Grasshopper Sparrow were observed during Azimuth's 2024 dawn breeding bird surveys.
Little Brown Myotis	*Myotis lucifugus*	END	END	Forests and regularly aging human structures as maternity roost sites. Regularly associated with attics of older buildings and barns for summer maternity roost colonies. Overwintering sites are characteristically mines or caves (MNRF, 2014) (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland habiat within the study area that could provide potentially suitable habtiat for the species.
Monarch	*Danaus plexippus*	SC	SC	Breeding habitat is confined to sites where milkweeds, the sole food of caterpillars, grow. Milkweeds grow in a variety of environments, including meadows in farmlands, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairie, river banks, irrigation ditches, arid valleys, and south-facing hills (COSEWIC, 2016). ESA Protection: N/A	There was not an abundance of Common Milkweed documented within the meadow community. No Monarch were observed during Azimuth's field investigations.
Northern Myotis	*Myotis septentrionalis*	END	END	Maternity roost sites are generally located within deciduous and mixed forests and focused in snags including loose bark and cavities of trees. Overwintering sites are characteristically mines or caves (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland habitat within the study area that could provide potentially suitable habtiat for the species.
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	END	Occurs in open deciduous forests, particularly those dominated by oak and beech, groves of dead trees, floodplain forests, orchards, cemeteries, savannas and savanna-like grasslands. (COSEWIC, 2018d). ESA Protection: Species and general habitat protection.	No potentially suitable habitat within the study area. Species not documented during Azimuth's 2024 dawn breeding bird surveys.
Snapping Turtle	*Chelydra serpentina*	SC	SC	Habitat is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats (COSEWIC, 2008). ESA Protection: N/A	The adjacent pond could provide suitable habitat for Snapping Turtle (unconfirmed).
Tri-colored Bat	*Perimyotis subflavus*	END	END	Maternity roost sites include forests and modified landscapes (barns or human-made structures). Overwintering sites include mines and caves (COSEWIC, 2013c). ESA Protection: Species and general habitat protection	There is no woodland habiat within the study area that could provide potentially suitable habitat for the species.
Wood Thrush	*Hylocichla mustelina*	SC	THR	Found in moist, deciduous hardwood or mixed stands, often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches (COSEWIC, 2012b). ESA Protection: N/A	There is no woodland habiat within the study area that could provide potentially suitable habitat for the species. Wood Thrush was not documented during Azimuth's dawn breeding bird surveys.

[1] Habitat as outlined within the MNR's Species at Risk in Ontario website files (https://www.ontario.ca/environment-and-energy/species-risk-ontario-list), or Species Specific COSEWIC Reports referenced in this document.

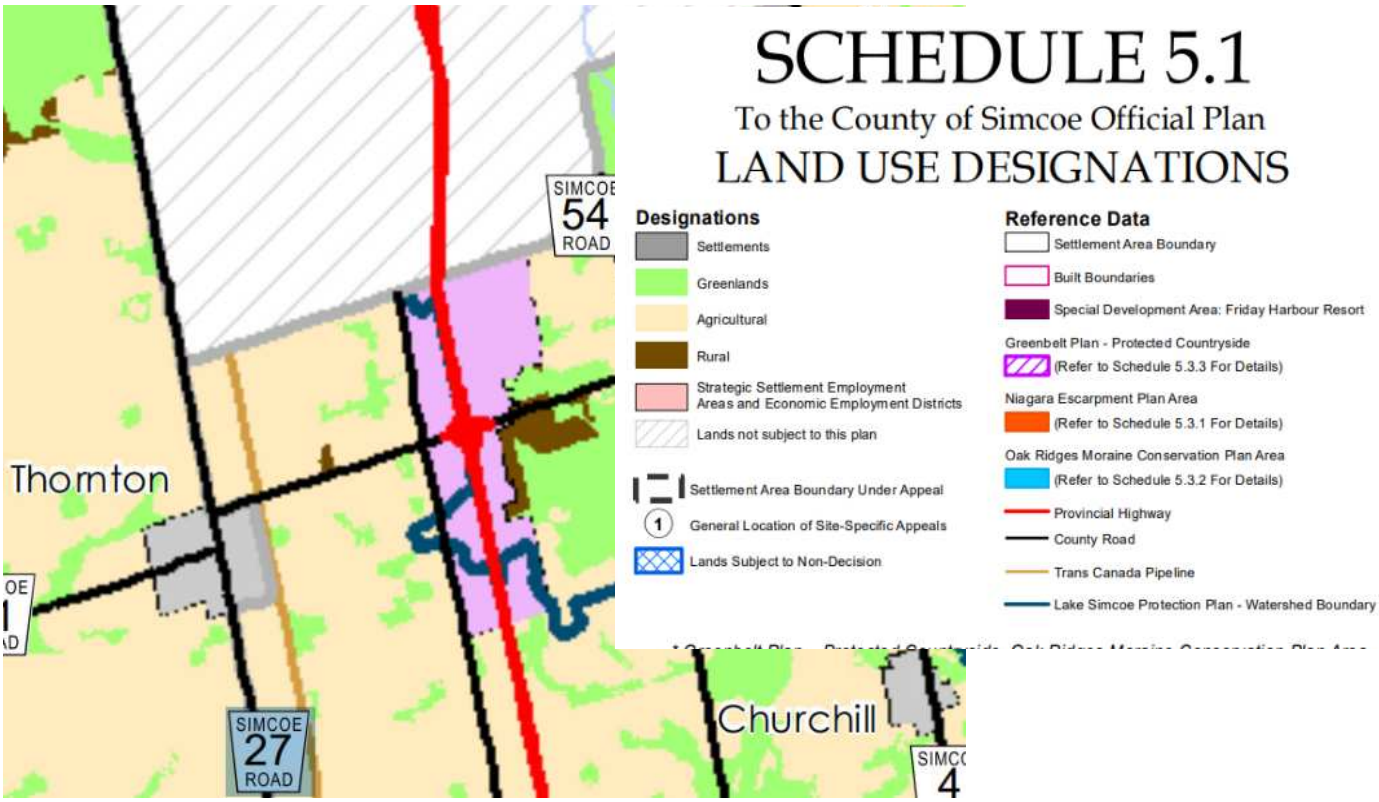
Species at Risk in Ontario List (June 13, 2017)
Best, T., and J. Jennings. 1997. Mammalian Species, *Myotis leibii* . The American Society of Mammalogists. No. 547, pp. 1-6, 5 figs.
Cadman, M., D. Sutherland, G. Beck, D. Lepage and A. Couturier. 2007. Atlas of the Breeding Birds of Ontario 2001-2005. Bird Studies Canada, Environment
COSEWIC. 2008. COSEWIC assessment and status report on the Snapping Turtle *Chelydra serpentina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 47 pp
COSEWIC. 2010. COSEWIC assessment and update status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp
COSEWIC. 2011a. COSEWIC assessment and update status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp
COSEWIC. 2011. COSEWIC assessment and update status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp
COSEWIC. 2012a. COSEWIC assessment and status report on the Eastern Wood-pewee *Contopus virens* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 39 pp
COSEWIC. 2012b. COSEWIC assessment and status report on the Wood Thrush *Hylocichla mustelina* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 46 pp
COSEWIC. 2013a. COSEWIC assessment and update status report on the Bank Swallow *Riparia riparia* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 48 pp
COSEWIC. 2013b. COSEWIC assessment and status report on the Grasshopper Sparrow pratensis subspecies *Ammodramus savannarum pratensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 36
COSEWIC. 2013c. COSEWIC assessment and update status report on the Little Brown Myotis *Myotis lucifugus* , Northern Myotis *Myotis septentrionalis* and Tri-colored Bat *Perimyotis subfalvus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xxiv + 93 pp.
COSEWIC. 2016. COSEWIC assessment and status report on the Monarch *Danaus plexippus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 59 pp
COSEWIC. 2017. COSEWIC assessment and status report on the Butternut *Juglans cinerea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 74 pp
COSEWIC. 2018a. COSEWIC assessment and status report on the Black Ash *Fraxinus nigra* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 95 pp
COSEWIC. 2018b. COSEWIC assessment and status report on the Chimney Swift *Chaetura pelagic* a in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 49 pp
COSEWIC. 2018c. COSEWIC assessment and status report on the Common Nighthawk *Chordeiles minor* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 50 pp
COSEWIC. 2018d. COSEWIC assessment and status report on the Red-headed Woodpecker *Melanerpes erythrocephalu* s in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 60 pp
Ministry of the Environment, Conservation and Parks (MECP). 2024. Species at Risk in Ontario (https://www.ontario.ca/page/species-risk-ontario)

APPENDICES

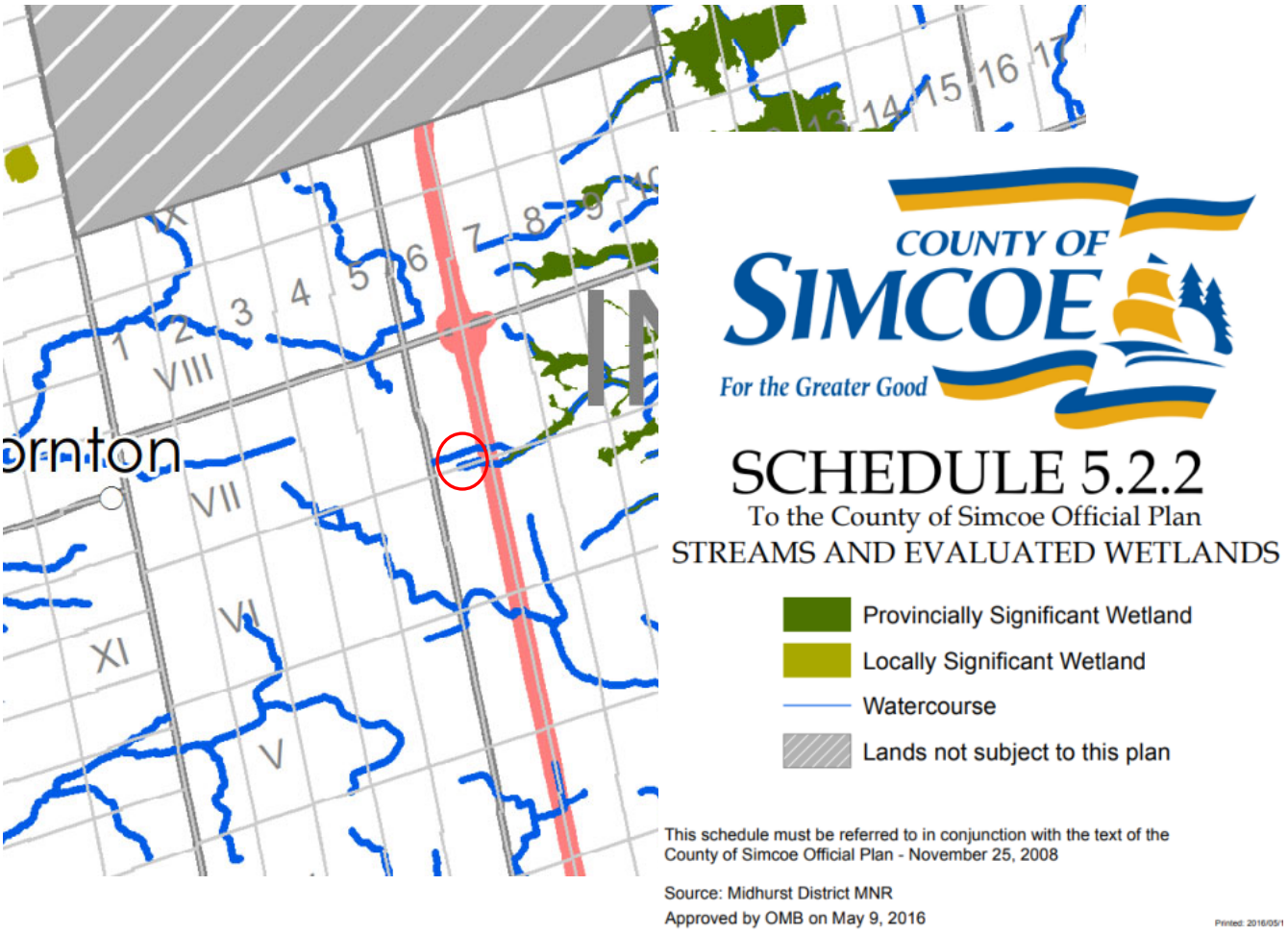
Appendix A: Natural Heritage Policy Information
Appendix B: LSRCA Information
Appendix C: Photographic Record
Appendix D: Background Information

APPENDIX A

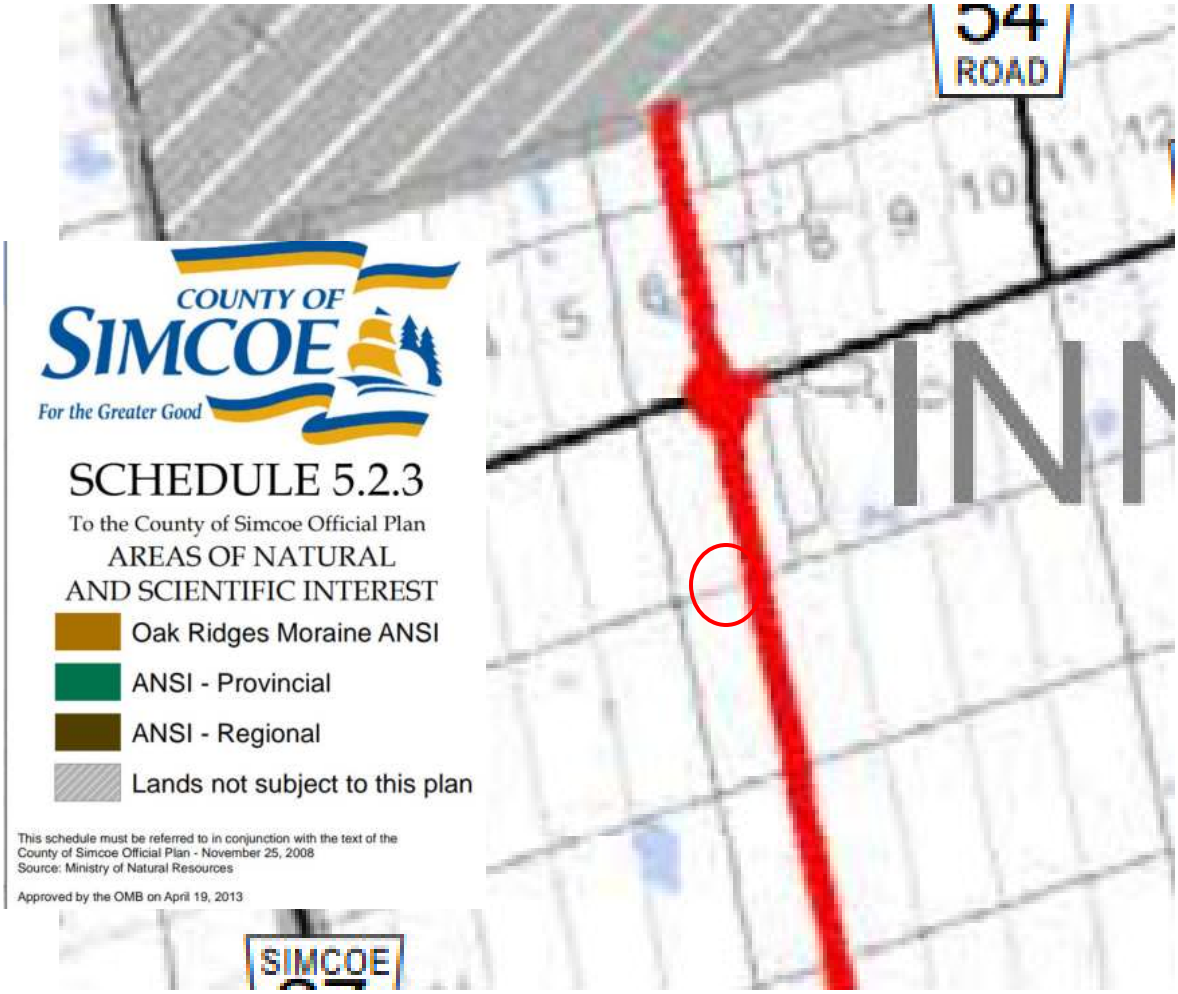
Natural Heritage Policy Information



Appendix A: Excerpt from the County of Simcoe Official Plan Schedule 5.1



Appendix A: Excerpt from the County of Simcoe Official Plan Schedule 5.2.2 (Streams and Evaluated Wetlands) (Note: Study Area contained within red circle drawn on map).



Appendix A: Excerpt from the County of Simcoe Official Plan Schedule 5.2.3 (Areas of Natural and Scientific Interest) (Note: Study area contained within red circle drawin on map)

Schedule B6 Land Use: Innisfil Heights
Innisfil Official Plan

The hazard lands shown on this map are approximate. For an accurate source of mapping please contact the local conservation authority.

N

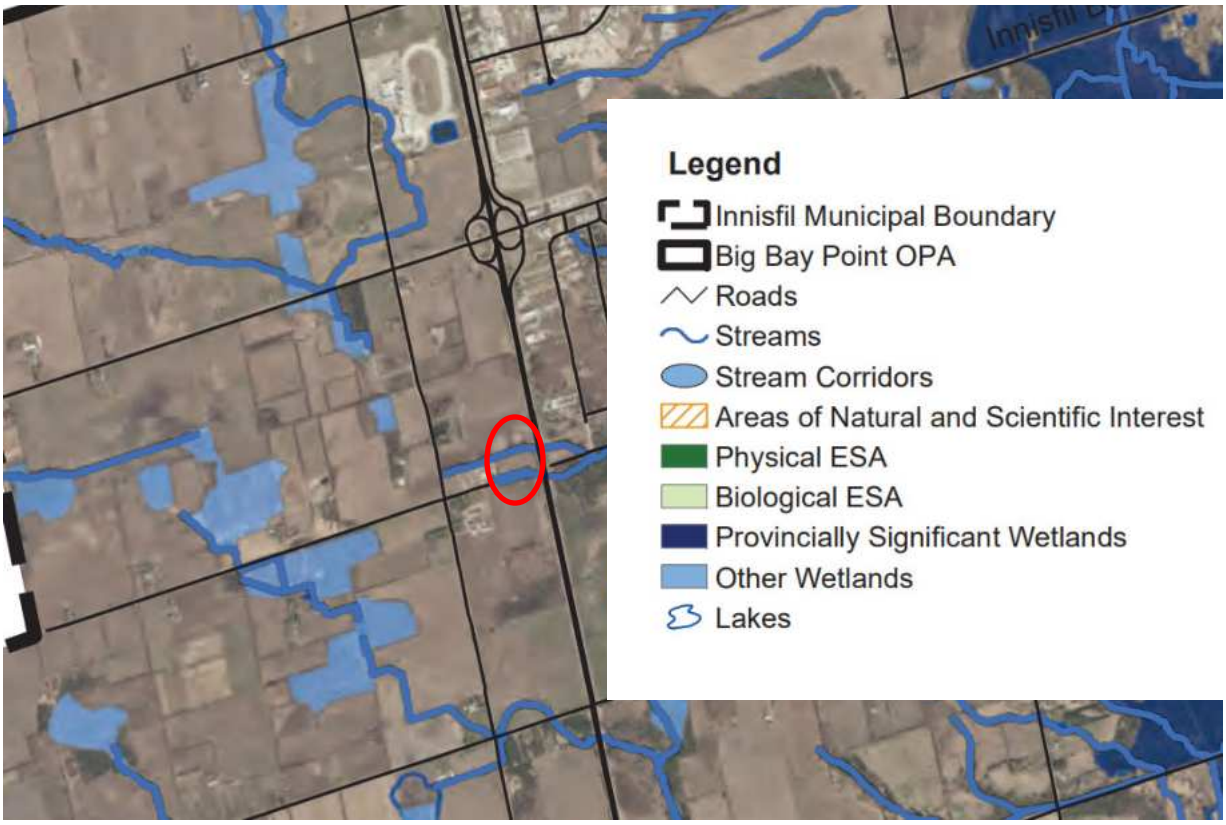
9th Line
LSPP
Doral Dr.
Bowman St.
Clifford Ct.
Thomas St.
Industrial Park Rd.
5 Sideroad
Highway 400 N.
Innisfil Beach Rd.
Commerce Gate
Commerce Park Dr.
Forest Valley Dr.
7th Line

Legend

- Employment Area
- Employment Area Supportive Commercial Area Overlay
- Mixed Commercial / Employment Area
- Tourism / Commercial Area
- Community Spaces
- Key Natural Heritage Features & Key Hydrologic Features
- Hazard Land Overlay
- Primary Visual Impact Area Overlay
- Enhanced Streetscape Area Overlay
- Innisfil Heights Gateway
- Primary Gateway
- Secondary Gateway
- Lake Simcoe Protection Plan Boundary
- Secondary Plan Boundary
- Municipal Boundary
- Provincial Highway
- County of Simcoe Arterial Road (36 – 40 m)
- Local Road (min. 20 m)
- Proposed Local Road
- Potential Future Road Connection
- Rail Line
- Rail Corridor Protection Area

0 100 200 300 400 500 Metres

Modified
July 2018



Appendix A: Excerpt from the Town of Innisfil's Official Plan Appendix 9: Natural Areas (Note: Property contained within red circle drawn on map).



Appendix A: Excerpt from the Town of Innisfil Official Plan Appendix 10: Natural Areas (Note: Study area contained within red circle drawn on map).

APPENDIX B

LSRCA Information

Lake Simcoe Region conservation authority



Features

- LSRCA Watershed Boundary
- V_MASK_WATERSHED_1
- Watercourse
- Regulation Limit
- Address Labels
- Road Labels
- LSRCA Watershed Boundary
- Assessment Parcel
- Roads
  - Hwy 400 Series
  - Highway, Arterials
  - Local Road
- Railway

Printed On:
11/15/2024

WGS_1984_Web_Mercator_Auxiliary_Sphere

Mapped By:

This product was produced by the Lake Simcoe Region Conservation Authority and some information depicted on this map may have been compiled from various sources. While every effort has been made to accurately depict the information, data/mapping errors may exist. This map has been produced for illustrative purposes from an interactive web mapping site. LSRCA GIS Services DRAFT printed 2024. © LAKE SIMCOE REGION CONSERVATION AUTHORITY, 2024. All Rights Reserved. The following data sets of Assessment Parcel, Roads, Upper & Lower Tier Municipalities, Wetlands are © Kings Printer for Ontario. Reproduced with Permission, 2024. The Current Regulation Limit and Boundary data sets are derived products from several datasets. Orthophotography 2002, 2005, 2007-2009, 2011-2023, © First Base Solutions, Inc.

Scale 1: 7,041

Meters

358 0 179 358

Lisa Moran

From: Lori McLean <L.McLean@lsrca.on.ca>
Sent: September 11, 2024 12:06 PM
To: Lisa Moran
Cc: Wendy Smeh; Shawn Filson
Subject: Re: Innisfil Heights Sanitary Pumping Station 2 - Terms of Reference for EIS

Hi Lisa,

Thank you for meeting this week to discuss the proposed location for the Innisfil Heights Sanitary Pumping Station 2.

I have reviewed the scoped Terms of Reference for the EIS and have included some additional notes below in red.

Please note that there are still outstanding NH comments for the Ecological Offsetting Strategy for 7131 5th Sideroad, Town of Innisfil (Cambium Inc, dated November 2023) for the proposed wetland removals (SWM Pond location) and therefore offsetting has not been finalized for the site. It also appears the pumping station location may encroach into the proposed enhanced planting area. This will all need to be reviewed and finalized.

Thanks again and please let me know if you have any questions,

Lori

Lori McLean, Hon. B.Sc.
Natural Heritage Ecologist
Lake Simcoe Region Conservation Authority
120 Bayview Parkway,
Newmarket, Ontario L3Y 3W3
905-895-1281, ext. 272 | 1-800-465-0437 | Mobile: 905-716-3821
l.mclean@LSRCA.on.ca | www.LSRCA.on.ca

Twitter: @LSRCA
Facebook: LakeSimcoeConservation

The information in this message (including attachments) is directed in confidence solely to the person(s) named above and may not be otherwise distributed, copied or disclosed. The message may contain information that is privileged, confidential and exempt from disclosure under the Municipal Freedom of Information and Protection of Privacy Act and by the Personal Information Protection Electronic Documents Act. If you have received this message in error, please notify the sender immediately and delete the message without making a copy. Thank you.

From: Lisa Moran <Lisa@Azimuthenvironmental.Com>
Sent: Friday, August 16, 2024 2:20 PM
To: Shawn Filson <S.Filson@lsrca.on.ca>
Cc: jdegroote@innservices.co; Wendy Smeh <wendy.smeh@ainleygroup.com>
Subject: Innisfil Heights Sanitary Pumping Station 2 - Terms of Reference for EIS

CAUTION: This email originated outside of LSRCA. DO NOT click links or open attachments unless you recognize the sender and trusted content. If in doubt, contact the IT Helpdesk at ITHelpdesk@lsrca.on.ca

Good afternoon Shawn,

It is our understanding that the location being explored for the IH Sanitary Pumping Station 2 (SPS2) is at the eastern most end of 7th Line within the Stormwater (SWM) Block associated with a proposed development for

7131 5th Sideroad, Town of Innisfil. It is our understanding that an Environmental Impact Study (EIS) is required to assess the suitability of the proposed location. For the purposes of this EIS, the study area would be limited to a detailed assessment within the proposed building footprint with a general assessment (i.e. air photo interpretation, background information) for the lands within 120m.

There are two regulated watercourses on either side of the SWM pond in proximity to the proposed location of the pumping station. Wetlands are also present in proximity to the SWM pond. Previous studies (Cambium, 2022) indicate that the watercourse along the road is ephemeral and would not meet the definition of watercourse (i.e. ditch). Furthermore, it is our understanding that the proposed location is not within LSRCA hazardland/floodplain and the wetland is already being removed as part of the proposed development (i.e. SWM pond) therefore LSRCA is not concerned about wetland preservation at this location and could be supportive of the location as shown on the site plan (Based on a meeting held with LSRCA on October 12, 2023).

Based on this information, we proposed the following scope of work as part of the EIS:

- Review available background information, including but not limited to existing provincial and municipal mapping/natural heritage resources in addition to Cambium Inc's EIS for 7131 5th Sideroad, Town of Innisfil;
- Complete two (2) dawn breeding bird surveys (Note: A third dawn breeding bird survey may be required depending on the results of the initial two);
- Complete 1 (one) in-season vegetation survey including a search for Species at Risk plants such as Butternut and Black Ash;
- Complete 1 (one) aquatic habitat assessment; (The aquatic habitat assessment for all drainage features/watercourses in the study area, should include characterization of hydrologic features (i.e. permanent, intermittent, ephemeral, headwater drainage feature) and suitability as fish habitat. Include a description of instream and riparian cover, bank stability, substrate composition, stream morphology, dimensions and gradient, thermal regime indicators, potential barriers, woody debris distribution, aquatic vegetation, groundwater seepage areas, etc.)
- Provide a general description of the methodology, dates, timing, and locations of completed field surveys.
- Provide a detailed description of the proposed development.
- Demonstrate how the proposed development is in conformity with all federal, provincial, regional, and municipal natural heritage policies applicable in the Lake Simcoe watershed.

Upon completion of the recommended field investigations and receipt of the preferred option and design, an EIS will be prepared to assess potential impacts associated with IH SPS2. The EIS report will identify potential impacts, recommend mitigation measures, compensation and confirm permitting/agency requirements.

It is our understanding that preliminarily, the LSRCA has no objection about the proposed location for the SPS. At this time, we request that you confirm the suitability of the assessment.

At this time, we request confirmation from the LSRCA that the proposed scope of work for the EIS is suitable. We would also request any available information that LSRCA may have that would be of assistance in our study.

Regards,

Lisa Moran, B.Sc.Env.
Terrestrial Ecologist
Azimuth Environmental Consulting, Inc.

642 Welham Road Barrie, ON L4N 9A1
Office: 705-721-8451 x202
Cell: 705-331-1479
www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology, environmental engineering, and arborist assessments

APPENDIX C

Photographic Record



Photograph 1: Chimney Crayfish burrow located on the east side of IHL Canada, on the north side of the unofficial road allowance driveway to the property.



Photograph 2: Terrestrial crayfish burrow in sediments on the north side of the fill pile at the driveway to the property from the 7th Line road allowance.



Photograph 3: Northern unnamed Tributary looking downstream (east) from a farm access crossing on the east side of IHL Canada.



Photograph 4: The unnamed north tributary looking downstream (east) towards Highway 400.



Photograph 5: Pond on the south side of the 7th Line road allowance, looking east towards the pond outlet to the south side roadside ditch.



Photograph 6: Drainage in the tributary on the south side of the 7th Line road allowance, with abundant Jewelweed.



Photograph 7: Drainage in the tributary on the south side of the 7th Line road allowance, with abundant Watercress present.



Photograph 8: Tributary on the south side of the 7th Line road allowance, looking downstream (east) towards Highway 400.



Photograph 9: Ephemeral drainage on the north side of the 7th Line road allowance, looking west towards IHL Canada.



Photograph 10: Dry ditch bottom in the ephemeral drainage ditch on the north side of the 7th Line road allowance.

APPENDIX D

Background Information

Ontario

Ministry of Natural Resources

Make-a-Map: Natural Heritage Areas

IHSPS2, Town of Innisfil

Map created:11/15/2024



Notes:

Provincially mapped natural heritage features

Legend

- Assessment Parcel
- NHIC 1 Km Grid
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Woodland
- Conservation Reserve
- Provincial Park

0.1 0 0.04 0.1 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources(OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

© Copyright for Ontario Parcel data is held by King's Printer for Ontario and its licensors and may not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY.

Imagery Copyright Notices: DRAPE © Aéro-Photo (1961) Inc., 2008 - 2009
GTA 2005 / SWOOP 2006 / Simcoe-Muskoka-Dufferin © FirstBase Solutions, 2005 / 2006 / 2008
© King's Printer for Ontario, 2024



Appendix E

Stage 1 Archaeological Report

Stage 1 Archaeological Assessment Sewage Pumping Station #2 (Lot 5 and Lot 6, in Concession 6 and Concession 7, Former Township of Innisfil, County of Simcoe) Town of Innisfil, Simcoe County

Original Report

Prepared for:

Ainley Group

280 Pretty River Parkway

Collingwood, ON L9Y 4J5

Archaeological Licence: P383 (Williams)

PIF P383-0306-2021

Archaeological Services Inc. File: 21EA-087

29 March 2022



Executive Summary

Archaeological Services Inc. was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Sewage Pumping Station Municipal Class Environmental Assessment project. The Environmental Assessment is part of the Innisfil Master Servicing Plan update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The Master Servicing Plan identified 5th Sideroad as a proposed location for Sewage Pumping Station #2. The Stage 1 Study Area is south of Innisfil Beach Road on the east and west side of 5th Sideroad.

Background research indicates that one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres. The property inspection determined that the Study Area exhibits archaeological potential and will require Stage 2 assessment.

In light of these results, the following recommendations are made:

1 Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit/pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands;

2 The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or being previously assessed. These lands do not require further archaeological assessment; and,

3 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.

ASI

Project Personnel

- **Senior Project Manager**: Lisa Merritt, MSc. (P094) Partner, Director, Environmental Assessment Division
- **Division Coordinator**: Katrina Thach, Hon. BA (R1225), Associate Archaeologist, Division Coordinator, Environmental Assessment Division
- **Project Administrator**: Catherine Kitchen, BA, Archaeologist, Project Administrator, Environmental Assessment Division
- **Project Director**: Blake Williams, MLitt (P383), Lead Archaeologist, Project Manager, Environmental Assessment Division
- **Project Manager**: Eliza Brandy, MA (R1109), Associate Archaeologist, Project Manager, Environmental Assessment Division
- **Field Director**: Blake Williams
- **Report Preparation**: Laura Burke, Hons BA (R1113), Associate Archaeologist, Technical Writer and Researcher, Environmental Assessment Division
- **Graphics**: Peter Bikoulis, PhD, Archaeologist, GIS Technician, Operations Division
- **Report Reviewer**: Eliza Brandy; Jessica Lytle, MSc (P1066), Lead Archaeologist, Technical Writer and Fieldwork Coordinator, Environmental Assessment Division

Table of Contents

Executive Summary 1
Project Personnel 2
1.0 Project Context 6
1.1 Development Context 6
1.1.1 Treaties and Traditional Territories 7
1.2 Historical Context 7
1.2.1 Indigenous Land Use and Settlement 7
1.2.2 Post-Contact Settlement 9
1.2.3 Map Review 11
1.2.4 Aerial and Orthoimagery Review 12
1.3 Archaeological Context 12
1.3.1 Current Land Use and Field Conditions 12
1.3.2 Geography 12
1.3.3 Previously Registered Archaeological Sites 15
1.3.4 Previous Archaeological Assessments 15
2.0 Field Methods 17
3.0 Analysis and Conclusions 18
3.1 Analysis of Archaeological Potential 18
3.2 Conclusions 19
4.0 Recommendations 20
5.0 Legislation Compliance Advice 21
6.0 Bibliography and Sources 23
7.0 Images 27
7.1 Field Photography 27
8.0 Maps 36

List of Tables

Table 1: Registered Sites within One Kilometre of the Study Area 15

List of Images

Image 1: Residential lawn; test pit survey required. 27
Image 2: Right of way; disturbed, no archaeological potential. 27
Image 3: Right of way; disturbed, no archaeological potential. 28
Image 4: Right of way; disturbed, no archaeological potential. 28
Image 5: Right of way; disturbed, no archaeological potential. 29
Image 6: Right of way; disturbed, no archaeological potential. 29
Image 7: Agricultural field; pedestrian survey required. 30
Image 8: Lands surrounding disturbed paved driveway require Stage 2 survey. 30
Image 9: Areas beyond disturbed right-of-way require pedestrian survey. 31
Image 10: Right-of-way; disturbed, no archaeological potential. 31
Image 11: Agricultural field and hydro lines; Stage 2 survey required. 32
Image 12: Lands beyond disturbed right-of-way require test pit survey. 32
Image 13: Lands beyond disturbed right-of-way require pedestrian survey. 33
Image 14: Farmstead; test pit survey required. 33
Image 15: Lands beyond disturbed right-of-way and buried utilities require test pit survey. 34
Image 16: Agricultural field; pedestrian survey required. 34
Image 17: Treeline and agricultural field; Stage 2 survey required. 35

List of Figures

Figure 1: Sewage Pumping Station #2 Study Area 36
Figure 2: The Study Area overlaid on the 1871 Hoggs Map of the County of Simcoe (Base Map:(Hogg, 1871). 37
Figure 3: The Study Area overlaid on the 1881 Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881). 38
Figure 4: The Study Area overlaid on the 1928 topographic map of Barrie (Department of National Defence, 1928). 39
Figure 5: The Study Area overlaid on the 1986 topographic map of Barrie (Department of Energy, Mines and Resources, 1986). 40

Figure 6: The Study Area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954). 41
Figure 7: Study Area – Surficial Geology 42
Figure 8: Study Area - Soil Drainage 43
Figure 9: Archaeological Existing Conditions (from the County of Simcoe Archaeological Management Plan (ASI, 2019). 44
Figure 10: Stage 1 Results for Sewage Pumping Station #2 Sheet 1 45
Figure 11: Stage 1 Results for Sewage Pumping Station #2 Sheet 2 46

1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by Ainley Group, on behalf of the Town of Innisfil, to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Sewage Pumping Station Municipal Class Environmental Assessment project. The Environmental Assessment is part of the Innisfil Master Servicing Plan update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The Master Servicing Plan identified 5th Sideroad as a proposed location for Sewage Pumping Station #2. The Stage 1 Study Area is south of Innisfil Beach Road on the east and west side of 5th Sideroad (Figure 1).

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (Ontario Heritage Act, R.S.O. c. O.18, 1990, as amended in 2019) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI 2011).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act, RSO* (Environmental Assessment Act, R.S.O., 1990 as amended 2020) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (Municipal Class Environmental Assessment, 2000, as amended 2015).

The *County of Simcoe Archaeological Management Plan* (ASI, 2019) was also consulted.

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment and property inspection was granted by Ainley Group on September 2, 2021.

1.1.1 Treaties and Traditional Territories

The Nottawasaga Purchase (Treaty 18)

The Study Area is within the Nottawasaga Purchase (Treaty 18), a provisional agreement sometimes called the Lake Simcoe-Nottawasaga Treaty, signed on October 17, 1818, by representatives of the Government of Upper Canada and the Anishinaabe (Ministry of Indigenous Affairs, 2020; Williams Treaties First Nations, 2021). Treaty 18 encompassed 1,592,000 acres of land between the District of London in the west, Lake Huron in the north, the west limit of the Penetanguishene Purchase (1815) in the east, and the west shore of Lake Simcoe, Cook's Bay, and the Holland River in the northwest. In exchange for the land, the Crown agreed to pay an annual sum of £1200 in goods at the "Montreal price" (Crown-Indigenous Relations and Northern Affairs, 2016; Ministry of Indigenous Affairs, 2020). The Nottawasaga Purchase territory includes the present-day communities of Wasaga, Bradford, and Collingwood.

1.2 Historical Context

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (B.P.) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (Ellis & Deller, 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive

exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 B.P. - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al., 2021). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

By 1600 C.E., the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to the dispersal of the Huron-Wendat. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

1.2.2 Post-Contact Settlement

Historically, the Study Area is located in the Township of Innisfil, County of Simcoe in parts of Lot 5 and 6, in Concessions 6 and 7.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the Ontario Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading

posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Township of Innisfil

The Township of Innisfil was surveyed in 1820 and the first settlement began that year. The township was named after the poetical name for Ireland, Innisfail, by its early settlers. Growth was slow during the first ten years of the township and the first sawmill was not erected until the 1830s and in 1835 a grist mill was constructed. Early settlement focused around Kempenfeldt Bay, and the southwestern area of the township was not settled until after 1840. By 1843, the first school was constructed and the following year the Innisfil Methodist Congregation built the first church. The first census of the township recorded a population of only 762 inhabitants, by 1850, the township had a population of 1,807.

Following the connection of the Northern Railway in 1853, the township became an important shipping hub for the lumber industry of central Ontario (Mika & Mika, 1981). With the arrival of the railway a number of communities developed and prospered, Allandale, Lefroy, and Craigvale all boasted stations. On the western border of the township, Thorton was a stop for the Hamilton and Northwestern Railway. The community of St. Paul's was established at the corner of Penetanguishene Road (Yonge Street) and Mapleview Drive, and was centered around St. Paul's Anglican Church (established 1851) and a schoolhouse as depicted on the 1879 Illustrated Historical Atlas (Belden, 1881). The small community consisted of a cluster of houses and would have been along the main path of anyone travelling between Toronto and Georgian Bay along Penetanguishene Road. Other early post office communities included Bramley, Cherry Creek, Fennell, Holly, Innisfil, Killyleagh, Beaumont, Painswick, and Stroud. Today, Innisfil attracts large numbers of tourists and cottagers in the summertime who travel from Toronto via Highway 400 and Highway 11, the northern extension of Yonge Street. This extension travels the length of the township and

was built in the late seventeenth century by Colonel John Graves Simcoe from York (Toronto) to Lake Simcoe (Mika & Mika, 1981).

Hamilton and North Western Railway

The Hamilton and North Western Railway was formed in 1872. Construction began in 1877 and by late that year had reached Barrie and by mid-1879, Collingwood. Due to economic recession and railway politics, the Hamilton and North Western Railway merged with the Northern Railway of Canada to form the Northern & Northwestern Railway. The Northern & Northwestern Railway was acquired by the Grand Trunk Railway in 1888 and was in operation until 1990 (Cooper 2001).

Killyleagh

The small crossroads community of Killyleagh had a log schoolhouse constructed in the 1850s as well as a post office. It was first settled in 1853 by the Grey, Sharpe, and Scroggie families who arrived in Canada from the County of Sligo in Ireland (InnisfilToday, 2022).

1.2.3 Map Review

The 1871 *Map of the County of Simcoe* (Hogg, 1871) and the 1881 *Illustrated Historical Atlas of the County of Simcoe* (Belden, 1881) were examined to determine the presence of historical features within the Study Area during the nineteenth century (Figure 2 and Figure 3). Both the 1871 and the 1881 maps have no specific historical structures listed or drawn within the rural agricultural Study Area. Both 5th Side Road and 7th Line are identified as early historic transportation routes.

1928 and 1986 topographic maps of Barrie (Figure 4 and Figure 5) were also examined to determine the presence of historical features within the Study Area (Department of Energy, Mines and Resources, 1986; Department of National Defence, 1928). Both maps show scattered farmsteads throughout the Study Area. One difference between the 1928 and 1986 maps is visible on 7th Line Road. On the 1928 map 7th Line extends across 5th Side Road and continues across the lot and concession. On the 1986 map 7th Line stops on the westside of 5th Side

Road. The 1986 topographic map also shows that Highway 400 was built parallel to 5th Side Road, east of the Study Area.

1.2.4 Aerial and Orthoimagery Review

Aerial photography from 1954 (Figure 6) indicates a continued rural agricultural land use within the Study Area (Hunting Survey Corporation Limited, 1954). A review of available Google satellite imagery from 2004-2021 shows that there were no significant land alterations within the Study Area during this time frame.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MHSTCI through "Ontario's Past Portal"; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

The Study Area runs parallel to Highway 400. 5th Side Road cuts through the middle of the Study Area in a north-south direction. 7th Line now extends again across the Study Area in an east-west direction. On the east and west side of 5th Side Road throughout the Study Area there continues to be large active agricultural farms and scattered twentieth century farmsteads.

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs,

marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow & Warner, 1990, p. Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is situated within the Peterborough Drumlin Field physiographic region of southern Ontario (Chapman & Putnam, 1984). The Peterborough Drumlin Field extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock and contains over 3,000 drumlins (Chapman & Putnam, 1984). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier. Till is produced from the advance of continental glacial ice in which soil and rock is carried forward by the ice, mixed and milled,

producing a heterogeneous soil (Chapman & Putnam, 1984). The rolling topography of the Study Area is representative of the drumlin and till formations of this physiographic region. The agricultural history of the area can be connected to the till plains formed through glacial movement.

The surficial geology of the Study Area consists of stone poor, carbonate derived silty to sandy till with smaller patches of foreshore basinal deposits and ice contact stratified deposits (Figure 7).

Soil types within the Study Area consist of Bondhead, a light grey, calcareous and non-calcareous sandy loam; Dundonald, outwash sand underlain by grey calcareous loam or sandy loam; and a small patch of Sargent, a gravelly sandy loam. These soil types all have good drainage (Figure 8).

The northern part of the Study Area includes a small tributary stream of the Nottawasaga River. This watershed is approximately 3,700 kilometres squared, with jurisdiction in 18 municipalities and is the source of watercourses that flow into Georgian Bay at Wasaga Beach, Collingwood and Severn Sound. It includes 35 kilometres of Georgian Bay shoreline along the Wasaga Beach and Collingwood waterfront. The watershed is shaped like a bowl – the Niagara Escarpment (west), Oak Ridges Moraine (south) and Simcoe Uplands/Oro Moraine (north and east) represent the height of land along the edges of the bowl. Streams arise from these high areas and flow down slope into the Simcoe Lowlands (the bottom of ancient Lake Algonquin), which forms the bottom of the bowl. These lowlands extend to Wasaga Beach and Collingwood (a “chip” at the edge of the bowl) which allows the Nottawasaga River and Blue Mountain streams to reach Georgian Bay (Nottawasaga Valley Conservation Authority, 2013).

The southern part of the Study Area is within the Lovers Creek subwatershed. The Lovers Creek subwatershed is 59.9 kilometres squared in area and comprises 2.3 percent of the Lake Simcoe watershed. Lovers Creek is the only named stream within the Lovers Creek subwatershed. It begins in the southern part of the subwatershed, where the headwater portions are channelized, and flows north towards Lake Simcoe. The majority of the subwatershed is within the Town of Innisfil (Lake Simcoe Region Conservation Authority, 2012).

1.3.3 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MHSTCI. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *BbGw.*

According to the OASD, one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres (MHTSCI 2021). A summary of the site is provided below in Table 1.

Table 1: Registered Sites within One Kilometre of the Study Area

Borden Number	Site Name	Temporal/ Cultural Affiliation	Site type	Researcher
BbGw-93	Lost Copper	Pre-Contact Indigenous	Isolated findspot	Irvin, Thomas 2021

1.3.4 Previous Archaeological Assessments

According to the background research, four previous reports detail fieldwork within 50 metres of the Study Area:

(A. M. Archaeological Associates, 2014) Stage 1 and 2 Archaeological Assessment for the Pearson Property for the Proposed Cookstown Service Centre Including the Water Service Route (Lot 6, Concession 4 to 6), Geographic Township of Innisfil, Simcoe County [P035-0207-2013]

The previous report overlaps with the current Study Area at the 7th Line and 5th Side Road intersection along the eastern portion of 7th Line and to the south,

along 5th Side Road. It was determined that no further archaeological assessment was required.

(Archeoworks Inc., 2007b) Stage 1 Archaeological Assessment, Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County [P029-399-2007]

The previous report overlaps with the current Study Area in the northeast section, south of Innisfil Beach Road. Stage 2 archaeological assessment was recommended for all undisturbed lands.

(Archeoworks Inc., 2007a) Stage 2 Archaeological Assessment, Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County [P029-407-2007]

The previous report overlaps with the current Study Area in the northeast section, south of Innisfil Beach Road. The Stage 2 archaeological assessment included a test-pit survey of approximately 1.4 hectares of the subject property and a pedestrian survey of approximately 32 hectares of cultivated fields. Both assessments were conducted at five metre intervals and no archaeological materials were encountered. The area is considered free from further archaeological concern.

(Irving Heritage Inc., 2021) Stages 1-3 Archaeological Assessment (Lot 6, Concession 7) Geographic Township of Innisfil, Simcoe County [P379-0382-2021]

This report is currently awaiting MHSTCI review.

The project area overlaps with the current Study Area east of 5th Sideroad and north of 7th Line. Test pit survey and pedestrian survey were conducted at five metre intervals. One isolated findspot was observed as well as the Lost Copper Site (BbGw-93); an isolated Indigenous findspot. The site is not within 50 metres of the current Study Area. The BbGw-93 Site Update Form indicates that test unit excavation was conducted on May 31, 2021 (MHSTCI 2022). Irving Heritage Inc. concluded that no further archaeological assessment was required. The area may be considered clear of archaeological concern once this report is accepted into the MHSTCI provincial register.

2.0 Field Methods

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Blake Williams (P383) of ASI, on November 12th, 2021, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a systematic visual inspection from public right-of-ways only and did not include excavation or collection of archaeological resources. Fieldwork was conducted when weather conditions were deemed clear with good visibility (overcast with seasonal temperatures), per S & G Section 1.2., Standard 2. Field observations are compiled onto the existing conditions of the Study Area in Section 8.0 (Figures 9-11) and associated photographic plates are presented in Section 7.0 (Images 1-17).

3.0 Analysis and Conclusions

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. Results of the analysis of the Study Area property inspection and background research are presented in Section 3.1.

3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (See Table 1);
- Early historic transportation routes (5th Sideroad, 7th Line, Innisfil Beach Sideroad);
- Water sources: primary, secondary, or past water source (Nottawasaga River and Lover's Creek tributaries); and
- Well-drained soils (Bondhead, Dundonald, Sargent)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Town of Innisfil Municipal Heritage Register was consulted and showed that no properties within the Study Area are Listed or Designated under the Ontario Heritage Act.

The *County of Simcoe Archaeological Management Plan* (ASI, 2019) was also consulted and the whole Study Area is identified as having archaeological potential.

These criteria are indicative of potential for the identification of archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

The property inspection determined that parts of the Study Area exhibit archaeological potential. These areas will require Stage 2 archaeological assessment prior to any construction activities. According to the S & G Section

2.1.1, pedestrian survey is required in actively or recently cultivated fields (Images 7, 11, 13, 16, 17; Figures 10-11: areas highlighted in orange). According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide (Images 1, 8, 10, 12, 14, 15, 17; Figures 10-11: areas highlighted in green).

Part of the Study Area has been previously assessed and does not require further archaeological assessments (Figures 10-11: areas highlighted in red).

The remainder of the Study Area has been subjected to deep soil disturbance events due to construction of the road right-of-ways including utilities and other road infrastructure. According to the S & G Section 1.3.2 these areas do not retain archaeological potential (Images 2, 3, 4, 5, 6, 8, 9, 10, 15; Figures 10-11: areas highlighted in yellow) and do not require further survey.

3.2 Conclusions

Background research indicates that one previously registered archaeological site is located within one kilometre of the Study Area and is not within 50 metres. The property inspection determined that the Study Area exhibits archaeological potential and will require Stage 2 assessment (Figure 10-11).

4.0 Recommendations

In light of these results, the following recommendations are made:

1 Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit/pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands;

2 The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or being previously assessed. These lands do not require further archaeological assessment; and,

3 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.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Archaeology Programs Unit of the Ministry of Heritage, Sport, Tourism and Culture Industries should be immediately notified.

The above recommendations are subject to Ministry approval, and it is an offence to alter any archaeological site without Ministry of Heritage, Sport, Tourism and Culture Industries concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of MHSTCI approval has been received.

5.0 Legislation Compliance Advice

ASI advises compliance with the following legislation:

- This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, RSO 2005, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the

Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.

6.0 Bibliography and Sources

A. M. Archaeological Associates. (2014). Stage 1 and 2 Archaeological Assessment for the Pearson Property for the Proposed Cookstown Service Centre Including the Water Service Route (Lot 6, Concession 4 to 6), Geographic Township of Innisfil, Simcoe County.

Archeoworks Inc. (2007a). Stage 2 Archaeological Assessment, Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County, Ontario [P029-407-2007] (No. 123-8172–07). Report on file with the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

Archeoworks Inc. (2007b). Stage 1 Archaeological Assessment, Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County, Ontario (No. P029-399–2007).

ASI, (Archaeological Services Inc.). (2006). Historical Overview and Assessment of Archaeological Potential Don River Watershed, City of Toronto. Report on file with the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

ASI, (Archaeological Services Inc.). (2019). County of Simcoe Archaeological Management Plan. Report on file with the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries.

Belden, H. (1881). Illustrated Historical Atlas of the County of Simcoe [Map]. H. Belden & Co.

Birch, J., Manning, S. W., Sanft, S., & Conger, M. A. (2021). Refined Radiocarbon Chronologies for Northern Iroquoian Site Sequences: Implications for Coalescence, Conflict, and the Reception of European Goods. American Antiquity, 86(1), 61–89.

Birch, J., & Williamson, R. F. (2013). The Mantle Site: An Archaeological History of an Ancestral Wendat Community. Rowman & Littlefield Publishers, Inc.

Brown, J. (1995). On Mortuary Analysis – with Special Reference to the Saxe-Binford Research Program. In L. A. Beck (Ed.), Regional Approaches to Mortuary Analysis (pp. 3–23). Plenum Press.

Chapman, L. J., & Putnam, F. (1984). The Physiography of Southern Ontario (Vol. 2). Ontario Ministry of Natural Resources.

Crown-Indigenous Relations and Northern Affairs. (2016). Lake Simcoe-Nottawasaga Treaty No. 18. Treaty Texts – Upper Canada Land Surrenders. https://www.rcaanc-cirnac.gc.ca/eng/1370372152585/1370372222012#ucls17

Department of Energy, Mines and Resources. (1986). Barrie Sheet 31D/5 [Map].

Department of National Defence. (1928). Barrie Sheet [Map].

Dodd, C. F., Poulton, D. R., Lennox, P. A., Smith, D. G., & Warrick, G. A. (1990). The Middle Ontario Iroquoian Stage. In C. J. Ellis & N. Ferris (Eds.), The Archaeology of Southern Ontario to A.D. 1650 (pp. 321–360). Ontario Archaeological Society Inc.

Edwards, T. W. D., & Fritz, P. (1988). Stable-Isotope Palaeoclimate Records from Southern Ontario, Canada: Comparison of Results from Marl and Wood. Canadian Journal of Earth Sciences, 25, 1397–1406.

Ellis, C. J., & Deller, D. B. (1990). Paleo-Indians. In C. J. Ellis & N. Ferris (Eds.), The Archaeology of Southern Ontario to A.D. 1650 (pp. 37–64). Ontario Archaeological Society Inc.

Ellis, C. J., Kenyon, I. T., & Spence, M. W. (1990). The Archaic. In C. J. Ellis & N. Ferris (Eds.), The Archaeology of Southern Ontario to A.D. 1650 (pp. 65–124). Ontario Archaeological Society Inc.

Ellis, C. J., Timmins, P. A., & Martelle, H. (2009). At the Crossroads and Periphery: The Archaic Archaeological Record of Southern Ontario. In T. D. Emerson, D. L. McElrath, & A. C. Fortier (Eds.), Archaic Societies: Diversity and Complexity across the Midcontinent. (pp. 787–837). State University of New York Press.

Ferris, N. (2013). Place, Space, and Dwelling in the Late Woodland. In M. K. Munson & S. M. Jamieson (Eds.), Before Ontario: The Archaeology of a Province (pp. 99–111). McGill-Queen's University Press. http://www.jstor.org/stable/j.ctt32b7n5.15

Hogg, J. (1871). Hogg's Map of the County of Simcoe [Map].

Hunting Survey Corporation Limited. (1954). Digital Aerial Photographs, Southern Ontario 1954. http://maps.library.utoronto.ca/data/on/AP_1954/index.html

InnisfilToday. (2022, February 22). Celebrating the former Killyleagh School. InnisfilToday. https://www.innisfiltoday.ca/columns/heritage-week-celebrating-the-former-killyleagh-school-5063167

Irving Heritage Inc. (2021). Irivin Heritage Inc. Stage 1-3 Archaeological Assessment (Lot 6, Concession 7) Geographic Township of Innisfil, Simcoe County [P379-0382-2021] [Site Update]. Ministry of Heritage, Sport, Tourism and Culture Industries.

Karrow, P. F., & Warner, B. G. (1990). The Geological and Biological Environment for Human Occupation in Southern Ontario. In The Archaeology of Ontario to A.D. 1650 (pp. 5–36). London Chapter, Ontario Archaeological Society.

Lake Simcoe Region Conservation Authority. (2012). Barrie Creeks, Lovers Creek, and Hewitt's Creek Subwatershed Plan. https://www.lsrca.on.ca/Shared%20Documents/Subwatershed-Plans/barrie_subwatershed_plan_2012.pdf

Ontario Heritage Act, R.S.O. c. O.18, (1990).

Mika, N., & Mika, H. (1981). Places In Ontario: Their Name Origins and History, Part II, F-M (Vol. 2). Mika Publishing Company.

Ministry of Heritage, Sport, Tourism and Culture Industries. (2021). Ontario's Past Portal. PastPortal. https://www.pastport.mtc.gov.on.ca

Ministry of Heritage, Sport, Tourism and Culture Industries. (2022). Ontario's Past Portal. PastPortal. https://www.pastport.mtc.gov.on.ca

Ministry of Indigenous Affairs. (2020). Map of Ontario Treaties and Reserves. Government of Ontario. https://www.ontario.ca/page/map-ontario-treaties-and-reserves#t16

Environmental Assessment Act, R.S.O., (1990).

Ministry of Tourism and Culture. (2011). Standards and Guidelines for Consultant Archaeologists. Cultural Programs Branch, Ontario Ministry of Tourism and Culture.

Municipal Class Environmental Assessment, (2000).

Nottawasaga Valley Conservation Authority. (2013). Nottawasaga Valley Watershed Health Check. https://www.nvca.on.ca/Shared%20Documents/2013%20NVCA%20WHC.pdf

Rogers, E. S. (1962). The Round Lake Ojibwa (Occasional Paper 5). Royal Ontario Museum.

Spence, M. W., Pihl, R. H., & Murphy, C. (1990). Cultural Complexes of the Early and Middle Woodland Periods. In C. J. Ellis & N. Ferris (Eds.), The Archaeology of Southern Ontario to A.D. 1650. Ontario Archaeological Society Inc.

Williams Treaties First Nations. (2021). Pre-Confederation Treaties [Chippewas and Mississaugas Williams Treaties First Nations]. https://williamstreatiesfirstnations.ca/pre-confederation-treaties/

Williamson, R. F. (1990). The Early Iroquoian Period of Southern Ontario. In C. J. Ellis & N. Ferris (Eds.), The Archaeology of Southern Ontario to A.D. 1650 (pp. 291–320). Ontario Archaeological Society Inc.

7.0 Images

7.1 Field Photography



Image 1: Residential lawn; test pit survey required.



Image 2: Right of way; disturbed, no archaeological potential.



Image 3: Right of way; disturbed, no archaeological potential.



Image 4: Right of way; disturbed, no archaeological potential.



Image 5: Right of way; disturbed, no archaeological potential.



Image 6: Right of way; disturbed, no archaeological potential.



Image 7: Agricultural field; pedestrian survey required.



Image 8: Lands surrounding disturbed paved driveway require Stage 2 survey.



Image 9: Areas beyond disturbed right-of-way require pedestrian survey.



Image 10: Right-of-way; disturbed, no archaeological potential.



Image 11: Agricultural field and hydro lines; Stage 2 survey required.



Image 12: Lands beyond disturbed right-of-way require test pit survey.



Image 13: Lands beyond disturbed right-of-way require pedestrian survey.



Image 14: Farmstead; test pit survey required.



Image 15: Lands beyond disturbed right-of-way and buried utilities require test pit survey.



Image 16: Agricultural field; pedestrian survey required.



Image 17: Treeline and agricultural field; Stage 2 survey required.

8.0 Maps

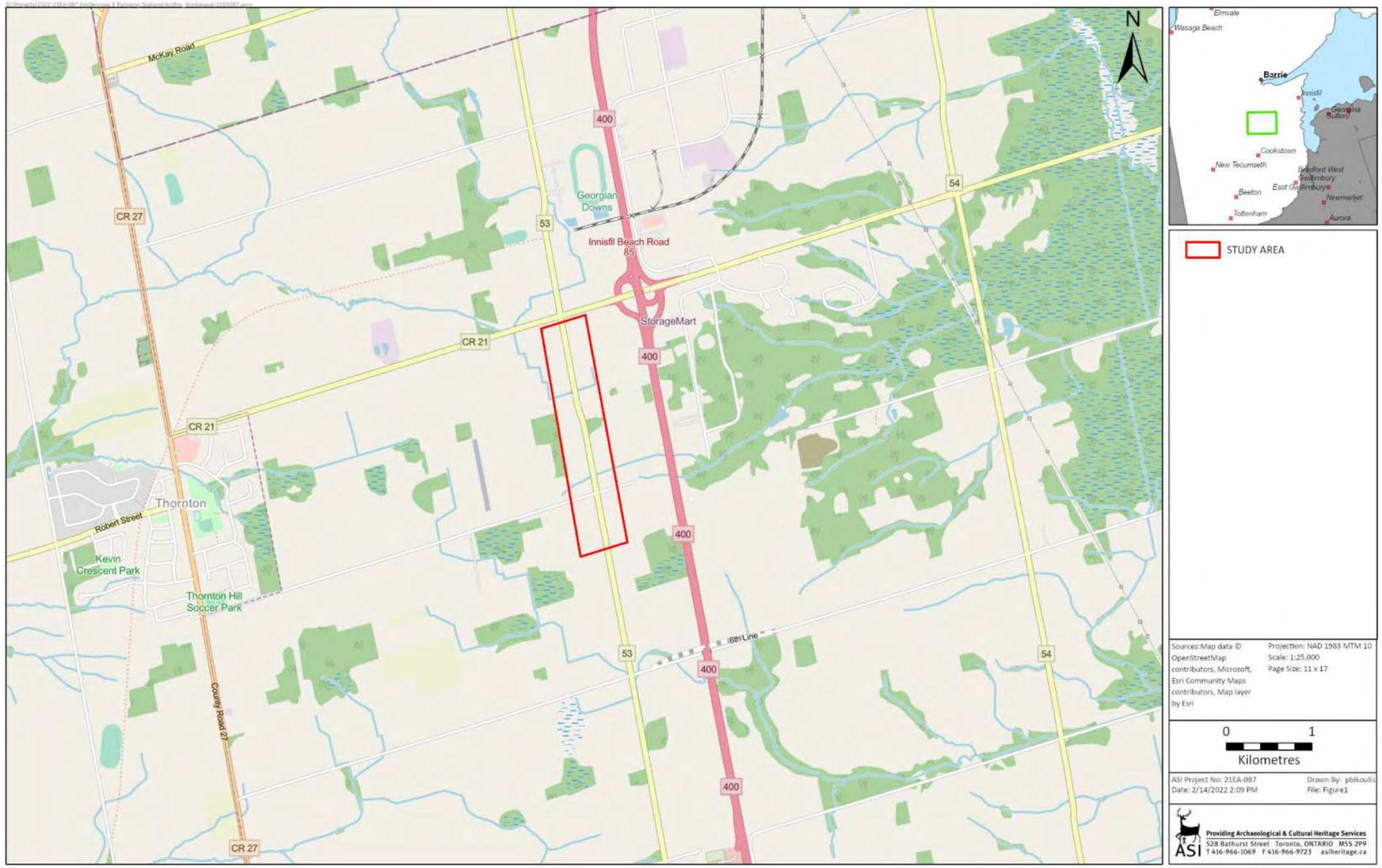


Figure 1: Sewage Pumping Station #2 Study Area

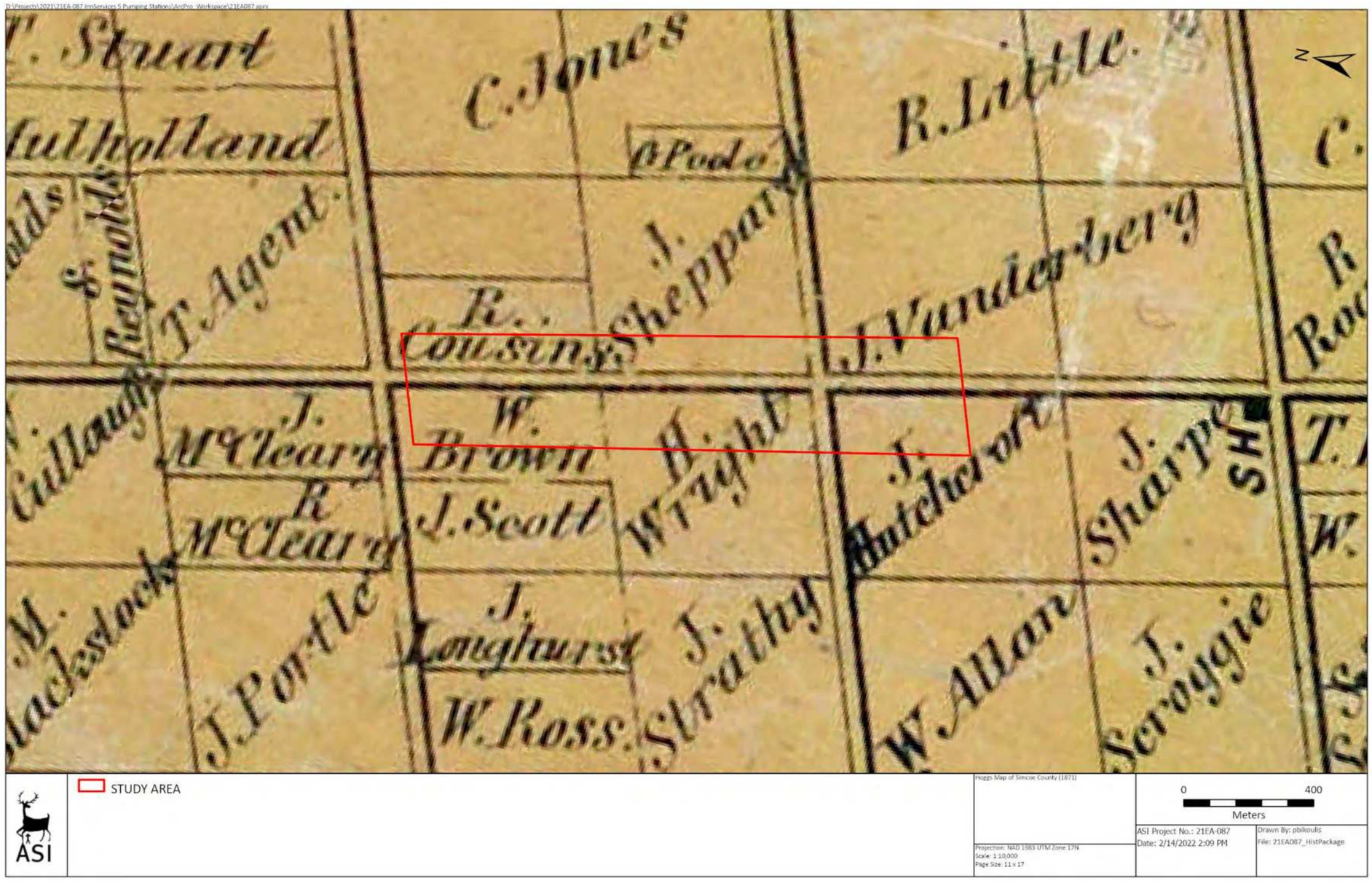


Figure 2: The Study Area overlaid on the 1871 Hoggs Map of the County of Simcoe (Base Map:(Hogg, 1871).

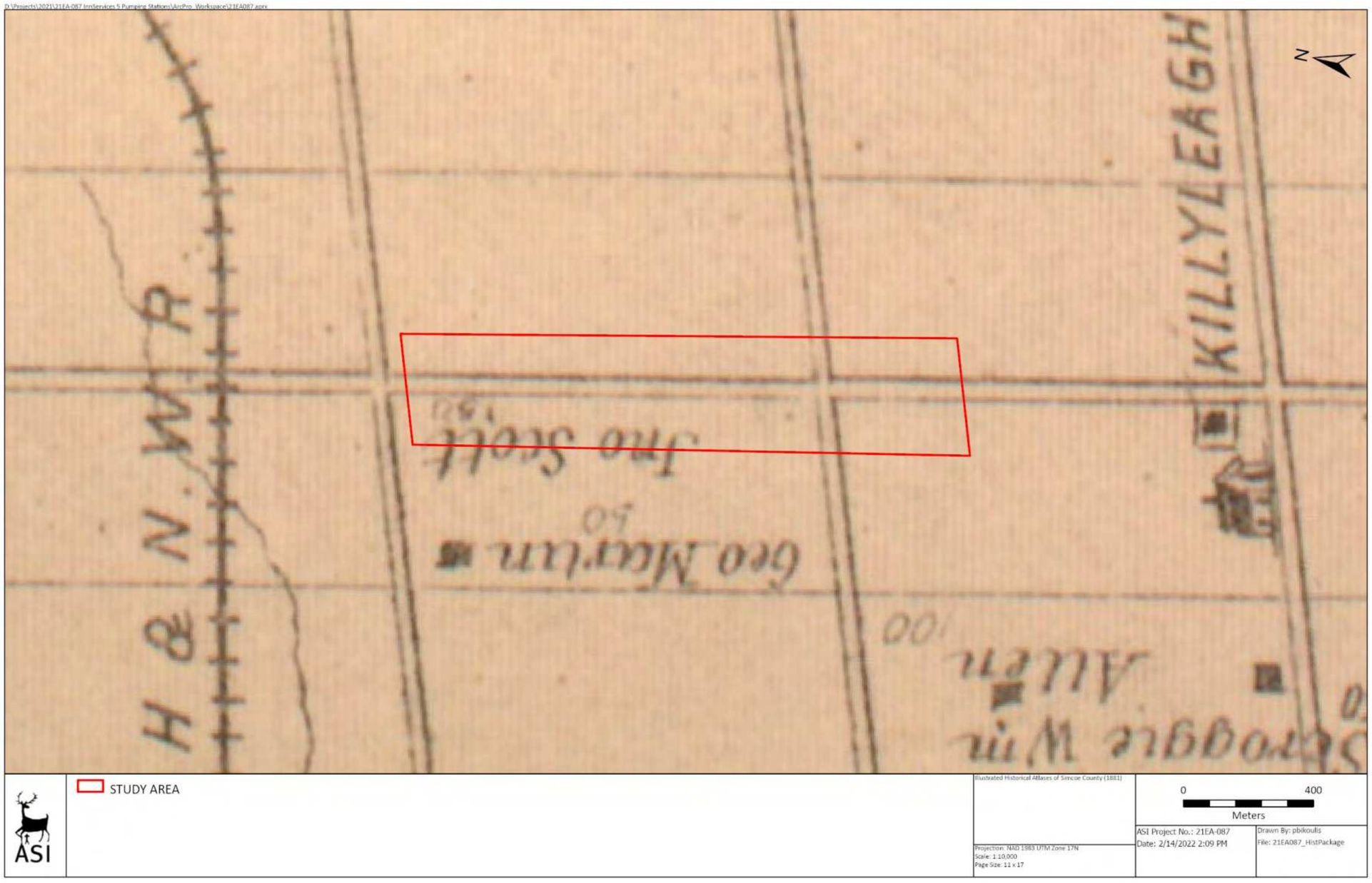


Figure 3: The Study Area overlaid on the 1881 Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881).

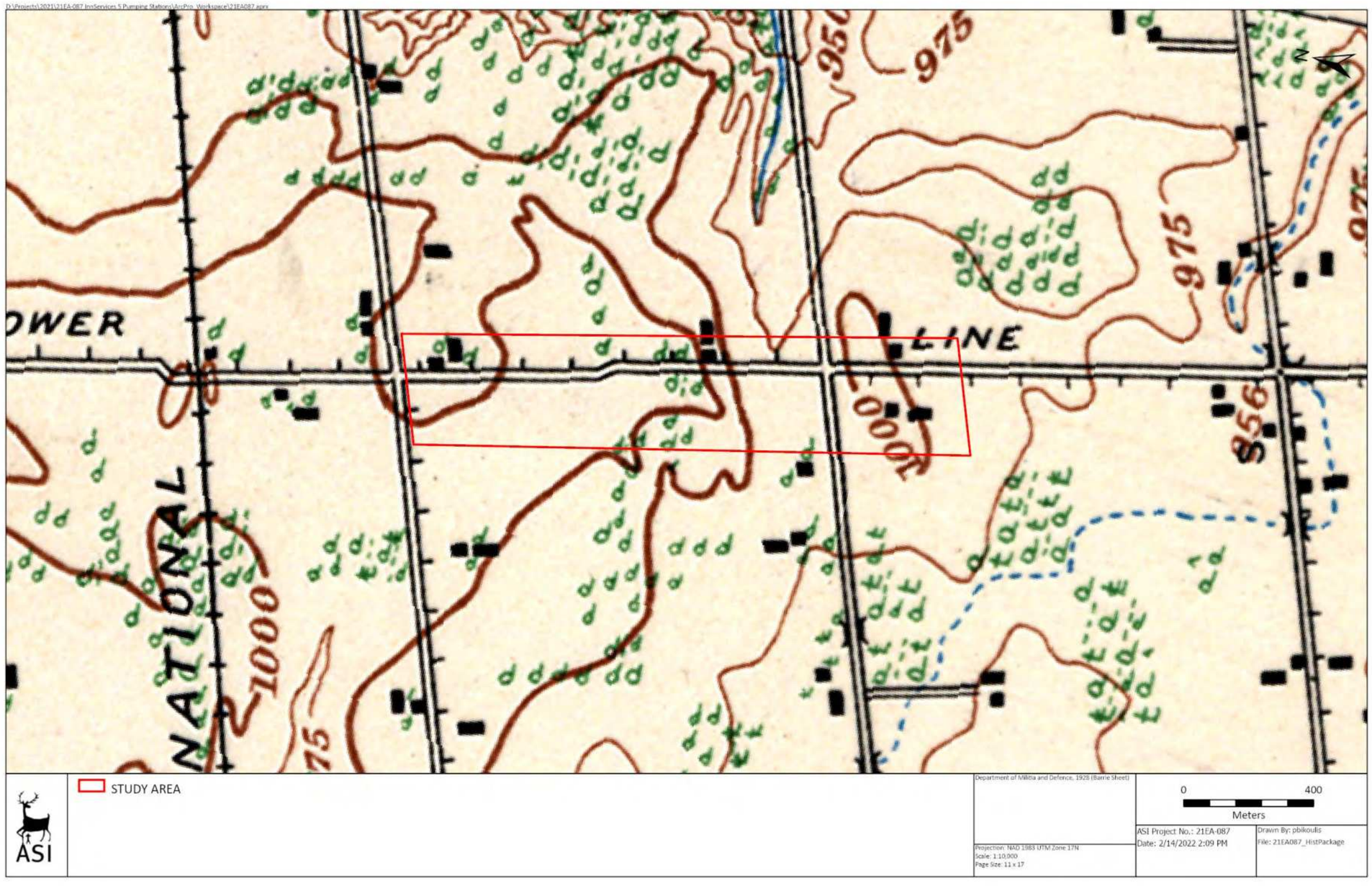


Figure 4: The Study Area overlaid on the 1928 topographic map of Barrie (Department of National Defence, 1928).

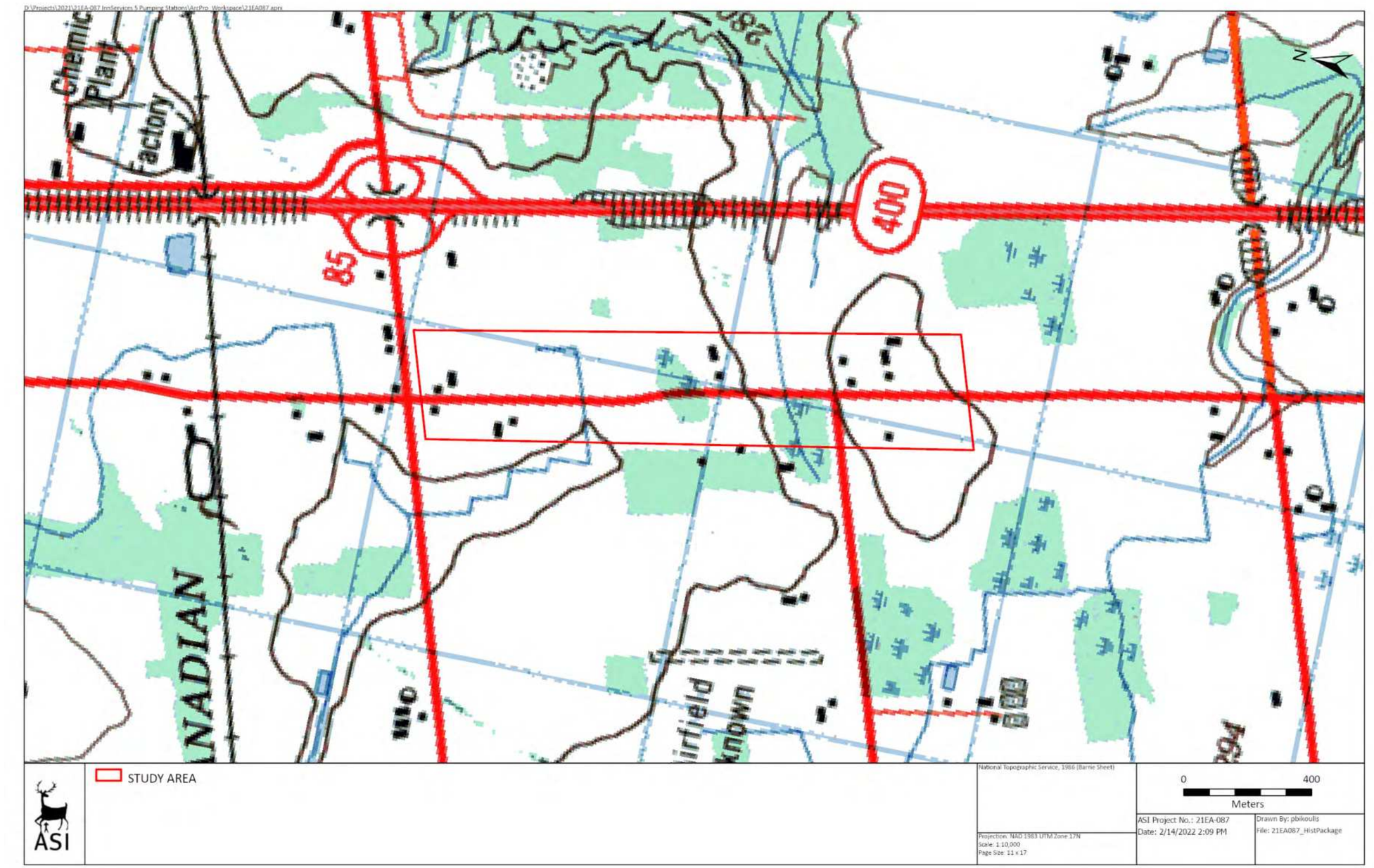


Figure 5: The Study Area overlaid on the 1986 topographic map of Barrie (Department of Energy, Mines and Resources, 1986).



Figure 6: The Study Area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954).

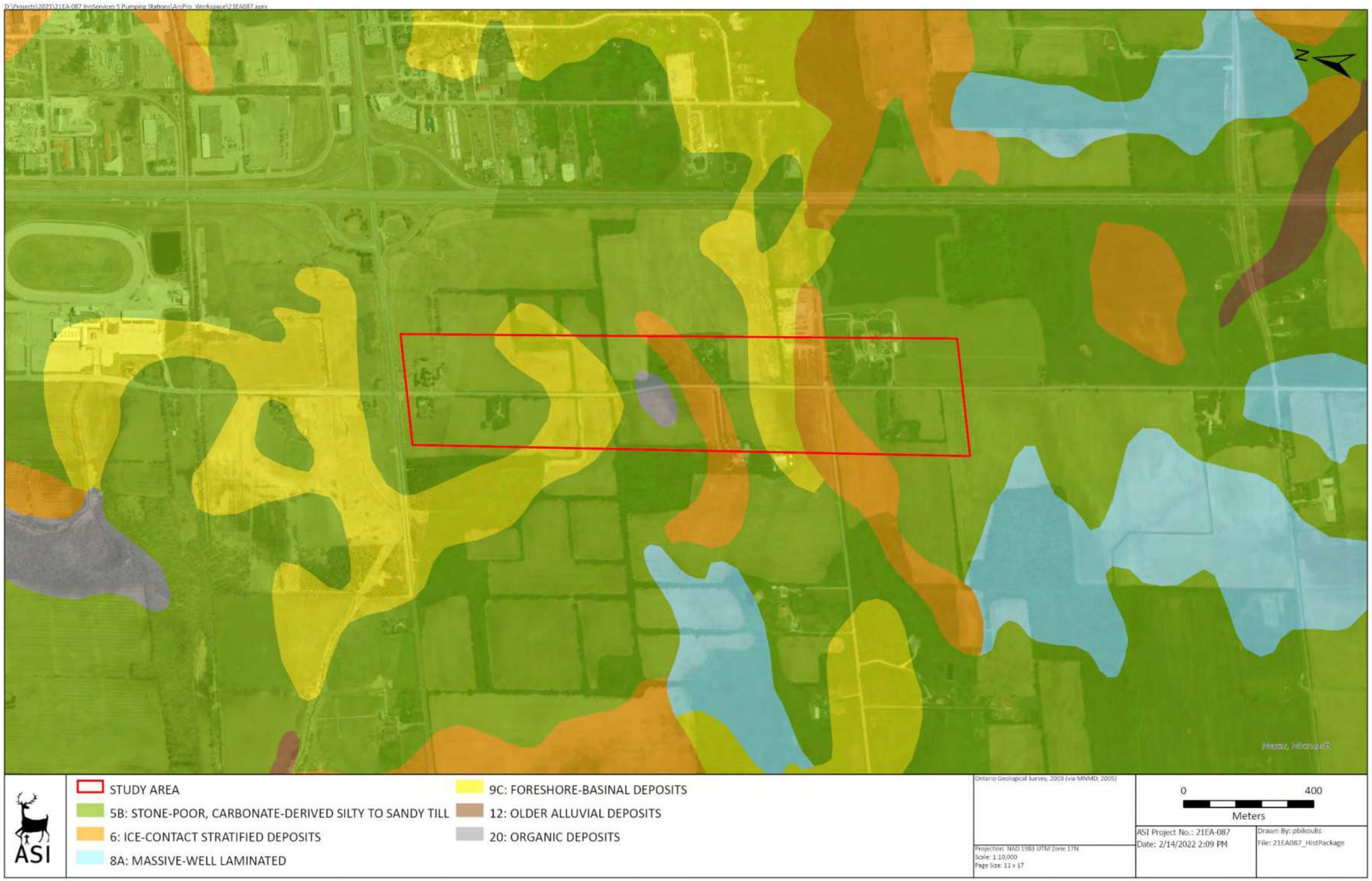


Figure 7: Study Area – Surficial Geology

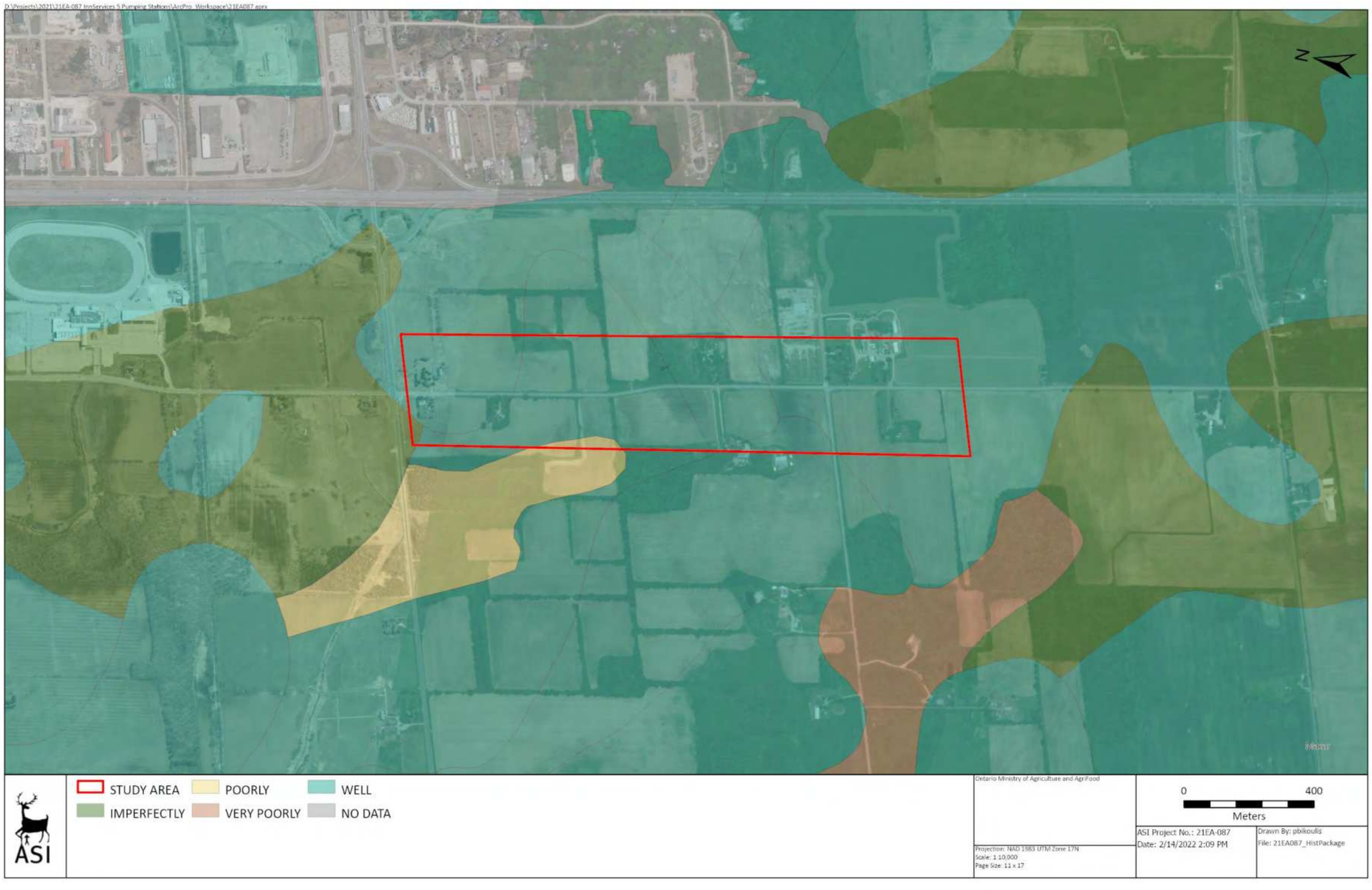


Figure 8: Study Area - Soil Drainage



Figure 9: Archaeological Existing Conditions (from the County of Simcoe Archaeological Management Plan (ASI, 2019).



Figure 10: Stage 1 Results for Sewage Pumping Station #2 Sheet 1

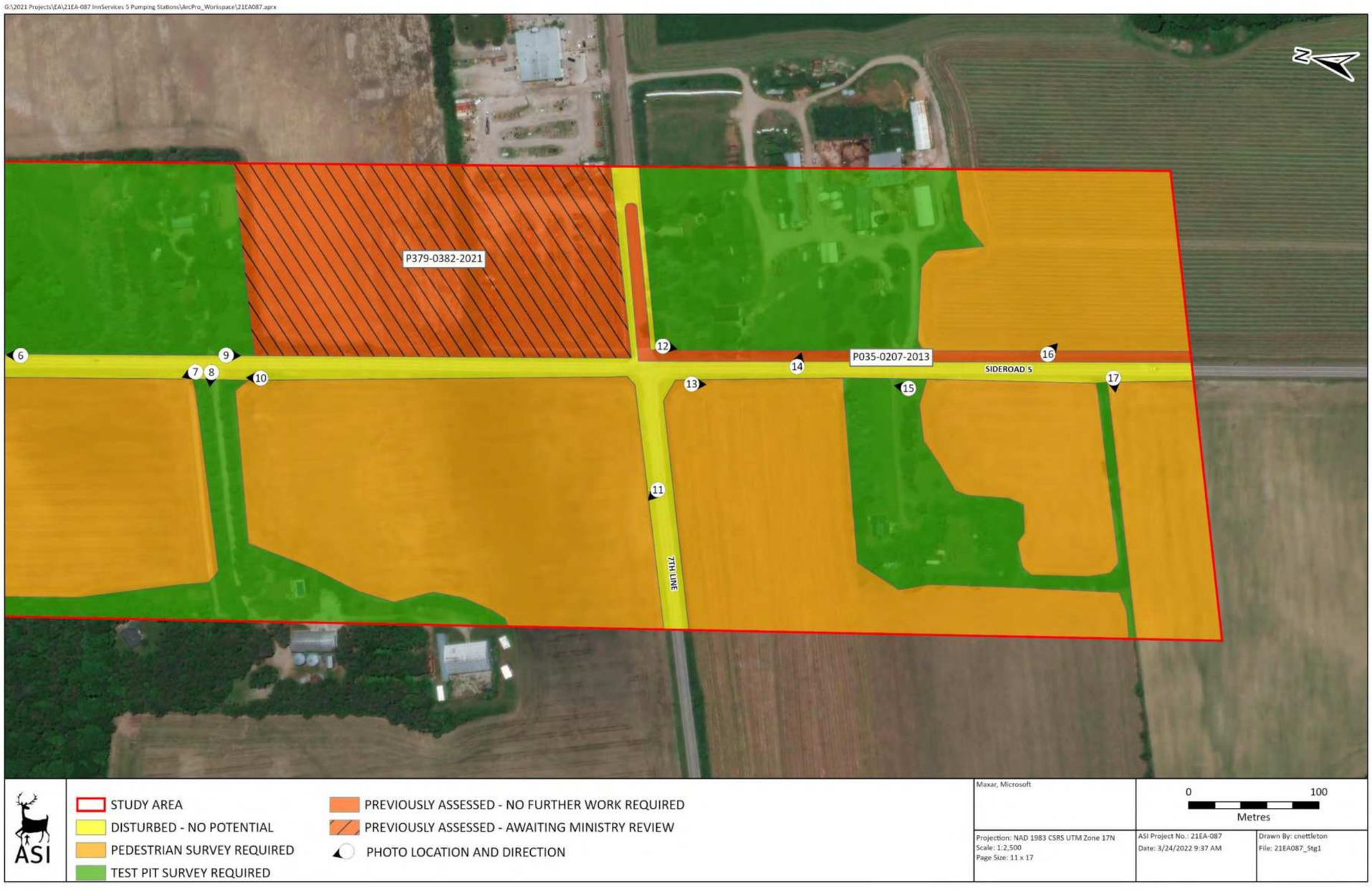


Figure 11: Stage 1 Results for Sewage Pumping Station #2 Sheet 2

Appendix F

Archaeological Assessment Report

Stage 1 & 2 Archaeological Assessment
And
Stage 3 Archaeological Assessment of the Lost Copper Site
BbGw-93

Part of Lot 6, Concession 7
Town of Innisfil
Simcoe Region
Historic Township of Innisfil
Historic County of Simcoe

June 11, 2021
Prepared for: The Proponent
Prepared by: Irvin Heritage Inc.
Archaeological Licensee: Thomas Irvin, P379
PIF#: P379-0375-2021 & P379-0382-2021
Version: Original

contact@irvinheritage.com
Office: 647-799-4418 Cell: 647-656-4810
PO Box 93163 Newmarket ON L3Y 8K3
www.irvinheritage.com

EXECUTIVE SUMMARY

Irvin Heritage Inc. was contracted by the proponent to conduct a Stage 1 and 2 Archaeological Assessment in support of a development application for a Study Area which is approximately 26.33 Ha in size.

The Stage 1 Archaeological Assessment indicated that the Study Area retained archaeological potential. As such, a Stage 2 Archaeological Assessment consisting of both a 5 m Visual Survey and 5 m Test Pit Survey was conducted. The Stage 2 identified two Indigenous Isolated Findspots, a chert scraper and a cold hammered rolled copper tube. The copper artifact location was registered as the Lost Copper Site (BbGw-93). In discussion with the Archaeology Program Unit, a small focused Stage 3 excavation was conducted on the Lost Copper Site, which determined the site to represent an Isolated FIndspot.

Given the results and conclusions of the completed Stage 1, 2 and 3 assessment, the following recommendations are made:

- Isolated Findspot #1 has been sufficiently documented in the Stage 2 archaeological assessment, it retains no further Cultural Heritage Value or Interest and no further archaeological investigation is required.

- The Lost Copper Site BbGw-93 has been sufficiently documented within the completed Stage 3 archaeological excavation. The site of low archaeological value and retains no further Cultural Heritage Value or Interest. No further archaeological investigation is required as the site does not meet the necessary criteria for such per Section 3.4, or 3.4.2 of the Standards and Guidelines for Consultant Archaeologists.

- It is the professional opinion of the archaeological licensee, Thomas Irvin (P379) that the Study Area has been sufficiently assessed and is free of further archaeological concern.

- Notwithstanding the above recommendations, the provided Advice On Compliance With Legislation shall take precedent over any recommendations of this report should deeply buried archaeological resources or human remains be found during any future earthworks within the Study Area

EXECUTIVE SUMMARY 2
1. ASSESSMENT CONTEXT 5
1.1. DEVELOPMENT CONTEXT 5
1.2. ENVIRONMENTAL SETTING 5
2. HISTORICAL CONTEXT 5
2.1. GENERAL HISTORY 5
2.2. STUDY AREA HISTORY 6
3. ARCHAEOLOGICAL CONTEXT 6
3.1. REGISTERED ARCHAEOLOGICAL SITES 6
3.3. CEMETERIES & BURIALS 7
3.4. ARCHAEOLOGICAL MANAGEMENT PLAN 7
3.5. HERITAGE CONSERVATION DISTRICT 7
3.6. HERITAGE PROPERTIES 7
3.7. HISTORIC PLAQUES 7
4. STAGE 1 ANALYSIS & CONCLUSIONS 7
5. STAGE 1 RECOMMENDATIONS 8
6. STAGE 2 FIELD METHODOLOGY 8
7. STAGE 2 RECORD OF FINDS 10
8. STAGE 2 ANALYSIS & CONCLUSIONS 10
9. STAGE 2 RECOMMENDATIONS 11
10. STAGE 3 EXCAVATION METHODOLOGY 12
11. STAGE 3 RECORD OF FINDS 13
12. STAGE 3 ANALYSIS & CONCLUSION 13
13. STAGE 2 & 3 SUMMARY RECOMMENDATIONS 14
14. ADVICE ON COMPLIANCE WITH LEGISLATION 15
15. IMAGES 16
16. FIGURES 20
17. MAPS 22
17.1. MAP 1: STUDY AREA LOCATION 23
17.2. MAP 2: STUDY AREA TOPOGRAPHIC DETAIL 24
17.3. MAP 3: STUDY AREA ENVIRONMENTAL DETAIL 25
17.4. MAP 4: STUDY AREA ATOP 1871 HISTORIC ATLAS MAP 26
17.5. MAP 5: STUDY AREA ATOP 1881 HISTORIC ATLAS MAP 27
17.6. MAP 6: STAGE 1 ASSESSMENT RECOMMENDATIONS 28

17.7.MAP 7: STAGE 2 RESULTS OF ASSESSMENT 29
17.8.MAP 8: STAGE 3 RESULTS OF EXCAVATION 30
18. REFERENCES 31

Project Personnel

Professional Licensee & Project Manager:	Thomas Irvin, MA (P379)
Field Director(s):	Thomas Irvin, MA (P379)
Assistant Field Director(s):	NA
Field Archaeologist(s):	Steffei Samuel, MA Michael Grajnar, BA Caleb Samuel Jackson Dolap Nikolas Valenzuela
Artifact Analysis	Thomas Irvin, MA (P379)
Report Author(s):	Thomas Irvin, MA (P379) Michelle Pandith, BA
GIS & Graphics:	Michelle Pandith, BA

1. ASSESSMENT CONTEXT

1.1. Development Context

Irvin Heritage Inc. was retained by the proponent to conduct a Stage 1 and 2 Archaeological Assessment of their property (the Study Area) located within Part of Lot 6, Concession 7, Town of Innisfil, Simcoe Region, Historic Township of Innisfil in the Historic County of Simcoe (Map 1).

The requirement for a Stage 1 Archaeological Assessment was triggered by the Approval Authority in response to a Development Application under the Planning Act for the construction of residential units. The assessment reported on herein was undertaken after direction by the Approval Authority and before formal application submission.

The archaeological assessment reported on was undertaken for the entirety of the legal 26.33 Ha property. Permission, without limitation, was provided by the proponent to survey, assess, and document the archaeological potential and resources, if present, of the Study Area.

1.2. Environmental Setting

The Study Area is irregular in shape, approximately 26.33 Ha in size, is predominantly active agricultural lands, with areas of woodlot, scrubland and manicured lawn (Maps 2 & 3).

An unnamed water course flows east to west through the Study Area, a series of marshes are located 550 m east of the Study Area.

The Study Area is situated within the Peterborough Drumlin Field (31) physiographic region of Southern Ontario.

2. HISTORICAL CONTEXT

2.1. General History

The Study Area is located within the boundary of Treaty 18, known as the Nottawasaga Purchase. This treaty was signed on October 17, 1818 by representatives of the Crown and certain Anishinaabe peoples (MIA 2021). The treaty is additionally known as the Lake Simcoe-Nottawasaga Treaty and was the first of three treaties signed between October and November of 1818 (MIA 2021).

The Study Area is closest to the historic community of Thornton, originally named *Henrysville* in 1853 (Rayburn 1997). In 1854 the community was renamed to Thornton, after the then British Ambassador to Washing, Sir Edward Thornton (Rayburn 1997).

2.2. Study Area History

A review of historical resources resulted in the following data relevant to the Study Area:

Map 4: 1871 Historic Atlas of the County of Simcoe (Hogg 1871)

The Study Area is situated within part of Lot 6, Concession 7. The land containing the Study Area is listed as under the ownership of J. Sheppard. There are no structures noted within or adjacent to the Study Area.

Map 5: 1881 Historic Atlas of the County of Simcoe (Belden 1881)

The Study Area is situated within part of Lot 6, Concession 7. There is no land ownership noted for the Study Area. There are no structures noted within or adjacent to the Study Area.

The following should be noted in regard to the review of historic maps:

- Study Area placement within historic maps is only approximate
- Many historic maps were subscriber based, meaning only individuals who paid a fee would have their property details mapped

3. ARCHAEOLOGICAL CONTEXT

The Study Area is situated within an overall historic landscape that would have been appropriate for both resource procurement and habitation by both Indigenous and Euro-Canadian peoples.

3.1. Registered Archaeological Sites

A search of the Ontario Sites Database conducted on April 30, 2021, using a Study Area centroid of 17T E 605296 N 4903317 indicated that there is 1 registered archaeological site within a 1 km radius of the Study Area; the site is not within the Study Area nor within a 50 m buffer.

TABLE 1: SITES WITHIN 1 KM

Borden #	Site Name	Time Period	Affinity	Site Type
BbGw-11	Roof	Woodland, Late	Iroquoian	Village

3.2. Related and/or Adjacent Archaeological Assessments

No readily identifiable archaeological assessments have been conducted within or directly adjacent to the Study Area.

3.3. Cemeteries & Burials

As per a cursory search conducted on April 30, 2021, there are no known or registered cemeteries or burials within or adjacent to the Study Area.

3.4. Archaeological Management Plan

The Study Area is situated within the limits of the Simcoe Region Archaeological Management Plan. A review of the Simcoe Region Archaeological Potential GIS Layer indicates that the Study Area retains archaeological potential.

3.5. Heritage Conservation District

The Study Area is not situated within an existing or proposed Heritage Conservation District.

3.6. Heritage Properties

The Study Area contains no registered or listed heritage properties.

3.7. Historic Plaques

There are no historic plaques within a 100 m radius of the Study Area (Ontario Heritage Trust 2021).

4. STAGE 1 ANALYSIS & CONCLUSIONS

It is clear that the Study Area retains archaeological potential owing to the environmental setting of the Study Area in relation historic settlement, proximity of registered archaeological sites, and proximity to a watercourse.

As such, the Study Area retains archaeological potential and should be subject to a Stage 2 Archaeological Assessment (Map 6).

5. STAGE 1 RECOMMENDATIONS

Given the analysis and conclusion of the completed Stage 1 assessment, the following recommendations are made:

- Lands which can be subject to agricultural ploughing must be prepared via ploughing to ensure a minimum 80% of soil visibility. Prepared lands must be allowed to weather under a significant rainfall event, or several lighter rains. A visual survey must be undertaken along 5 m survey intervals.

- Lands which are not viable to plough must be subject to a test pit survey with the following conditions:
  - All test pits are to be excavated by hand at 5 m intervals along 5 m transects
  - Test pits must be excavated to within 1 m of all extant and/or ruined structures when present
  - All test pits must be 30 cm in diameter and be excavated into the first 5 cm of subsoil
  - All excavated soils must be screened through 6 mm wire mesh to facilitate artifact recovery
  - All artifacts recovered must be retained via their associated test pit
  - All test pits are to be backfilled unless instructed otherwise by the landowner

6. STAGE 2 FIELD METHODOLOGY

Prior to the initiation of fieldwork, the Field Director reviewed the existing Stage 1 archaeological analysis and recommendations; all field staff were then briefed on the archaeological potential of the Study Area. Fieldwork was conducted in May 2020 (see Table 2). The weather consisted of light cloud cover or sunny conditions, but at all times the assessment was conducted under appropriate weather conditions.

TABLE 2: DATES & DIRECTORS OF ASSESSMENT

Date	Weather	Field Director(s)	Assistant Field Director(s)
May 8 2021	23°C, light cloud cover	T. Irvin (P379)	-
May 17 2021	28°C, light cloud cover	T. Irvin (P379)	-

The assessment began with a visual review of the Study Area conditions.

The Study Area was found to consist of predominantly well ploughed and weathered agricultural fields (Images 1 and 2). These fields were subject to a 5 m transect Pedestrian Survey with two Isolated Findspots being found (Image 3). Each of the identified findspots was subject to a 1 m transect intensification survey of a minimum buffer of 20 m; this was conducted to determine if the findspots were part of a larger archaeological site (Image 4). The findspots consisted of an Indigenous lithic scraper and a hand-rolled cold hammered copper tube (Image 5). GPS waypoints accurate to 10 cm were obtained for each of the findspots.

Two archaeological resources, two Indigenous Isolated Findspots, were noted during the Pedestrian Survey of the Study Area.

Areas of scrubland and manicured lawns in the southern limit of the Study Area were subject to a 5 m transect Test Pit Survey with examples of both disturbed and undisturbed soils being noted (Images 6 - 9). Low lying and wet areas were noted in the southern limit of the Study Area, these consisted of a low lying wet area and a drainage channel (Images 10 - 11). Woodlots present in the northern limit of the Study Area were also subject to a 5 m transect Test Pit Survey with no examples of soil disturbance noted.

No archaeological resources were noted during the Test Pit Survey of the Study Area. The Test Pit Survey with the southern limit of the Study Area found examples of both disturbed and undisturbed soils, however, the disturbed soils were not concentrated in any specific area and as such did not alter the survey transects nor methodology (Table 3).

The archaeological methodology employed during the Stage 2 Test Pit survey consisted of:

- All test pits were excavated by shovel at 5 m intervals on 5 m transects (unless noted above)
- Test pits were excavated to within 1 m of all structures, both extant and in ruin, when present
- All test pits were 30 cm in diameter and were excavated into the first 5 cm of subsoil
- All excavated soils which were of an undisturbed context were screened through 6 mm wire mesh
- All test pits were examined for evidence of fill, features or cultural deposits
- All test pits were backfilled

The archaeological survey of the property resulted in the discovery of two archaeological resources.

TABLE 3: SUMMARY OF STAGE 2 ASSESSMENT METHODOLOGIES & FINDINGS

Assessment Method	Findings	Ha	% of Study Area
Archaeological Potential: 5 m Visual Survey	2 Findspots	21	79.8%
Archaeological Potential: 5m Test Pit Survey	No Resources	4.79	18.2%
Low Potential: Low Lying & Wet	-	0.54	2.1%
Total		**26.33**	**100**

7. STAGE 2 RECORD OF FINDS

The completed archaeological assessment results in the collection of two artifacts representing two isolated findspots (see Artifact Catalogue in Table 4).

TABLE 4: ARTIFACT CATALOGUE

Provenience	Resource Name	Cat. No.	Quanti ty
Lost Copper Site - Isolated Findspot	Lost Copper Site BbGw-93	BbGw-93. S2.01	1
Isolated Findspot 1:	Isolated Findspot #1 (IF#1)	P379-027 5.S2.01	1

The completed archaeological assessment resulted in the creation of various documentary records (Table 5).

TABLE 5: INVENTORY OF STAGE 2 HOLDINGS

Record Type or Item	Details	# of Boxes
Field Notes: P379-0375-2021	Digital Files	-
Photos: P379-0375-2021	Digital Files	-

8. STAGE 2 ANALYSIS & CONCLUSIONS

The Study Area, measuring approximately 26.33 Ha in size was subject to a complete archaeological assessment. Two Isolated Findspots, both of pre-contact origin, were identified during the survey.

Isolated Findspot #1

This isolated findspot represent an Indigenous unifiacial Onondaga chert scraper. No cultural affinity, beyond 'pre-contact', can be attributed to this artifact. This artifact is considered an Isolated Find and retains no further Cultural Heritage Value or Interest and no further archaeological investigation is required per Section 2.2 Standard 1a of the Standards and Guidelines for Consultant Archaeologists.

Isolated Findspot - Lost Copper Site BbGw-93

This isolated findspot represent an Indigenous cold hammered copper tube. The artifact represents an Isolated Findspot of elevated archaeological interest with further Cultural Heritage Value or Interest. Per guidance obtained from the Archaeology Program Unit, a focused Stage 3 archaeological exaction is required for this site.

TABLE 6: ARCHAEOLOGICAL RESOURCES IDENTIFIED DURING STAGE 2 SURVEY

Name	Type	Borden#	Affinity	Survey Method	Comment
IF#1	Isolated Findspot	-	Indigenous	Visual Survey	Unifacial scraper
Lost Copper Site	Isolated Findspot of Elevated Interest	BbGw-93	Indigenous	Visual Survey	Cold Hammered Copper

9. STAGE 2 RECOMMENDATIONS

Given the results and conclusions of the completed Stage 1 & 2 assessment, the following recommendations are made:

- Isolated Findspot #1 has been sufficiently documented in the Stage 2 archaeological assessment, it retains no further Cultural Heritage Value or Interest and no further archaeological investigation is required.

- The Lost Copper Site (BbGw-93) retains Cultural Heritage Value or Interest, as such a Stage 3 archaeological excavation is required. The following methodology has been approved by the Archaeological Program Unit
  - A 5 m grid installed with tape and transit is to be established over the CSP concentration of artifacts of interest as noted in this report
  - Five 1 m x 1 m test units will be excavated, with one unit being placed directly atop the location of the Isolated Findspot and a further four being placed at 2.5 m intervals along the cardinal directions. Further unit excavation may be required depending on artist yields; further

discussion with the Archaeology Program Unit will be required should further units be contemplated.
- All test units are to be 1 m x 1 m, and excavated by hand into the first 5 cm of subsoil
- All excavated soils are to be screened through 6 mm wire mesh
- All excavation units are to be backfilled
- If features are uncovered, they will be documented, covered with geo-textile cloth and backfilled

- Notwithstanding the above recommendations, the provided Advice On Compliance With Legislation shall take precedent over any recommendations of this report should deeply buried archaeological resources or human remains be found during any future earthworks within the Study Area.

10. STAGE 3 EXCAVATION METHODOLOGY

Prior to the initiation of fieldwork, the Field Director reviewed the existing Stage 2 archaeological analysis and recommendations; all field staff were then briefed on the nature of the archaeological site for which Stage 3 excavation was to be undertaken.

BbGw-93 Lost Copper Site

Fieldwork was conducted in 2021 (see Table 7). The weather consisted of cloud cover, however, at all times the assessment was conducted under appropriate weather conditions.

TABLE 7: DATES & DIRECTORS OF ASSESSMENT

Date	Weather	Field Director(s)	Assistant Field Director(s)
May 31 2021	27°C, light cloud cover	T. Irvin (P379)	-

The site was relocated using the CSP data collected by the previous Stage 2; as well flags were left in the field marking the find post location. An Emlid GLONASS GPS with an accuracy of 2 cm was used to determine the site datum at which a grid stake designated 500N-200E was installed; the grid itself was installed using a tape and transit. The Stage 3 excavation began with the excavation of all grid units. In the majority of all units there was no visible stratigraphy to the soils within the site area, as such, 10 cm arbitrary lots were initially employed. It was readily apparent that the site area was plough disturbed as such, the arbitrary lots were discontinued and the plough zone was treated as a single Lot (Lot 1). The Stage 3 grid was installed at 5 m intervals, with units being excavated atop the datum stake (marking the location

of the find spot) and additional units at 2.5 m along the cardinal points from the datum (this methodology was developed in conjunction, and approved by the Archaeology Program Unit - see Supplemental Documentation). No artifacts were recovered from the Stage 3 excavation. No evidence of cultural features as was noted within any of the excavation units.

All Stage 3 units were excavated by hand, in standardized or stratigraphic levels, all soils were screened through 6 mm wire mesh and all artifacts were retained via their excavation context. Excavation into subsoil was conducted in a standardized 5 cm lot. Upon completion of the Stage 3 excavation all units were backfilled and the excavation grid removed.

11. STAGE 3 RECORD OF FINDS

The completed archaeological assessment resulted in the creation of various documentary records (Table 8).

TABLE 8: INVENTORY OF STAGE 3 HOLDINGS

Record Type or Item	Details	# of Boxes
Field Notes: P379-0382-2021	Digital Files	-
Photos: P379-0382-2021	Digital Files	-

12. STAGE 3 ANALYSIS & CONCLUSION

BbGw-93 Lost Copper Site

The Stage 3 excavation of the Lost Copper Site resulted in the collection of no artifacts and demonstrated that the site was an Isolated Findspot. The lack of artifacts suggests that the Indigenous copper found during the Stage 2 survey is likely a loss, and not indicative of any substantial or noted occupation or activity. It should be noted that the Roof Site (BbGw-11), a Late Woodland Village is located approximately 1,800 m north-east of the Study Area. While no excavations have yet been reported on for the Roof Site, it is possible that this artifact may be the result of a loss from an inhabitant of the Roof Site, or perhaps another undiscovered settlement within the area.

The site is of low archaeological value, with no further demonstrated Cultural Heritage Value or Interest. As such, the site has no further Cultural Heritage Value or Interest and no further archaeological investigation is warranted.

13. STAGE 2 & 3 SUMMARY RECOMMENDATIONS

- Isolated Findspot #1 has been sufficiently documented in the Stage 2 archaeological assessment, it retains no further Cultural Heritage Value or Interest and no further archaeological investigation is required.

- The Lost Copper Site BbGw-93 has been sufficiently documented within the completed Stage 3 archaeological excavation. The site of low archaeological value and retains no further Cultural Heritage Value or Interest. No further archaeological investigation is required as the site does not meet the necessary criteria for such per Section 3.4, or 3.4.2 of the Standards and Guidelines for Consultant Archaeologists.

- It is the professional opinion of the archaeological licensee, Thomas Irvin (P379) that the Study Area has been sufficiently assessed and is free of further archaeological concern.

- Notwithstanding the above recommendations, the provided Advice On Compliance With Legislation shall take precedent over any recommendations of this report should deeply buried archaeological resources or human remains be found during any future earthworks within the Study Area

14. ADVICE ON COMPLIANCE WITH LEGISLATION

The Standards and Guidelines for Consultant Archaeologists requires that the following standard statements be provided within all archaeological reports for the benefit of the proponent and approval authority in the land use planning and development process (MTC 2011:126):

> This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the MTCS, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
>
> It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.
>
> Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.
>
> Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.
>
> The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Service.

15. IMAGES



Image 1: Visual Survey conditions.



Image 2: Soil visibility during Pedestrian Survey.



Image 3: Archaeologists conducting 5 m Pedestrian Survey.



Image 4: Archaeologists conducting 1 m Findspot Intensification Survey.



Image 5: Indigenous cold hammered copper artifacts (Lost Copper Site BbGw-93).



Image 6: Archaeologists conducting a 5 m Test Pit Survey.



Image 7: Archaeologists conducting a 5 m Test Pit Survey.



Image 8: Example of disturbed soil conditions.



Image 9: Example of disturbed soil conditions.



Image 10: Example of Low Lying & Wet soil conditions.



Image 11: Watercourse running through Study Area.

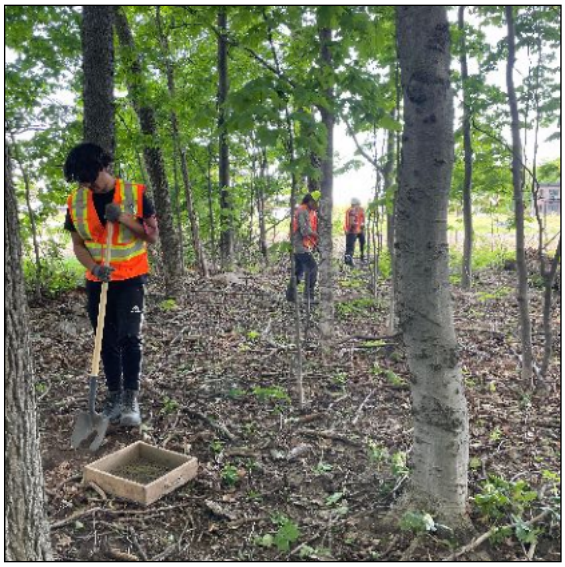


Image 12: Archaeologists conducting 5 m Test Pit Survey.



Image 13: Test Pit Survey conditions.



Image 14: Installation of Stage 3 grid at the Lost Copper Site BbGw-93.

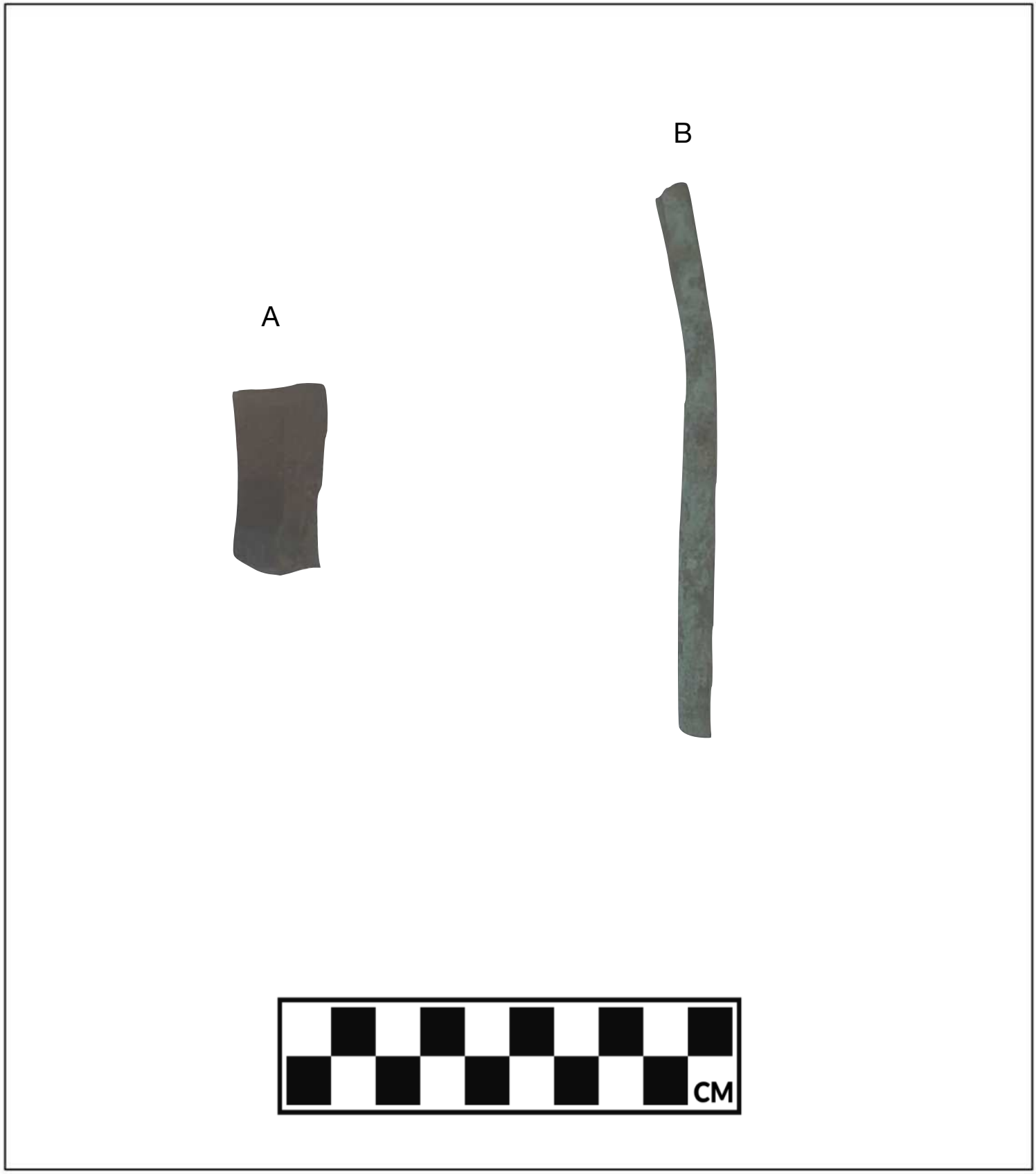


Image 15: Stage 3 excavation within surrounding environment.



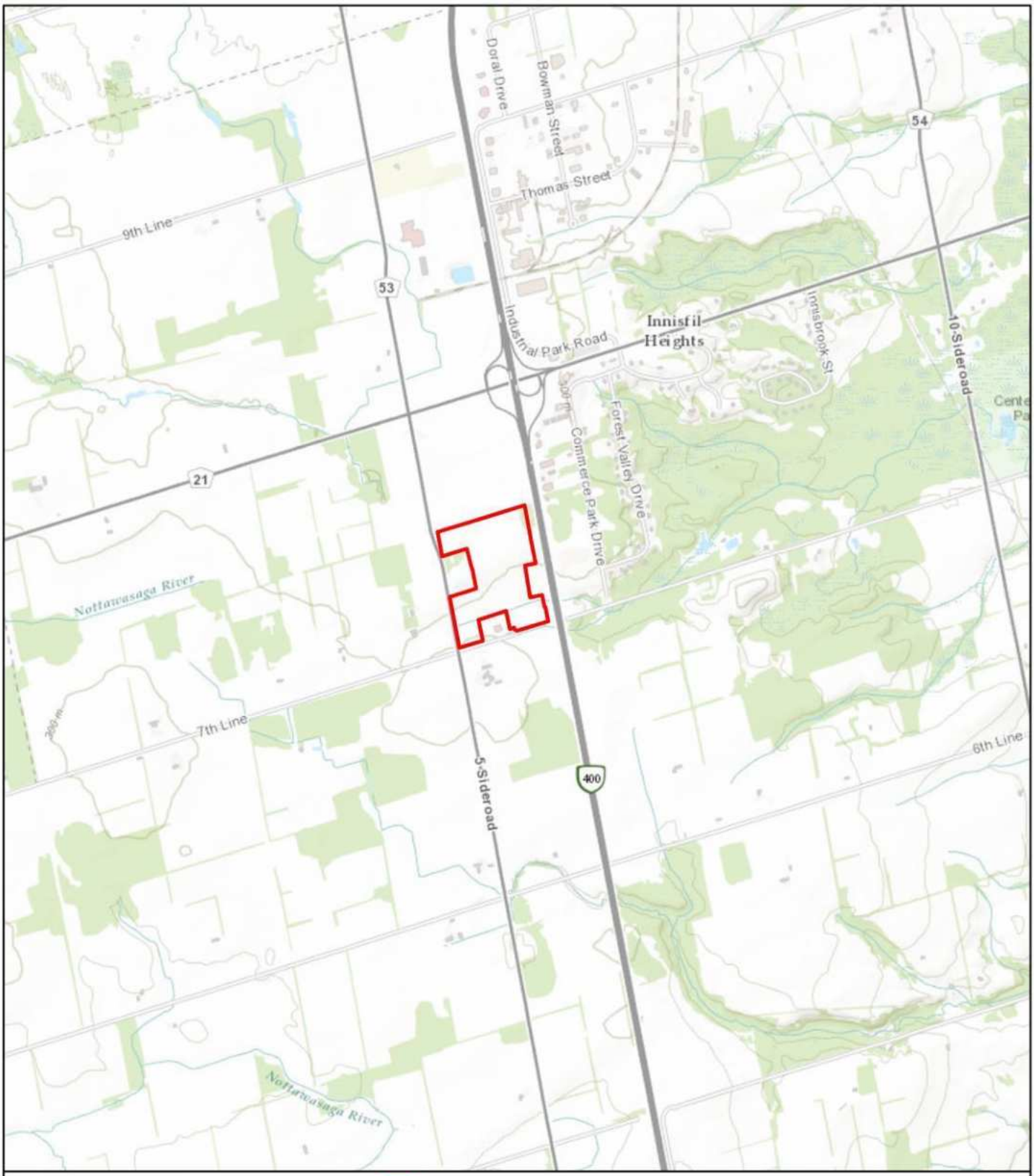
Image 16: Sample Stage 3 Test Unit showing subsoil interface prior to excavation.

16. FIGURES



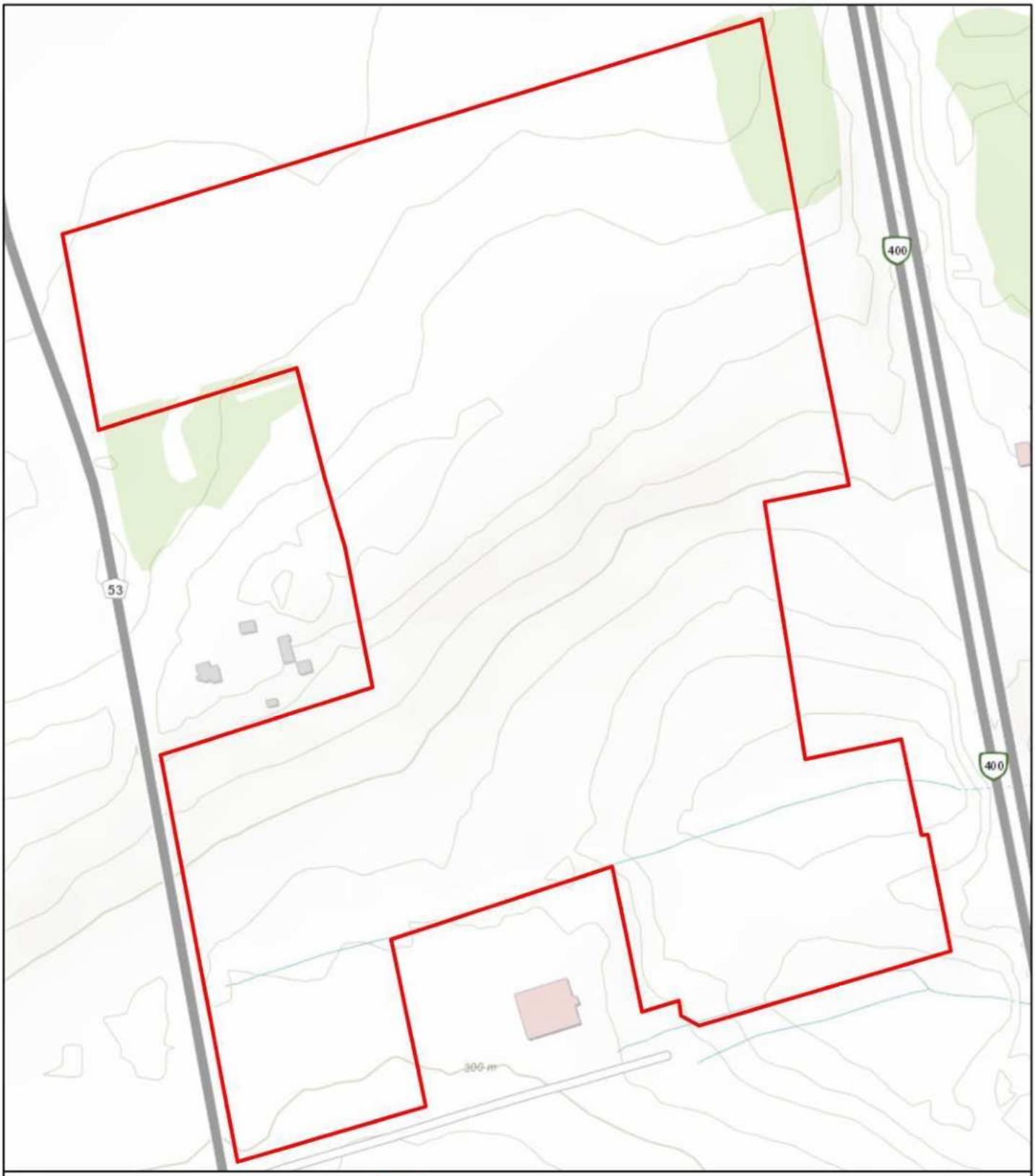
A: IF#1 - Unifacial Onondaga Scraper (P379-0275.S2.01)
B: Lost Copper BbGw-93 Indigenous Cold Hammered Rolled Tube (BbGw-93.S2.01)

17. MAPS



Source: City of Brampton, City of Toronto, County of Simcoe, York Region, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA, AAFC, NRCan

Map 1: Study Area Location



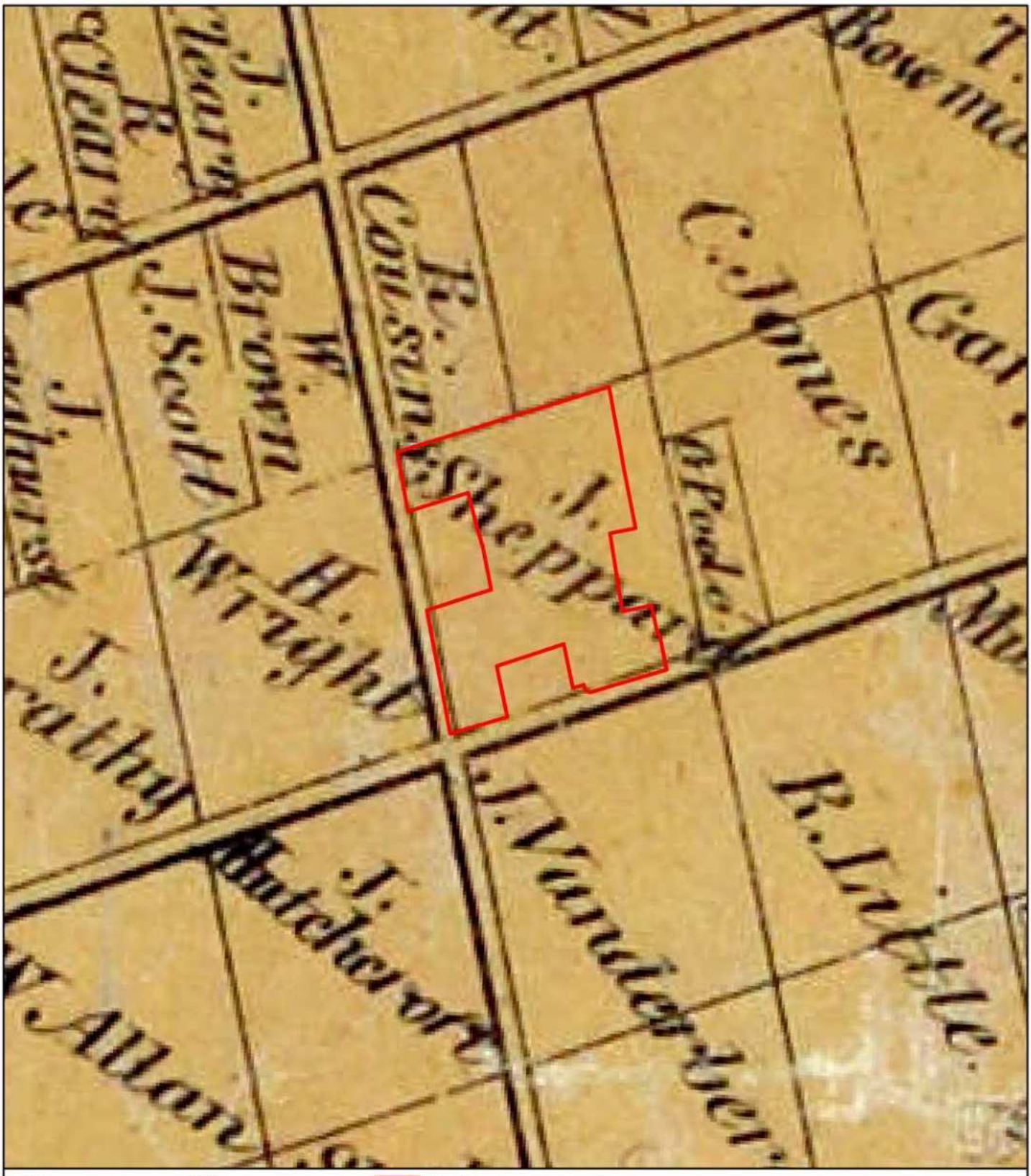
Source: City of Brampton, City of Toronto, County of Simcoe, York Region, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, AAFC, NRCan

Map 2: Study Area Topographic Detail



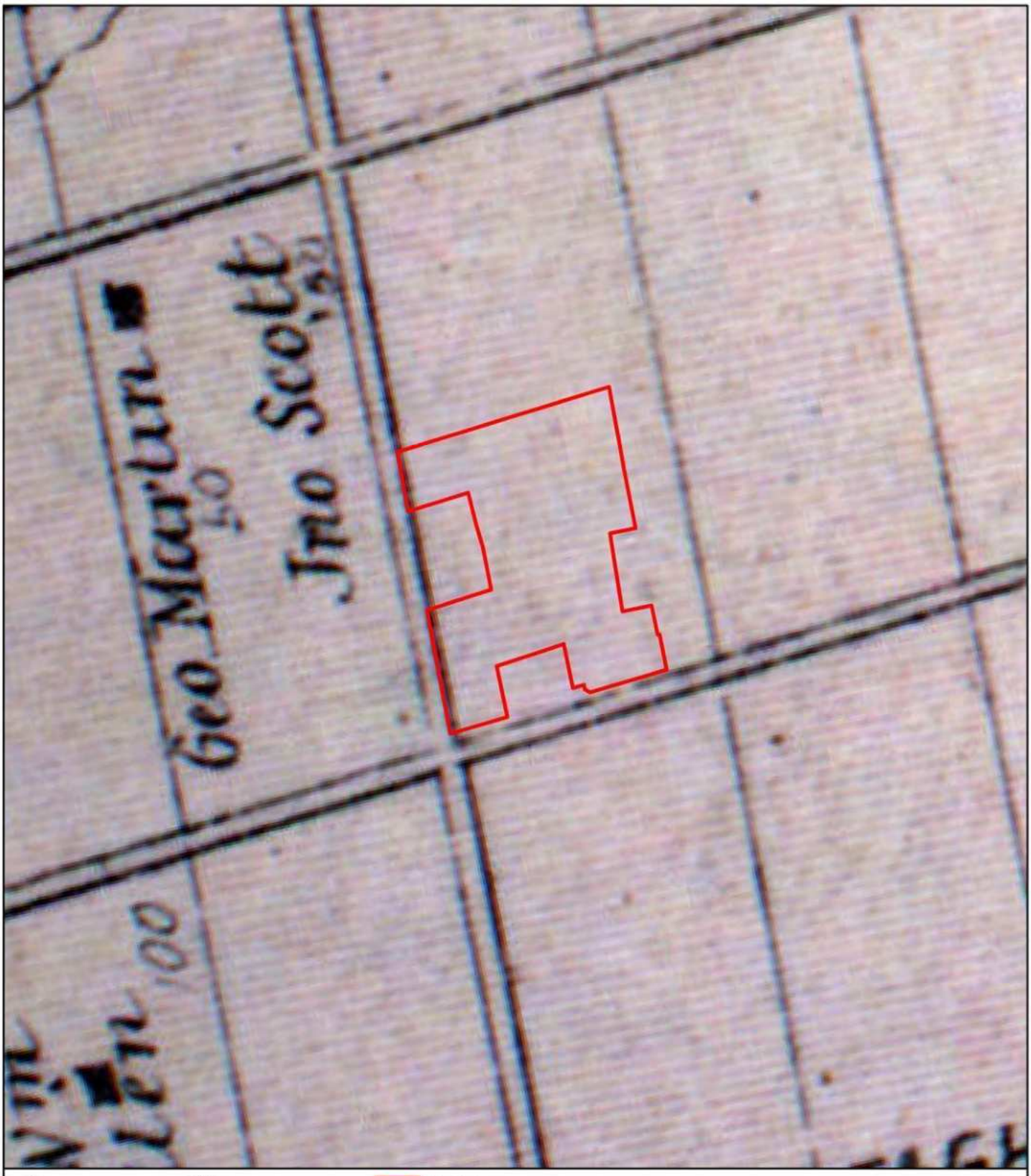
Source: Simcoe Region GIS

Map 3: Study Area Environmental Detail



Source: 1871 Hogg

Map 4: Study Area atop 1871 Map



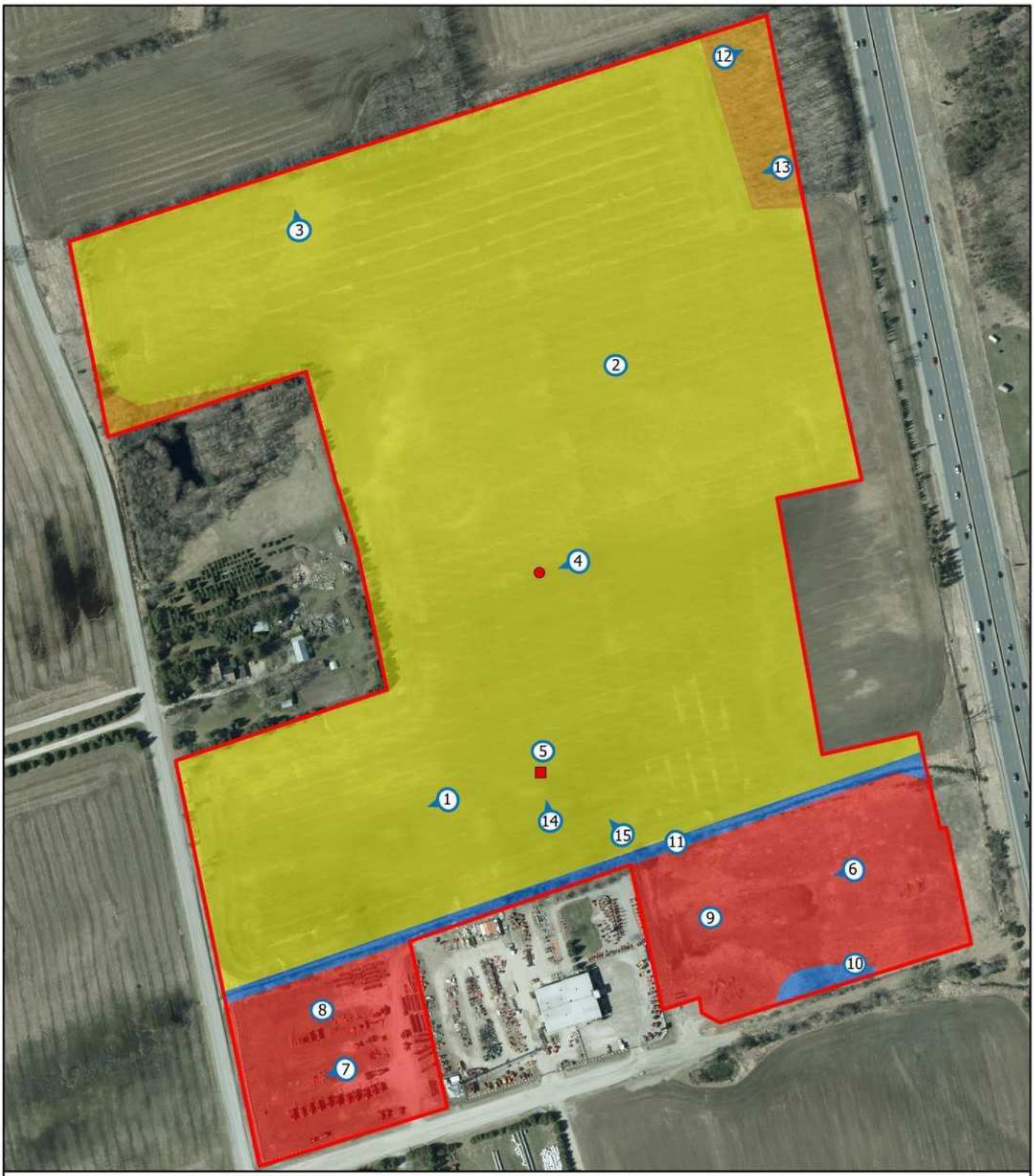
Source: 1881 Belden

Map 5: Study Area atop 1881 Map



Source: Simcoe Region GIS

Map 6: Stage 1 Results & Recommendations



N

Meters

0 60 120 180 240

Source: Simcoe Region GIS

Study Area

Photo # & Direction

5m Pedestrian Survey Conducted: 2 Archaeological Resources

Low Potential: Low Lying & Wet

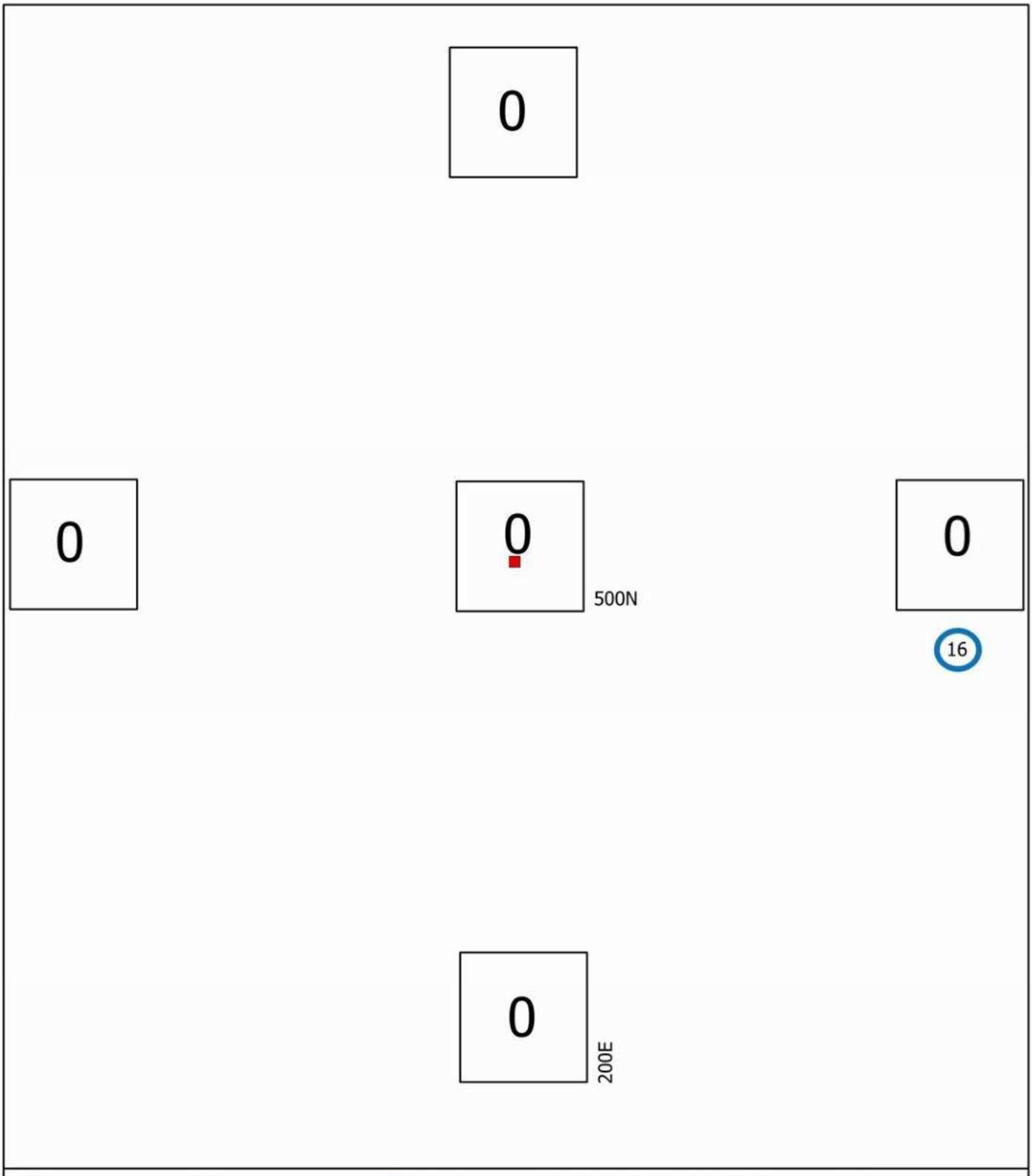
5m Test Pit Survey: Examples of Disturbance - No Archaeological Resources

5m Test Pit Survey: No Disturbance - No Archaeological Resources

Lost Copper Site BbGw-93: Isolated Indigenous Findspot

Isolated Findspot #1

Map 7: Stage 2 Results of Assessment



Source: City of Brampton, City of Toronto, County of Simcoe, York Region, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, AAFC, NRCan

Map 8: BbGw-93 Lost Copper Site - Stage 3 Results of Excavation

18. REFERENCES

Belden, H.
1881 Illustrated historical atlas of the County of Simcoe. Ontario. Toronto. H. Belden & Co.

Hogg. J.
1871 Illustrated historical atlas of the County of Simcoe. Ontario. Collingwood. J. Hogg Publisher.

Ontario Heritage Trust
2021 Historical Plaques. Accessed online.

Ontario Ministry of Indigenous Affairs (MIA)
2021 Map of Ontario treaties and reserves. Accessed online.

Rayburn, A.
1997 Place Names of Ontario. University of Toronto Press Inc. Toronto.

Appendix G

Cultural Heritage Report: Existing Condition and Preliminary Impact Assessment

Cultural Heritage Report:
Existing Conditions and Preliminary Impact Assessment

Innisfil Heights Sewage Pumping Station 2
Municipal Class Environmental Assessment

Town of Innisfil
Simcoe County, Ontario

Final Report

Prepared for:

Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
T 705-445-3451

Archaeological Services Inc. File: 21CH-080

April 2022 (updated March and August 2025)



Executive Summary

Archaeological Services Inc. was contracted by Ainley Group, on behalf of InnServices Utilities Inc., to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment as part of the Innisfil Heights Sewage Pumping Station 2 (I.H. S.P.S. 2) Municipal Class Environmental Assessment. The Environmental Assessment is part of the Innisfil Master Servicing Plan (M.S.P.) update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development. I.H. S.P.S. 2 is one of the proposed sewage pumping stations identified along this sewer route. The project study area consists of several properties on the east and west sides of 5th Sideroad from Innisfil Beach Road to the north to beyond 7th Line in the south.

The purpose of this report is to present an 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.

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an Indigenous history spanning millennia and a rural land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are no previously identified features of cultural heritage value or interest within the I.H. S.P.S. 2 study area. Four additional potential C.H.L.s were identified during the fieldwork. The preferred alternative is not anticipated to result in direct or indirect adverse impacts to any identified C.H.L.s.

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified B.H.R.s and C.H.L.s. Avoidance measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.

2. 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 heritage resources.

3. The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted to the Town of Innisfil 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. The final report should be submitted to the Town of Innisfil for their records.

Report Accessibility Features

This report has been formatted to meet the Information and Communications Standards under the *Accessibility for Ontarians with Disabilities Act*, 2005 (A.O.D.A.). Features of this report which enhance accessibility include: headings, font size and colour, alternative text provided for images, and the use of periods within acronyms. Given this is a technical report, there may be instances where additional accommodation is required in order for readers to access the report's information. If additional accommodation is required, please contact Annie Veilleux, Manager of the Cultural Heritage Division at Archaeological Services Inc., by email at aveilleux@asiheritage.ca or by phone 416-966-1069 ext. 255.

Project Personnel

- **Senior Project Manager**: Lindsay Graves, M.A., C.A.H.P., Senior Cultural Heritage Specialist, Assistant Manager - Cultural Heritage Division
- **Project Coordinator:** Katrina Thach, B.A. (Hon), Associate Archaeologist, Project Coordinator - Environmental Assessment Division
- **Project Manager**: John Sleath, M.A., Cultural Heritage Specialist, Project Manager - Cultural Heritage Division
- **Field Review**: Meredith Stewart, M.A., M.S.c., C.A.H.P. Intern, Cultural Heritage Technician, Technical Writer and Researcher - Cultural Heritage Division
- **Report Production**: Becca Clark, B.A. (Hon), Adv. Diploma, Cultural Heritage Technical Writer and Researcher – Cultural Heritage Division, Leora Bebko, and John Sleath
- **Graphics Production**: Peter Bikoulis, PhD., Archaeologist, GIS Technician - Operations Division
- **Report Reviewer(s)**: Lindsay Graves and John Sleath

Qualified Persons Involved in the Project

Lindsay Graves, M.A., C.A.H.P.
Senior Cultural Heritage Specialist, Assistant Manager - Cultural Heritage Division

The Senior Project Manager for this Cultural Heritage Report is **Lindsay Graves** (M.A., Heritage Conservation), Senior Cultural Heritage Specialist and Assistant Manager for the Cultural Heritage Division. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of above ground cultural heritage resources. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfill Class Environmental Assessment processes and has served as Project Manager for over 100 heritage assessments during her time at A.S.I. Lindsay is a member of the Canadian Association of Heritage Professionals.

John Sleath, M.A.
Cultural Heritage Specialist, Project Manager - Cultural Heritage Division

The Project Manager for this Cultural Heritage Report is **John Sleath** (MA), who is a Cultural Heritage Specialist and Project Manager within the Cultural Heritage Division with ASI. He was responsible for the day-to-day management activities, including scoping of research activities and site surveys and drafting of study findings and recommendations. John has worked in a variety of contexts within

the field of cultural heritage resource management for the past 15 years, as an archaeologist and as a cultural heritage professional. In 2015 John began working in the Cultural Heritage Division researching and preparing a multitude of cultural heritage assessment reports and for which he was responsible for a variety of tasks including: completing archival research, investigating built heritage and cultural heritage landscapes, report preparation, historical map regression, and municipal consultation. Since 2018 John has been a project manager responsible for a variety of tasks required for successful project completion. This work has allowed John to engage with stakeholders from the public and private sector, as well as representatives from local municipal planning departments, museums, and Indigenous communities. John has conducted heritage assessments across Ontario, with a focus on transit and rail corridor infrastructure including bridges and culverts.

Leora Bebko, M.M.St.
Cultural Heritage Technician, Technical Writer and Researcher - Cultural Heritage Division

One of the Cultural Heritage Technicians for this project is **Leora Bebko** (M.M.St.), who is a Cultural Heritage Technician and Technical Writer and Researcher within the Cultural Heritage Division. She was responsible for preparing and contributing research and technical reporting. In Leora's career as a cultural heritage and museum professional she has worked extensively in public programming and education within built heritage spaces. Leora is particularly interested in the ways in which our heritage landscapes can be used to facilitate public engagement and interest in our region's diverse histories. While completing her Master of Museum Studies she was able to combine her interest in heritage architecture and museums by focusing on the historic house museum and the accessibility challenges they face. As a thesis project, Leora co-curated the award-winning exhibit *Lost & Found: Rediscovering Fragments of Old Toronto* on the grounds of Campbell House Museum. Since completing her degree she has worked as a historical interpreter in a variety of heritage spaces, learning a range of traditional trades and has conducted research on traditional foodways and baked extensively in historic kitchens. Leora's experiences working in and with heritage buildings and tools has given her a unique understanding of the ways in which these spaces

were used historically and have evolved over time. In 2022, she joined A.S.I.'s Cultural Heritage team as a Cultural Heritage Technician.

Glossary

Built Heritage Resource (B.H.R.)
Definition: "…a building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. built heritage resources are located on property that may be designated under Parts IV or V of the *Ontario Heritage Act*, or that may be included on local, provincial, federal and/or international registers" (Ministry of Municipal Affairs and Housing, 2024, p. 41).

Cultural Heritage Landscape (C.H.L.)
Definition: "…a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the *Ontario Heritage Act*, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms" (Ministry of Municipal Affairs and Housing, 2024, p. 42).

Cultural Heritage Resource
Definition: Includes above-ground resources such as built heritage resources and cultural heritage landscapes, and built or natural features below-ground including archaeological resources (Ministry of Municipal Affairs and Housing, 2024).

Known Cultural Heritage Resource
Definition: A known cultural heritage resource is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the *Ontario Heritage Act*, or protected by a heritage agreement, covenant or easement, protected by the *Heritage Railway Stations Protection Act or the Heritage Lighthouse*

Protection Act, identified as a Federal Heritage Building, or located within a U.N.E.S.C.O. World Heritage Site (Ministry of Citizenship and Multiculturalism, 2022).

Impact

Definition: Includes negative and positive, direct and indirect effects to an identified cultural heritage resource. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource. Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, land disturbances (Ministry of Citizenship and Multiculturalism, 2006c). Indirect impacts also include potential vibration impacts (See Section 2.7 for complete definition and discussion of potential impacts).

Mitigation

Definition: Mitigation is the process of lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated (Ministry of Citizenship and Multiculturalism, 2006a).

Potential Cultural Heritage Resource

Definition: A potential cultural heritage resource is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Citizenship and Multiculturalism, 2022).

Significant

Definition: With regard to cultural heritage and archaeology resources, significant means “resources that have been determined to have cultural heritage value or

interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act.* While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation" (Ministry of Municipal Affairs and Housing, 2024, p. 51).

Vibration Zone of Influence

Definition: Area within a 50 metre buffer of construction-related activities in which there is potential to affect an identified cultural heritage resource. A 50 metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature and direction provided from the Ministry of Citizenship and Multiculturalism (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer, 1982; Wiss, 1981). This buffer accommodates the additional threat from collisions with heavy machinery or subsidence (Randl, 2001).

Table of Contents

Executive Summary 1

Report Accessibility Features 3

Project Personnel 4

Qualified Persons Involved in the Project 5

Glossary 8

Table of Contents 11

1.0 Introduction 15

1.1 Project Overview 15

1.2 Description of Study Area 15

2.0 Methodology 16

2.1 Master Servicing Plan Context 17

2.2 Regulatory Requirements 17

2.3 Municipal/Regional Heritage Policies 19

2.4 Identification of Built Heritage Resources and Cultural Heritage Landscapes 19

2.5 Background Information Review 21

2.5.1 Review of Existing Heritage Inventories 21

2.5.2 Review of Previous Heritage Reporting 22

2.5.3 Information Gathering 22

2.6 Community Engagement 22

2.7 Preliminary Impact Assessment Methodology 23

3.0 Summary of Historical Development Within the Study Area 25

3.1 Physiography 25

3.2 Indigenous Land Use and Settlement 26

3.3 Historical Euro-Canadian Township Survey and Settlement 28
3.3.1 County of Simcoe 29
3.3.2 Township of Innisfil 30
3.4 Review of Historical Mapping 31
4.0 Existing Conditions 36
4.1 Description of Field Review 36
4.2 Identification of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes 43
5.0 Preliminary Impact Assessment 47
5.1 Description of Proposed Undertaking 47
5.2 Analysis of Potential Impacts 47
6.0 Results and Mitigation Recommendations 49
6.1 Key Findings 49
6.2 Recommendations 49
7.0 References 51

List of Tables

Table 1: Inventory of Potential Cultural Heritage Landscapes within the Study Area 44
Table 2: Preliminary Impact Assessment and Recommended Mitigation Measures 48

List of Figures

Figure 1: Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)) 16
Figure 2: The study area overlaid on the 1871 *Hoggs Map of the County of Simcoe* (Base Map:(Hogg, 1871)). 33
Figure 3: The study area overlaid on the 1881 Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881)). 33
Figure 4: The study area overlaid on the 1928 topographic map of Barrie (Base Map: (Department of National Defence, 1928)). 34
Figure 5: The study area overlaid on the 1943 topographic map of Barrie (Base Map: (Department of National Defence, 1943)). 34
Figure 6: The study area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954)). 35
Figure 7: The study area overlaid on the 1986 topographic map of Barrie (Base Map: (Department of Energy, Mines and Resources, 1986)). 35
Figure 8: Location of the proposed sewage pump station location, identified cultural heritage landscapes (C.H.L.s) and photo locations in the study area. 46

List of Plates

Plate 1: 5th Sideroad, looking north toward intersection with Innisfil Beach Road showing road work at time of field review (ASI, 2022)..... 37
Plate 2: 5th Sideroad, looking south (ASI, 2022)..... 38
Plate 3: 5th Sideroad, looking east showing representative rural agricultural conditions (ASI, 2022) 38

Plate 4: 5th Sideroad, looking north (ASI, 2022) 39
Plate 5: 5th Sideroad, looking south toward intersection with 7th Line (ASI, 2022) 39
Plate 6: 7th Line, looking west from intersection with 5th Sideroad (ASI, 2022) 40
Plate 7: Looking east toward terminus of 7th Line from intersection of 7th Line and 5th Sideroad showing communications tower (ASI, 2022) 40
Plate 8: 5th Sideroad, looking north (ASI, 2022) 41
Plate 9: 5th Sideroad at southern end of study area, looking northeast (ASI, 2022) 41
Plate 10: 5th Sideroad at southern end of study area, looking south (ASI, 2022) . 42
Plate 11: West and south elevation of the residence at 7267 5th Sideroad (A.S.I. 2022) 44
Plate 12: Obstructed view of the property at 7089 5th Sideroad (A.S.I. 2022) 44
Plate 13: West elevation of the house at 6983 5th Sideroad (A.S.I. 2022) 45
Plate 14: The residence and outbuildings on the property at 6982 5th Sideroad (A.S.I. 2022) 45

1.0 Introduction

Archaeological Services Inc. was contracted by Ainley Group, on behalf of InnServices Utilities Inc., to conduct a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment as part of the Innisfil Heights Sewage Pumping Station 2 (I.H. S.P.S. 2) Municipal Class Environmental Assessment. The purpose of this report is to present an inventory of known and potential built heritage resources and cultural heritage landscapes, identify existing conditions of the project study area, provide a preliminary impact assessment, and propose appropriate mitigation measures.

1.1 Project Overview

The I.H. S.P.S. 2 Municipal Class Environmental Assessment is part of the Innisfil Master Servicing Plan (M.S.P.) Update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development. I.H. S.P.S. 2 is one of the proposed sewage pumping stations identified along this sewer route. The project study area consists of several properties on the east and west sides of 5th Sideroad from Innisfil Beach Road to the north to beyond 7th Line in the south. It was expanded to include a small footprint located immediately north of 7th Line to the west of 5th Line following selection of the preferred site location.

1.2 Description of Study Area

This Cultural Heritage Report will focus on the I.H. S.P.S. 2 project study area centered on 5th Sideroad from Innisfil Beach Road in the north to beyond 7th Line in the south, with an additional small footprint located immediately north of 7th Line to the west of 5th Line (Figure 1). This project study area has been defined as inclusive of those lands that may contain built heritage resources or cultural heritage landscapes that may be subject to direct or indirect impacts as a result of

the proposed undertaking. Properties within the study area are located in the Town of Innisfil.



Figure 1: Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA))

2.0 Methodology

The following sections provide a summary of regulatory requirements and municipal and regional heritage policies that guide this cultural heritage assessment. In addition, an overview of the process undertaken to identify known and potential built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) is provided, along with a description of how the preliminary impact assessment will be undertaken.

2.1 Master Servicing Plan Context

The Innisfil Heights Sewage Pumping Station 2 (I.H.S.P.S. 2) Municipal Class Environmental Assessment (M.C.E.A.) is part of the Innisfil Master Servicing Plan (M.S.P.) Update which identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development.

M.S.P.s are long range plans which integrate infrastructure requirements for existing and future land use with Environmental Assessment planning principles. The plans examine the existing infrastructure systems to develop a framework for planning for subsequent projects and developments.

An M.C.E.A. is a process through which municipalities investigate projects related to infrastructure, including transportation, water, wastewater, and stormwater. M.C.E.A.s generally have five phases:

Phase 1, Problem or Opportunity Statement;

Phase 2, Alternative Solutions;

Phase 3, Alternative Design Concepts for Preferred Solution;

Phase 4, Environmental Study Report (E.S.R.); and

Phase 5, Implementation (B.M. Ross & Associates Limited, 2018).

2.2 Regulatory Requirements

The *Ontario Heritage Act* (O.H.A.) (Ontario Heritage Act, R.S.O. c. O.18, 1990 [as Amended in 2023], 1990) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many other provincial acts, regulations and policies governing land use planning and resource development that support heritage conservation, including:

- The *Planning Act* (Planning Act, R.S.O. 1990, c. P.13, 1990), which states that "conservation of features of significant architectural, cultural, historical, archaeological or scientific interest" (cultural heritage resources) is a "matter of provincial interest". The *Provincial Policy Statement* (Ministry of Municipal Affairs and Housing, 2024), issued under the *Planning Act*, links heritage conservation to long-term economic prosperity and requires municipalities and the Crown to conserve significant cultural heritage resources.

- The *Environmental Assessment Act* (Ministry of the Environment, 1990), which defines "environment" to include cultural conditions that influence the life of humans or a community. Cultural heritage resources, which includes archaeological resources, built heritage resources and cultural heritage landscapes, are important components of those cultural conditions.

The Ministry of Citizenship and Multiculturalism (herein after "The Ministry") is charged under Section 2.0 of the O.H.A. with the responsibility to determine policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. Ministry of Citizenship and Multiculturalism (M.C.M.) published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (Ministry of Citizenship and Multiculturalism, 2010) (hereinafter "*Standards and Guidelines*"). These *Standards and Guidelines* apply to properties the Government of Ontario owns or controls that have "cultural heritage value or interest" (C.H.V.I.). The *Standards and Guidelines* provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purpose of this report, the *Standards and Guidelines* provide points of reference to aid in determining potential heritage significance in identification of B.H.R.s and C.H.L.s. While not directly applicable for use in properties not under provincial ownership, the *Standards and Guidelines* are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

Similarly, the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2006b) provides a guide to evaluate heritage properties. To conserve a B.H.R. or C.H.L., the *Ontario Heritage Tool Kit* states that a municipality or approval authority may require a heritage impact assessment and/or a conservation plan to guide the approval, modification, or denial of a proposed development.

2.3 Municipal/Regional Heritage Policies

The study area is located within the Town of Innisfil, in Simcoe County. Policies relating to cultural heritage resources were reviewed from the following sources:

- *"Our Place" Innisfil Official Plan*
- *Official Plan of the County of Simcoe*

2.4 Identification of Built Heritage Resources and Cultural Heritage Landscapes

This Cultural Heritage Report follows guidelines presented in the *Ontario Heritage Tool Kit* (Ministry of Citizenship and Multiculturalism, 2006b) and *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (Ministry of Citizenship and Multiculturalism, 2022). The objective of this report is to present an inventory of known and potential B.H.R.s and C.H.L.s, and to provide a preliminary understanding of known and potential B.H.R.s and C.H.L.s located within areas anticipated to be directly or indirectly impacted by the proposed project.

In the course of the cultural heritage assessment process, all potentially affected B.H.R.s and C.H.L.s are subject to identification and inventory. Generally, when conducting an identification of B.H.R.s and C.H.L.s within a study area, three stages of research and data collection are undertaken to appropriately establish the potential for and existence of B.H.R.s and C.H.L.s in a geographic area: background research and desktop data collection; field review; and identification.

Background historical research, which includes consultation of primary and secondary source research and historical mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth- and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as having cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles or construction methods, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified B.H.R.s and C.H.L.s. The field review is also used to identify potential B.H.R.s and C.H.L.s that have not been previously identified on federal, provincial, or municipal databases or through other appropriate agency data sources.

During the cultural heritage assessment process, a property is identified as a potential B.H.R. or C.H.L. based on research, the Ministry screening tool, and professional expertise and best practice. In addition, use of a 40-year-old benchmark is a guiding principle when conducting a preliminary identification of B.H.R.s and C.H.L.s. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this benchmark provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from having cultural heritage value or interest.

2.5 Background Information Review

To make an identification of previously identified known or potential B.H.R.s and C.H.L.s within the study area, the following sections present the resources were consulted as part of this Cultural Heritage Report.

2.5.1 Review of Existing Heritage Inventories

A number of resources were consulted in order to identify previously identified B.H.R.s and C.H.L.s within the study area. These resources, reviewed on 13 and 15 September 2021, include:

- The Town of Innisfil's Municipal Heritage Register (Town of Innisfil, n.d.b);
- Historical maps (including historical atlases, topographic maps, and aerial photography);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust, n.d.b);
- The *Places of Worship Inventory* (Ontario Heritage Trust, n.d.c);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust, n.d.a);
- The Ontario Heritage Trust's *An Inventory of Provincial Plaques Across Ontario*: a PDF of Ontario Heritage Trust Plaques and their locations (Ontario Heritage Trust, 2023);
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society's online databases (Ontario Genealogical Society, n.d.);
- Canada's Historic Places website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels (Parks Canada, n.d.a);
- Directory of Federal Heritage Designations: a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada, n.d.b);
- Canadian Heritage River System: a national river conservation program that promotes, protects and enhances the best examples of Canada's river

heritage (Canadian Heritage Rivers Board and Technical Planning Committee, n.d.); and,

- United Nations Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) World Heritage Sites (U.N.E.S.C.O. World Heritage Centre, n.d.).

2.5.2 Review of Previous Heritage Reporting

Additional cultural heritage studies were sought for review, however, no previous studies within the study area were identified.

2.5.3 Information Gathering

The following individuals, groups, and/or organizations were contacted to gather information on known and potential B.H.R.s and C.H.L.s, active and inactive cemeteries, and areas of identified Indigenous interest within the study area:

- Gaelen Pierce, Planner/Placemaker, Town of Innisfil (email communication 20 December 2021 and 21 and 22 March 2022). A response confirmed that there are no previously identified B.H.R.s or C.H.L.s within the study area.
- The Ministry (email communication 20 and 29 December 2021). Email correspondence confirmed that, to date, no properties within or adjacent to the study area have been designated by the Minister and that they have no records of any Provincial Heritage Property within or adjacent to the study area.
- The Ontario Heritage Trust (email communications 21 September 2021). A response on 30 November 2021 confirmed that there are no previously identified heritage resources or concerns regarding the study area.

2.6 Community Engagement

Indigenous Nations Engagement for this project is being completed by Ainley Group to Indigenous Nations that have an interest in this study area. No feedback

had been received by Ainley Group regarding the Cultural Heritage Report for this project at the time of report finalization (August 2025).

This Cultural Heritage Report was submitted to the Town of Innisfil for review and comment on July 18, 2025. No comments were provided following their review (Ainley Group email communication July 31, 2025). No additional stakeholder comments were received prior to report finalization.

2.7 Preliminary Impact Assessment Methodology

To assess the potential impacts of the undertaking, identified B.H.R.s and C.H.L.s are considered against a range of possible negative impacts, based on the *Ontario Heritage Tool Kit InfoSheet #5: Heritage Impact Assessments and Conservation Plans* (Ministry of Citizenship and Multiculturalism, 2006c). These include:

Direct impacts:

- Destruction of any, or part of any, significant heritage attributes or features; and
- Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.

Indirect impacts:

- Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
- Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
- Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
- A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces; and

- Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

Indirect impacts from construction-related vibration have the potential to negatively affect B.H.R.s and C.H.L.s depending on the type of construction methods and machinery selected for the project and proximity and composition of the identified resources. Potential vibration impacts are defined as having potential to affect an identified B.H.R.s and C.H.L.s where work is taking place within 50 metre of features on the property. A 50 metre buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature and direction provided from the M.H.S.T.C.I. (Carman et al., 2012; Crispino & D'Apuzzo, 2001; P. Ellis, 1987; Rainer, 1982; Wiss, 1981). This buffer accommodates any additional or potential threat from collisions with heavy machinery or subsidence (Randl, 2001).

Several additional factors are also considered when evaluating potential impacts on identified B.H.R.s and C.H.L.s. These are outlined in a document set out by the Ministry of Culture and Communications (now Ministry of Citizenship and Multiculturalism) and the Ministry of the Environment entitled *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992). While this document has largely been superseded in some respects by more current policies and legislation, the guidance provided that continues to be of relevance to this specific project includes the following definitions:

- Magnitude: the amount of physical alteration or destruction which can be expected;
- Severity: the irreversibility or reversibility of an impact;
- Duration: the length of time an adverse impact persists;
- Frequency: the number of times an impact can be expected;
- Range: the spatial distribution, widespread or site specific, of an adverse impact; and
- Diversity: the number of different kinds of activities to affect a heritage resource.

The proposed undertaking should endeavor to avoid adversely affecting known and potential B.H.R.s and C.H.L.s and interventions should be managed in such a way that identified significant cultural heritage resources are conserved. When the nature of the undertaking is such that adverse impacts are unavoidable, it may be necessary to implement alternative approaches or mitigation strategies that alleviate the negative effects on identified B.H.R.s and C.H.L.s. Mitigation is the process of lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the B.H.R. or C.H.L. if to be demolished or relocated.

Various works associated with infrastructure improvements have the potential to affect B.H.R.s and C.H.L.s in a variety of ways, and as such, appropriate mitigation measures for the undertaking need to be considered.

3.0 Summary of Historical Development Within the Study Area

This section provides a brief summary of historical research. A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, Indigenous land use, and Euro-Canadian settlement.

3.1 Physiography

The study area is situated within the Peterborough Drumlin Field physiographic region of southern Ontario (Chapman & Putnam, 1984). The Peterborough Drumlin Field extends from Simcoe County east to Hastings County and is generally characterized by rolling till plains overlying limestone bedrock and contains over 3,000 drumlins ((Chapman & Putnam, 1984)). The drumlins are composed of highly calcareous till but there are local differences in composition. The till plains of the regions were formed during the retreat of the Lake Ontario ice lobe of the Laurentide glacier. Till is produced from the advance of continental

glacial ice in which soil and rock is carried forward by the ice, mixed and milled, producing a heterogeneous soil (Chapman & Putnam, 1984). The rolling topography of the study area is representative of the drumlin and till formations of this physiographic region. The agricultural history of the area can be connected to the till plains formed through glacial movement.

3.2 Indigenous Land Use and Settlement

Current archaeological evidence indicates humans were present in southern Ontario approximately 13,000 years before present (BP) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (C. J. Ellis & Deller, 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 BP and is interpreted by archaeologists to be indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; C. J. Ellis et al., 1990, 2009).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately

2,000 BP, evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 CE, archaeological research focusing on these horticultural societies note that this episodic community dispersal was no longer practised and these populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities thought to house several thousand people (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to harvest available resources across landscapes they returned to seasonally/annually.

By 1600 CE, the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. By the 1640s, devastating epidemics

and the traditional enmity between the Haudenosaunee[1] and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century.

The study area is within the Nottawasaga Purchase, or Treaty No. 18, signed 1818 by representatives of the Crown and Anishinaabe peoples. This treaty, also known as the Lake Simcoe-Nottawasaga Treaty, included lands in modern-day Innisfil, Wasaga, Bradford, and Collingwood (Ministry of Indigenous Affairs, 2019).

3.3 Historical Euro-Canadian Township Survey and Settlement

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes continued the use of existing Indigenous trails that typically followed the highlands adjacent to various creeks and rivers (Archaeological Services Inc., 2006). Early European settlements occupied similar locations as Indigenous settlements as they were generally accessible by trail or

[1] The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian–speaking nations - the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.

water routes and would have been in locations with good soil and suitable topography to ensure adequate drainage.

Throughout the period of initial European settlement, Indigenous groups continued to inhabit Southern Ontario, and continued to fish, gather, and hunt within their traditional and treaty territories, albeit often with legal and informal restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to Euro-Canadian settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

Historically, the study area is located in the Township of Innisfil, County of Simcoe in part of Lots 5 and 6, Concession 6 and Lots 5 and 6, Concession 7.

3.3.1 County of Simcoe

The area within what is now Simcoe County was first inhabited by the Indigenous Huron-Wendat. European goods reached the area before 1600 and missionaries and Jesuits arrived soon after. In 1798, the County of Simcoe was formed as part of the “Home District.” The boundaries of the county were refined in 1821. Almost 20 years later, in 1843, the area was declared a separate district and attained county status in 1850, with Barrie as the county seat. At this time Simcoe County included portions of Grey and Dufferin Counties, and Muskoka and Parry Sound Districts. In 1881, the borders of Simcoe County were again redefined and the present townships of Tiny, Tay, Matchedash, Flos, Medonte, Orillia, Nottawasaga, Sunnidale, Vespra, Oro, Tosorontio, Essa, Innisfil, Adjala, Tecumseth, and West Gwillimbury were contained within. As of the late twentieth

century, Simcoe County had two cities, seven towns, and eight villages (Mika & Mika, 1983).

3.3.2 Township of Innisfil

The Township of Innisfil was surveyed in 1820 and the first settlement began that year. The township was named after the poetical name for Ireland, Innis Fáil, by its early settlers. Growth was slow during the first ten years of the township and the first sawmill was not erected until the 1830s and in 1835 a grist mill was constructed. Early settlement focused around Kempenfelt Bay and the southwestern area of the township was not settled until after 1840. By 1843, the first school was constructed and the following year the Innisfil Methodist Congregation built the first church. The first census of the township recorded a population of only 762 inhabitants. By 1850, the township had a population of 1,807.

Following the connection of the Ontario Simcoe and Huron Union Railway in 1853, the township became an important shipping hub for the lumber industry of central Ontario (Mika & Mika, 1981). With the arrival of the railway a number of communities developed and prospered; Allandale, Lefroy, and Craigvale all boasted stations. On the western border of the township, Thornton was a stop for the Hamilton and Northwestern Railway. Today, Innisfil attracts large numbers of tourists and cottagers in the summertime who travel from Toronto via Highway 400 (Mika & Mika, 1981).

The historic crossroads community of Killyleagh was located near the study area at the intersection of 5th Sideroad and 6th Line. Killyleagh was settled in 1853 by the Scoggie, Grey, and Sharpe families who emigrated from County Sligo, Ireland. The Killyleagh Post Office was opened near the northeast corner of the crossroads in July 1879, with George Sharpe appointed as postmaster, operating until 1903. A log school was built in 1857 just west of the intersection on 6th Line. The structure was renovated and bricked in 1910 and remains in its original location (Archaeological Services Inc., 2019; Town of Innisfil, n.d.-a).

3.4 Review of Historical Mapping

The 1871 *Map of the County of Simcoe* (Hogg, 1871) and the 1881 *Illustrated Historical Atlas of the County of Simcoe* (Belden, 1881) were examined to determine the presence of historical features within the study area during the nineteenth century (Figure 2 and Figure 3). Historically, the study area is located in parts of Lots 5 and 6, Concession 6 and Lots 5 and 6, Concession 7 in the Township of Innisfil, County of Simcoe.

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

In the nineteenth century, the study area is shown to be within a rural, agricultural context. Mapping from 1871 shows no structures in the study area. Innisfil Beach Road and 7th Line are depicted as historically surveyed roads, following similar alignments to their present orientations with 5th Sideroad bisecting the study area, in a straight line, from north to south (Figure 2). Mapping from 1881 depicts the roads following the same alignments as in previous mapping, with no structures within the study area. (Figure 3).

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1928, 1943, 1954, and 1986 (Figure 4 to Figure 7). These do not represent the full range of maps consulted for the

purpose of this study but were judged to cover the full range of land uses that occurred in the area during this period.

The 1928 topographic map of Barrie shows some development within the study area. The addition of several farmsteads located sporadically along unmetalled roads show its continued rural, agricultural setting. Several of these farmsteads' structures appear to occupy similar positions to extant structures, including those at 7267, 7089, 6982, and 6983 5th Sideroad. 5th Sideroad is illustrated as following its present alignment, jogging slightly to the east approximately halfway between Innisfil Beach Road and 7th Line. A hydro electric power line follows 5th Sideroad, and telephone or telegraph lines follow the south side of Innisfil Beach Road and the east side of 5th Sideroad north of 7th Line. South of 7th Line, the telephone lines appear to follow the west side of 5th Sideroad. East of the study area, the post office illustrated in earlier mapping is absent, however a house and barn occupy a similar location (Figure 4). Later topographic mapping in 1943 shows the study area remaining much the same with no new structures. Innisfil Beach Road is now depicted as a paved secondary road, and the hydro electric power lines are shown to be on wood poles, running along the east side of 5th Sideroad (Figure 5).

In 1954 aerial photography, the study area is shown to have remained mostly unchanged and has retained its rural context (Figure 6). By the late twentieth century, some additional development can be seen at the southeast corner of 5th Sideroad and 7th Line with 7th Line now terminating in a T-intersection. A river crosses the study area from east to west just north of 7th line and another can be seen crossing 5th Sideroad, approximately halfway between Innisfil Beach Road and 7th Line from west to east before turning north near the eastern boundary of the study area (Figure 7).

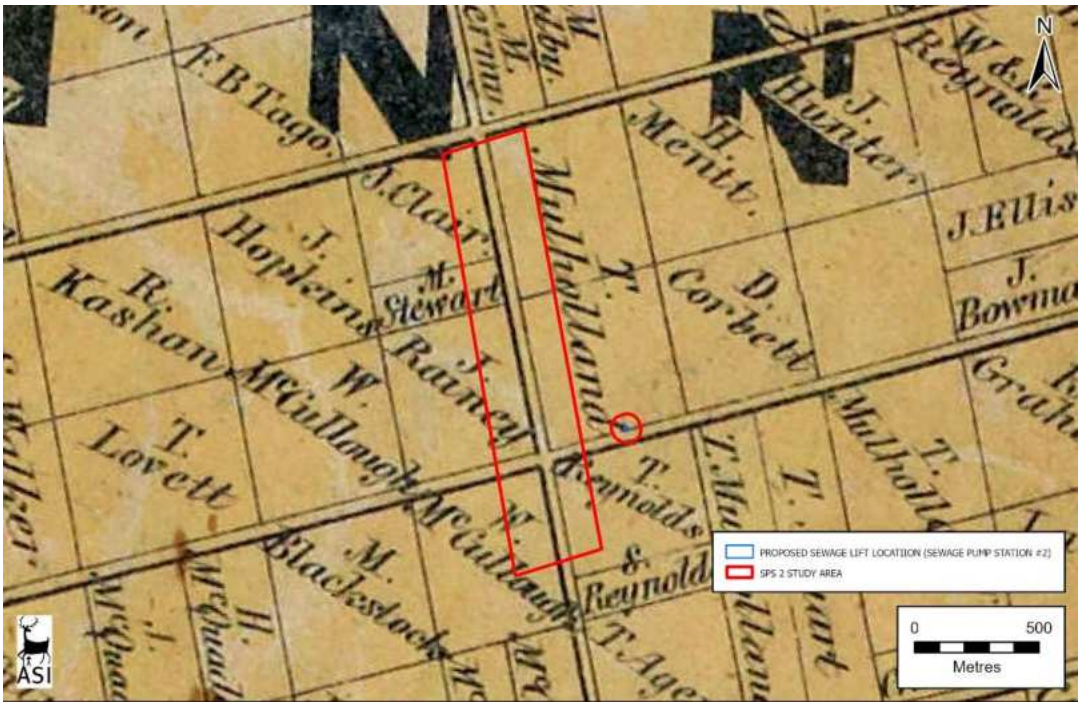


Figure 2: The study area overlaid on the 1871 *Hoggs Map of the County of Simcoe* (Base Map:(Hogg, 1871)).

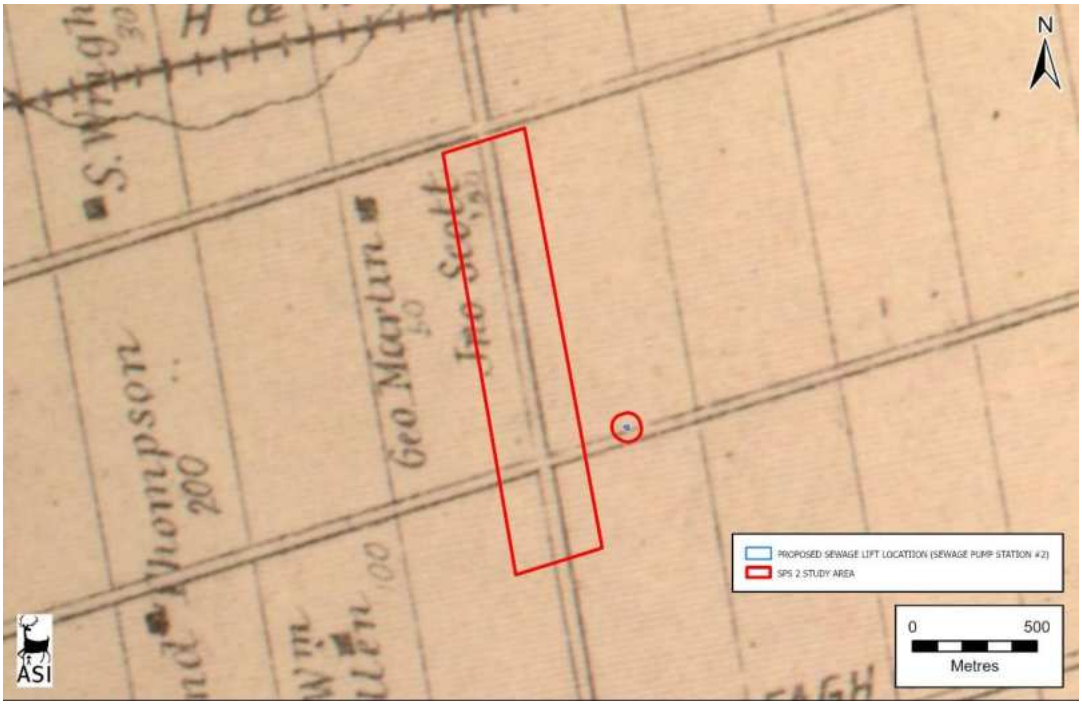


Figure 3: The study area overlaid on the 1881 Historical Atlas of the County of Simcoe (Base Map: (Belden, 1881)).

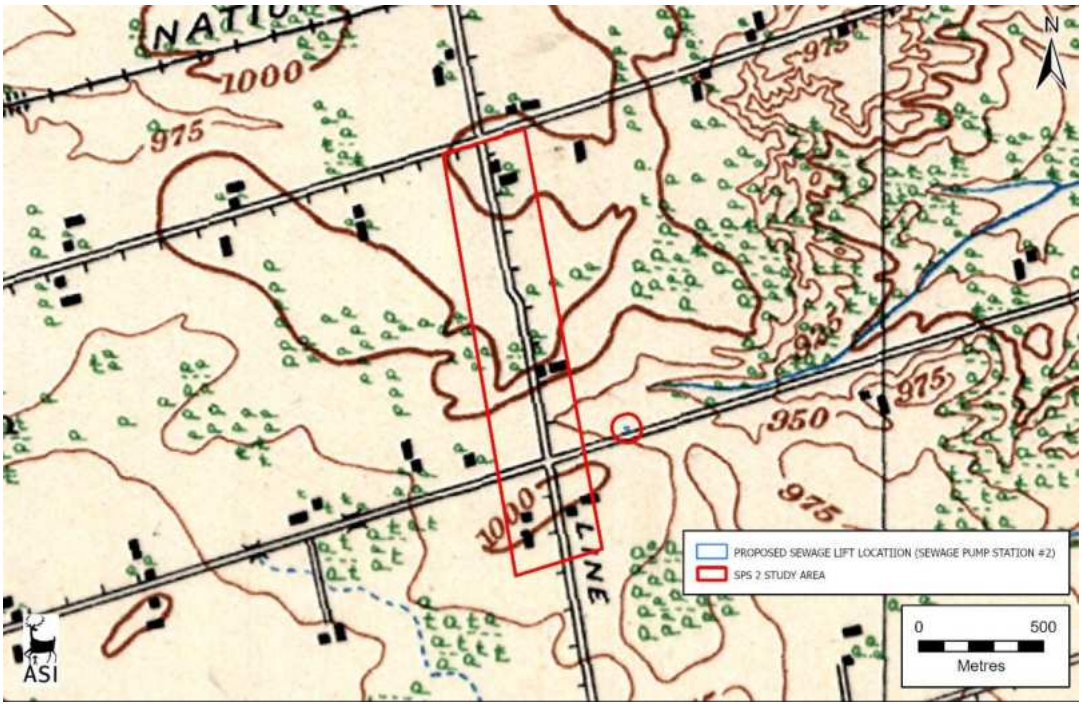


Figure 4: The study area overlaid on the 1928 topographic map of Barrie (Base Map: (Department of National Defence, 1928)).

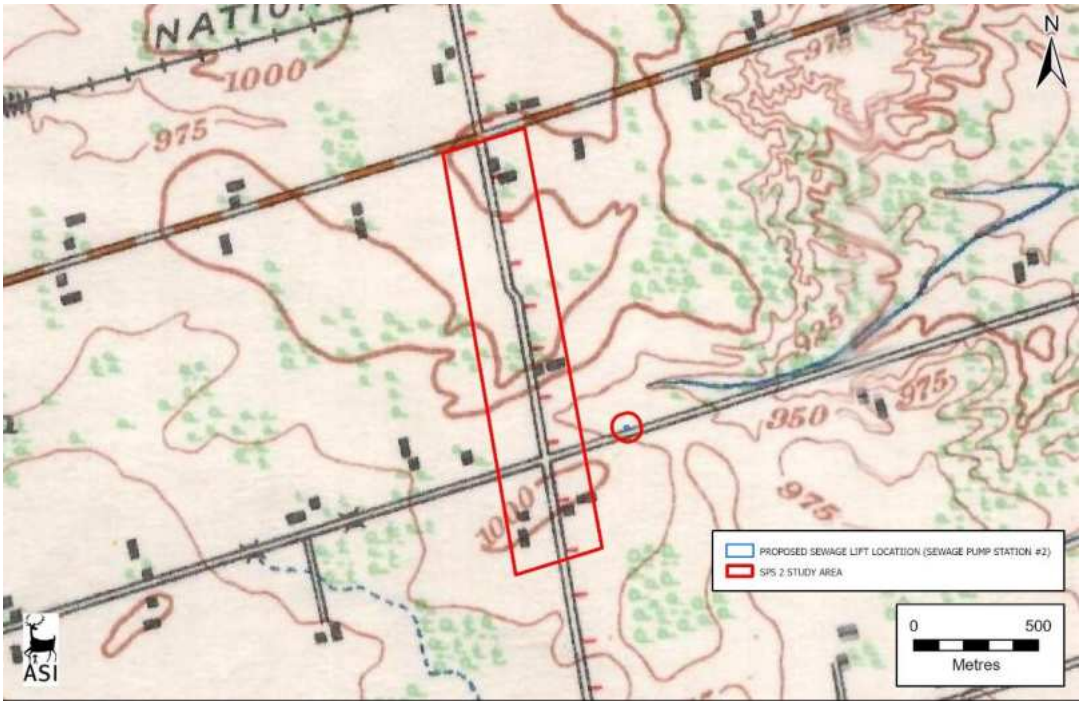


Figure 5: The study area overlaid on the 1943 topographic map of Barrie (Base Map: (Department of National Defence, 1943)).

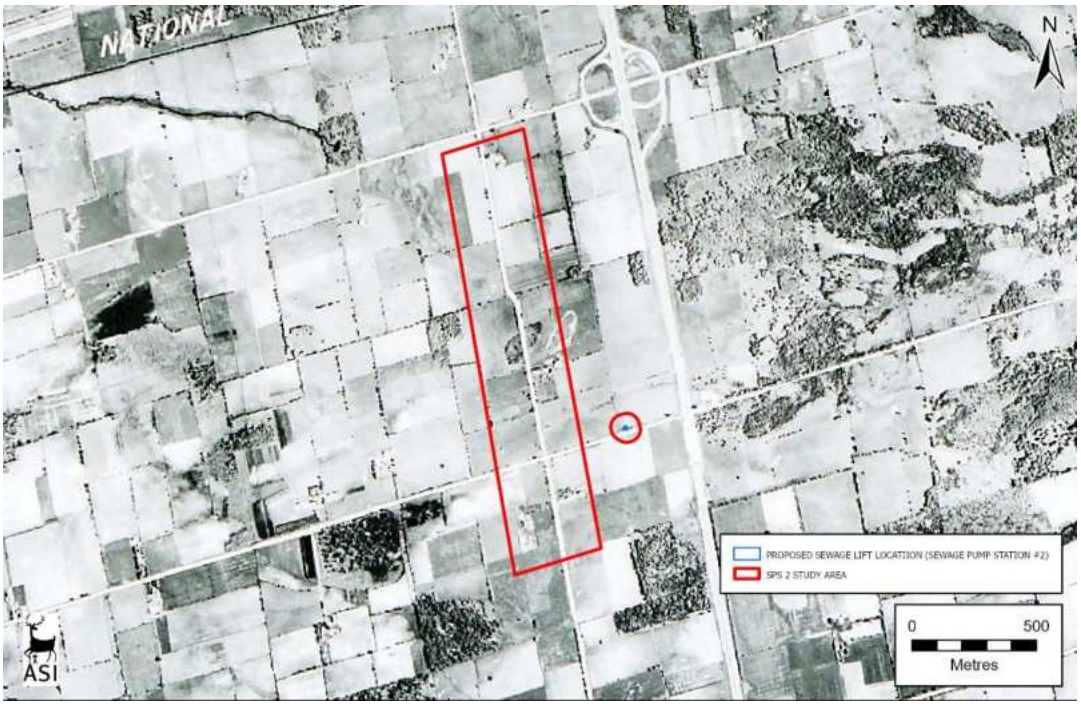


Figure 6: The study area overlaid on the 1954 aerial photograph of Innisfil (Base Map: (Hunting Survey Corporation Limited, 1954)).

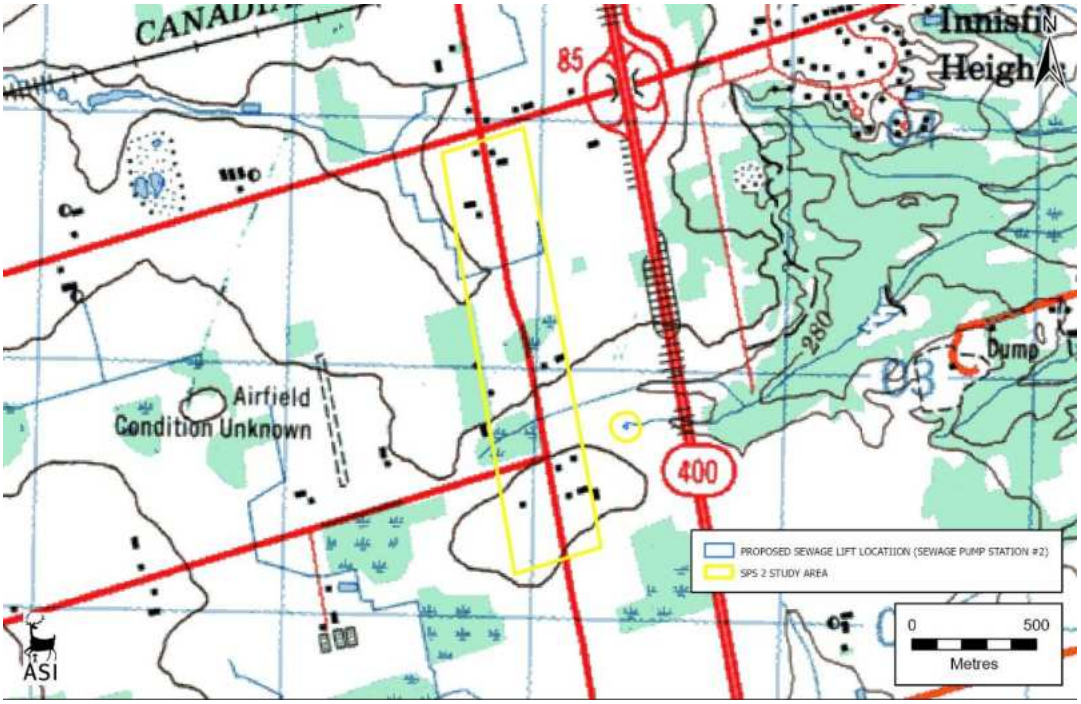


Figure 7: The study area overlaid on the 1986 topographic map of Barrie (Base Map: (Department of Energy, Mines and Resources, 1986)).

4.0 Existing Conditions

A field review of the study area was undertaken by Meredith Stewart of Archaeological Services Inc., on 21 September 2021 to document the existing conditions of the study area from existing rights-of-way. The existing conditions of the study area are described below and captured in Plate 1 to Plate 10.

4.1 Description of Field Review

The study area consists of a portion of 5th Sideroad located between Innisfil Beach Road in the north and just south of 7th Line. Generally, residences within the study area are sparse and not concentrated in any particular area and hydro lines run along the east side of the road throughout the length of the study area.

The intersection of 5th Sideroad and Innisfil Beach Road at the northern boundary of the study area is in a rural, agricultural context. The intersection has traffic lights with Innisfil Beach Road carrying two lanes of east-west traffic to the west and four lanes to the east toward the interchange with Highway 400 (Plate 1).

At the time of the field review, there was active roadwork in progress throughout the study area. As a result, large portions of the shoulders were dug up and traffic was reduced to one lane for a large section of 5th Sideroad (Plate 2). The study area can generally be described as a rural context, with areas of agricultural land use (Plate 3). 5th Sideroad is a north-south running roadway that features one lane of traffic in each direction with gravel shoulders and intermittent drainage ditches running along its west side (Plate 4 and Plate 5).

The intersection of 5th Sideroad and 7th Line in the southern portion of the study area continues in a rural agricultural context, with 7th Line carrying one lane of east-west traffic with gravel shoulders west of 5th Sideroad (Plate 6). East of 5th Sideroad, 7th line becomes a gravel road, terminating just beyond the eastern boundary of the study area near a large communications tower on the road's north side (Plate 7). The intersection is controlled with stop signs and the northeastern corner is occupied by a storage area for a large construction and

farming equipment supplier. The preferred site location is in this area north of 7th Line, in an agricultural field adjacent to farming equipment supplier east of 5th Sideroad.

The south end of the study area has some small woodlots on both sides of 5th Sideroad (Plate 8). The southern boundary of the study area continues in a rural context with surrounding fields showing signs of active agricultural use (Plate 9 and Plate 10).



Plate 1: 5th Sideroad, looking north toward intersection with Innisfil Beach Road showing road work at time of field review (ASI, 2022)



Plate 2: 5th Sideroad, looking south (ASI, 2022)



Plate 3: 5th Sideroad, looking east showing representative rural agricultural conditions (ASI, 2022)



Plate 4: 5th Sideroad, looking north (ASI, 2022)



Plate 5: 5th Sideroad, looking south toward intersection with 7th Line (ASI, 2022)



Plate 6: 7th Line, looking west from intersection with 5th Sideroad (ASI, 2022)



Plate 7: Looking east toward terminus of 7th Line from intersection of 7th Line and 5th Sideroad showing communications tower (ASI, 2022)



Plate 8: 5th Sideroad, looking north (ASI, 2022)



Plate 9: 5th Sideroad at southern end of study area, looking northeast (ASI, 2022)



Plate 10: 5th Sideroad at southern end of study area, looking south (ASI, 2022)

4.2 Identification of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes

Based on the results of the background research and field review, four potential Cultural Heritage Landscapes (C.H.L.s) were Identified within the study area. The preferred site location, identified in March 2025, is not within any of these identified B.H.R.s or C.H.L.s. See Figure 8 for study area mapping.

Table 1: Inventory of Potential Cultural Heritage Landscapes within the Study Area

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential C.H.V.I.	Photographs/ Digital Image
C.H.L. 1	Farmstead	7267 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L contains a farmstead/rural property: The farmstead property (Plate 11) is located on the east side of 5th Sideroad. The one-and-a-half storey red brick, Gothic Revival Cottage has a T-shaped footprint, cross-gabled roof and frame addition at the rear of the structure. Potential heritage attributes include its height and massing, cross-gabled roof, fenestration, belt course, and verandah. The property also features mature trees on the property. The 1928 topographic map shows a residence and barn in this general location (Figure 4).	 Plate 11: West and south elevation of the residence at 7267 5th Sideroad (A.S.I. 2022)
C.H.L. 2	Farmstead	7089 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L contains a farmstead/rural property: The farmstead property (Plate 12) is located on the east side of 5th Sideroad. The two-storey, red brick house has a cross-gabled roof and additions on the south and east elevations. Potential heritage attributes include its height and massing, fenestration, and cross-gabled roof. The property also features a barn, outbuildings, orchard, and mature trees. The 1928 topographic map shows a residence and barn in this general location (Figure 4).	 Plate 12: Obstructed view of the property at 7089 5th Sideroad (A.S.I. 2022)

Feature I.D.	Type of Property	Address or Location	Heritage Status and Recognition	Description of Property and Known or Potential C.H.V.I.	Photographs/ Digital Image
C.H.L. 3	Farmstead	6983 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L contains a farmstead/rural property: The farmstead property (Plate 13) is located on the east side of 5th Sideroad. The one-and-a-half-storey house has a rectangular footprint, gabled roof, large addition on the rear of the structure, and a small frame addition on the south side. Possible heritage attributes include the structure's height, massing, fenestration, and gabled roof. The property also features a large wooden A-frame barn, livestock housing, tower silo, several outbuildings, and mature trees. The 1928 topographic map shows a residence and barn in this general location (Figure 4).	 Plate 13: West elevation of the house at 6983 5th Sideroad (A.S.I. 2022)
C.H.L. 4	Farmstead	6982 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	The potential C.H.L contains a farmstead/rural property: The farmstead property (Plate 14) is located on the west side of 5th Sideroad. The residence is a two-storey frame structure with a rectangular footprint and gable roof with single-storey additions on the south and east elevations. Possible heritage attributes include the structure's height, massing, fenestration, and gabled roof. The property also features several barns, outbuildings, mature trees and treelines, and active agricultural fields. The 1928 topographic map shows a residence and barn in this general location (Figure 4).	 Plate 14: The residence and outbuildings on the property at 6982 5th Sideroad (A.S.I. 2022)

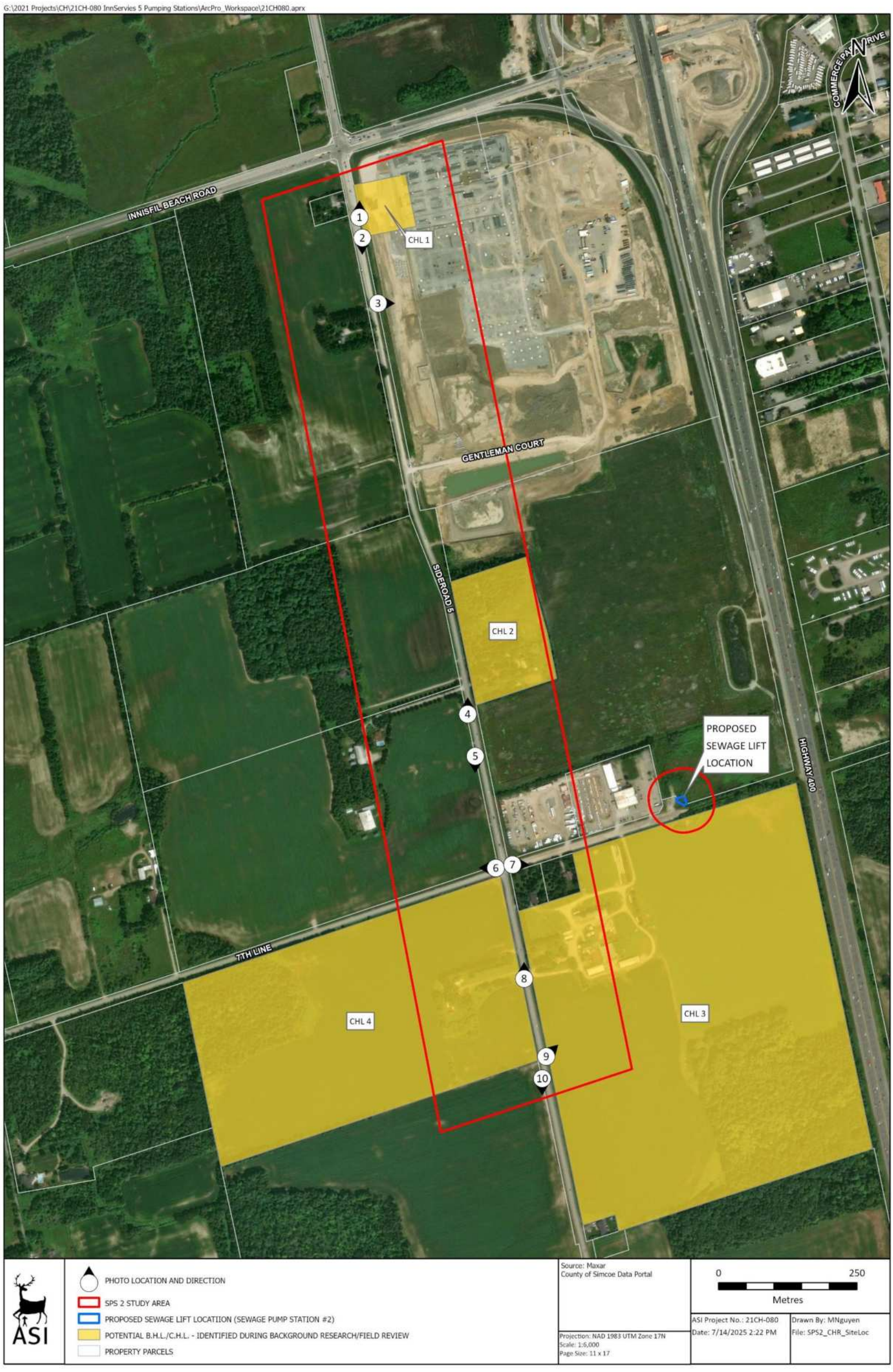


Figure 8: Location of the proposed sewage pump station location, identified cultural heritage landscapes (C.H.L.s) and photo locations in the study area.

5.0 Preliminary Impact Assessment

The following sections provide more detailed information regarding the proposed project undertaking and analysis of the potential impacts on identified cultural heritage landscapes (C.H.L.s).

5.1 Description of Proposed Undertaking

The Innisfil Master Servicing Plan (M.S.P.) update identifies various alternatives to provide servicing to the Innisfil Heights economic district, an area designated as a Strategic Settlement Employment Area. The M.S.P. identified a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road for the first phase of development. Innisfil Heights Sewage Pumping Station (I.H. S.P.S.) 2 is one of the proposed sewage pumping stations identified along this sewer route.

The proposed undertaking for the I.H. S.P.S. 2 study area consists of the construction of a sewage pumping station on the southern edge of the property at 7131 5th Sideroad, Town of Innisfil. This pumping station will connect to the existing Lakeshore wastewater system to facilitate additional wastewater management capacity. The preferred S.P.S. location was selected to avoid the potential C.H.L.s identified in the interim Cultural Heritage Report: Existing Conditions, prepared by Archeological Services Inc in April 2022.

5.2 Analysis of Potential Impacts

Table 2 outlines the potential impacts on all identified C.H.L.s within the study area.

Table 2: Preliminary Impact Assessment and Recommended Mitigation Measures

Feature I.D.	Location/Name	Heritage Status and Recognition	Type and Description of Potential/Anticipated Impact	Mitigation Strategies
C.H.L. 1	7267 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed sewage pumping station construction will be confined to the southern edge of 7131 5th Sideroad. Therefore, no direct or indirect impacts are anticipated as C.H.L. 1 is not within 50 metres of the proposed construction site.	No further work required.
C.H.L. 2	7089 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed sewage pumping station construction will be confined to the southern edge of 7131 5th Sideroad. While C.H.L. 2 is adjacent to the property at 7131 5th Sideroad, no direct or indirect impacts are anticipated as 7267 5th Sideroad is not within 50 metres of the proposed construction site.	No further work required.
C.H.L. 3	6983 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed sewage pumping station construction will be confined to the southern edge of 7131 5th Sideroad. While C.H.L. 3 is adjacent to the property at 7131 5th Sideroad, no direct or indirect impacts are anticipated as the cultural heritage attributes identified on the property at 6983 5th Sideroad are located more than 50 metres from all proposed construction work.	No further work required.
C.H.L. 4	6982 5th Sideroad	Potential C.H.L. – Identified during field review/desktop research	It is understood that the proposed sewage pumping station construction will be confined to the southern edge of 7131 5th Sideroad. Therefore, no direct or indirect impacts are anticipated as C.H.L. 4 is not within 50 metres of the proposed construction site.	No further work required.

6.0 Results and Mitigation Recommendations

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an Indigenous history spanning millennia and a rural land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are no previously identified features of cultural heritage value or interest within the Innisfil Heights Sewage Pumping Station 2 (I.H. S.P.S. 2) study area. Four additional cultural heritage landscapes (C.H.L.s) were identified during the fieldwork.

6.1 Key Findings

The following provides a brief summary of the findings within the study area:

- Four potential C.H.L.s were Identified within the I.H. S.P.S. 2 study area.
- All four potential C.H.L.s were identified during field review and desktop research.
- Identified cultural heritage resources are historically, architecturally, and contextually associated with land use patterns in the Town of Innisfil and more specifically representative of the early and continued settlement on 5th Sideroad.

Results of Preliminary Impact Assessment

- The preferred alternative is not anticipated to result in direct or indirect adverse impacts to any C.H.L.s.

6.2 Recommendations

Based on the results of the assessment, the following recommendations have been developed:

1. Construction activities and staging should be suitably planned and undertaken to avoid unintended negative impacts to identified built heritage resources and cultural heritage landscapes. Avoidance

measures may include, but are not limited to: erecting temporary fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc.

2. 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 heritage resources.

3. The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted to the Town of Innisfil 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. The final report should be submitted to the Town of Innisfil for their records.

7.0 References

Archaeological Services Inc. (2006). *Historical Overview and Assessment of Archaeological Potential Don River Watershed, City of Toronto*.

Archaeological Services Inc. (2019). *County of Simcoe Archaeological Management Plan*. Report on file with the County of Simcoe.

Belden, H. (1881). *Illustrated Historical Atlas of the County of Simcoe* [Map]. H. Belden & Co.

Birch, J., Manning, S. W., Sanft, S., & Conger, M. A. (2021). Refined Radiocarbon Chronologies for Northern Iroquoian Site Sequences: Implications for Coalescence, Conflict, and the Reception of European Goods. *American Antiquity*, *86*(1), 61–89.

Birch, J., & Williamson, R. F. (2013). *The Mantle Site: An Archaeological History of an Ancestral Wendat Community*. Rowman & Littlefield Publishers, Inc.

Brown, J. (1995). On Mortuary Analysis – with Special Reference to the Saxe-Binford Research Program. In L. A. Beck (Ed.), *Regional Approaches to Mortuary Analysis* (pp. 3–23). Plenum Press.

Canadian Heritage Rivers Board and Technical Planning Committee. (n.d.). *The Rivers – Canadian Heritage Rivers System Canada's National River Conservation Program*. Canadian Heritage Rivers System. http://chrs.ca/en/rivers/

Carman, R. A., Buehler, D., Mikesell, S., & Searls, C. L. (2012). *Current Practices to Address Construction Vibration and Potential Effects to Historic Buildings Adjacent to Transportation Projects*. Wilson, Ihrig and Associates, ICF International, and Simpson, Gumpertz and Heger, Incorporated for the American Association of State Highway and Transportation Officials (AASHTO).

Chapman, L. J., & Putnam, F. (1984). *The Physiography of Southern Ontario* (3rd ed., Vol. 2). Ontario Ministry of Natural Resources.

Copway, G. (1850). *The Traditional History and Characteristic Sketches of the Ojibway Nation*. Charles Gilpin.

Crispino, M., & D'Apuzzo, M. (2001). Measurement and Prediction of Traffic-induced Vibrations in a Heritage Building. *Journal of Sound and Vibration*, *246*(2), 319–335.

Department of Energy, Mines and Resources. (1986). *Barrie Sheet 31D/5* [Map].

Department of National Defence. (1928). *Barrie, Ontario. Map Sheet 031D05* (1st ed.) [Topographic Map].

Department of National Defence. (1943). *Barrie Sheet* [Map]. http://geo2.scholarsportal.info/#r/details/_uri@=HTDP63360K031D05_1943TIFF&_add:true

Dodd, C. F., Poulton, D. R., Lennox, P. A., Smith, D. G., & Warrick, G. A. (1990). The Middle Ontario Iroquoian Stage. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 321–360). Ontario Archaeological Society Inc.

Edwards, T. W. D., & Fritz, P. (1988). Stable-Isotope Paleoclimate Records from Southern Ontario, Canada: Comparison of Results from Marl and Wood. *Canadian Journal of Earth Sciences*, *25*, 1397–1406.

Ellis, C. J., & Deller, D. B. (1990). Paleo-Indians. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 37–64). Ontario Archaeological Society Inc.

Ellis, C. J., Kenyon, I. T., & Spence, M. W. (1990). The Archaic. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 65–124). Ontario Archaeological Society Inc.

Ellis, C. J., Timmins, P. A., & Martelle, H. (2009). At the Crossroads and Periphery: The Archaic Archaeological Record of Southern Ontario. In T. D. Emerson, D. L. McElrath, & A. C. Fortier (Eds.), *Archaic Societies: Diversity and*

Complexity across the Midcontinent. (pp. 787–837). State University of New York Press.

Ellis, P. (1987). Effects of Traffic Vibration on Historic Buildings. *The Science of the Total Environment*, *59*, 37–45.

Ferris, N. (2013). Place, Space, and Dwelling in the Late Woodland. In M. K. Munson & S. M. Jamieson (Eds.), *Before Ontario: The Archaeology of a Province* (pp. 99–111). McGill-Queen's University Press. http://www.jstor.org/stable/j.ctt32b7n5.15

Fox, W. (1990). The Odawa. In *The Archaeology of Southern Ontario to A.D. 1650* (Vol. 5, pp. 457–473). Ontario Archaeological Society.

Hogg, J. (1871). *Hogg's Map of the County of Simcoe* [Map].

Hunting Survey Corporation Limited. (1954). *1954 Air Photos of Southern Ontario* [Graphic]. https://mdl.library.utoronto.ca/collections/air-photos/1954-air-photos-southern-ontario/index

Langton, H. H., & Ganong, W. F. (Eds.). (1971). *The Works of Samuel De Champlain: 1629-1632* (H. P. Biggar, Trans.; Reprint from 1936, Vol. 6). The Champlain Society; Internet Archive. https://archive.org/details/worksofsamueldec06chamuoft/page/n7/mode/2up

Mika, N., & Mika, H. (1981). *Places In Ontario: Their Name Origins and History, Part II, F-M* (https://archive.org/details/placesinontariot0002mika; Vol. 2). Mika Publishing Company; Internet Archive.

Mika, N., & Mika, H. (1983). *Places In Ontario: Their Name Origins and History, Part III, N-Z* (https://archive.org/details/placesinontariot0003mika). Mika Publishing Company; Internet Archive.

Ministry of Citizenship and Multiculturalism. (2006a). *Heritage Resources in the Land Use Planning Process: Info Sheet #5, Heritage Impact Assessments and Conservation Plans*.

http://www.mtc.gov.on.ca/en/publications/Heritage_Tool_Kit_Heritage_PPS_infoSheet.pdf

Ministry of Citizenship and Multiculturalism. (2006b). *Ontario Heritage Tool Kit*.

Ministry of Citizenship and Multiculturalism. (2010). *Standards and Guidelines for Conservation of Provincial Heritage Properties: Standards & Guidelines*.

Ministry of Citizenship and Multiculturalism. (2022). *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, A Checklist for the Non-Specialist*.
http://www.mtc.gov.on.ca/en/heritage/tools.shtml

Ministry of Citizenship and Multiculturalism, M. C. M. (2006c). *InfoSheet #5: Heritage Impact Assessments and Conservation Plans*.

Ministry of Citizenship and Multiculturalism, & Ministry of the Environment. (1992). *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments*.

Ministry of Indigenous Affairs. (2019). *Treaties in Ontario: Nottawasaga Purchase Treaty 18*. https://www.ontario.ca/page/map-ontario-treaties-and-reserves#treaties

Ministry of Municipal Affairs and Housing. (2024). *Provincial Policy Statement, 2024, Under the Planning Act*. Queen's Printer for Ontario.

Ministry of the Environment. (1990). *Environmental Assessment Act, R.S.O. c. E.18*.

Ontario Genealogical Society. (n.d.). *OGS Cemeteries*. Digitals Collections & Library Catalogue. http://vitacollections.ca/ogscollections/2818487/data

Ontario Heritage Act, R.S.O. c. O.18, 1990 [as Amended in 2021] (1990).

Ontario Heritage Trust. (2023). *An Inventory of Provincial Plaques Across Ontario*. https://www.heritagetrust.on.ca/user_assets/documents/Inventory-of-provincial-plaques-ENG.pdf

Ontario Heritage Trust. (n.d.a). *Easement Properties*. Ontario Heritage Trust. https://www.heritagetrust.on.ca/en/property-types/easement-properties

Ontario Heritage Trust. (n.d.b). *Ontario Heritage Act Register*. https://www.heritagetrust.on.ca/en/pages/tools/ontario-heritage-act-register

Ontario Heritage Trust. (n.d.c). *Places of Worship Inventory*. Ontario Heritage Trust. https://www.heritagetrust.on.ca/en/places-of-worship/places-of-worship-database

Parks Canada. (n.d.a). *Canada's Historic Places*. www.historicplaces.ca

Parks Canada. (n.d.b). *Directory of Federal Heritage Designations*. https://www.pc.gc.ca/apps/dfhd/search-recherche_eng.aspx

Planning Act, R.S.O. 1990, c. P.13 (1990).

Rainer, J. H. (1982). Effect of Vibrations on Historic Buildings. *The Association for Preservation Technology Bulletin*, *XIV*(1), 2–10.

Randl, C. (2001, July). *Preservation Tech Notes: Protecting a Historic Structure during Adjacent Construction*. U.S. Department of the Interior National Park Service. https://www.nps.gov/tps/how-to-preserve/tech-notes/Tech-Notes-Protection03.pdf

Rankin, L. (2000). *Interpreting Long-term Trends in the Transition to Farming: Reconsidering the Nodwell Site, Ontario, Canada*. British Archaeological Reports.

Ray, A. J. (2005). *I Have Lived Here Since the World Began: An Illustrated history of Canada's Native People*. Key Porter Books.

Rogers, E. S. (1962). *The Round Lake Ojibwa*. Royal Ontario Museum.

Rogers, E. S., & Smith, D. B. (Eds.). (1994). *Aboriginal Ontario: Historical Perspectives on the First Nations*. Dundurn Press.

Spence, M. W., Pihl, R. H., & Murphy, C. (1990). Cultural Complexes of the Early and Middle Woodland Periods. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650*. Ontario Archaeological Society Inc.

Thwaites, R. G. (1896). *The Jesuit Relations and Allied Documents: Travel and Explorations of the Jesuit Missionaries in New France, 1610-1791; the Original French, Latin, and Italian Texts, with English Translations and Notes* (1–73). Burrows Brothers.

Town of Innisfil. (n.d.-a). *Killyleagh circa 1853 | Our Stories Innisfil*. Retrieved April 7, 2022, from http://www.ourstoriesinnisfil.ca/islandora/object/ourstories%3A2648714

Town of Innisfil. (n.d.b). *Town of Innisfil Municipal Heritage Register*. https://innisfil.ca/en/building-and-development/resources/TOI-Municipal-Heritage-Register-Public-Version.pdf

U.N.E.S.C.O. World Heritage Centre. (n.d.). *World Heritage List*. U.N.E.S.C.O. World Heritage Centre. http://whc.unesco.org/en/list/

Williamson, R. F. (1990). The Early Iroquoian Period of Southern Ontario. In C. J. Ellis & N. Ferris (Eds.), *The Archaeology of Southern Ontario to A.D. 1650* (pp. 291–320). Ontario Archaeological Society Inc.

Wiss, J. F. (1981). Construction Vibrations; State-of-the-Art. *Journal of Geotechnical Engineering*, *107*, 167–181.

Appendix H

Notice of Study Commencement

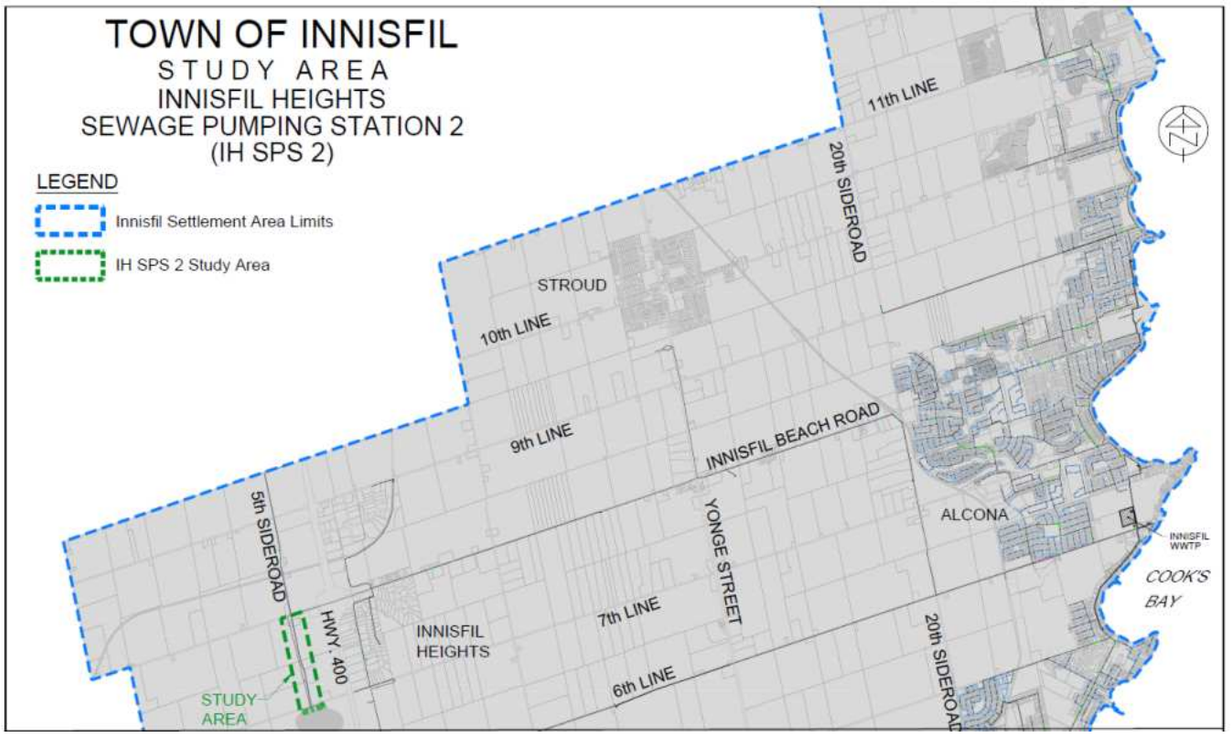
NOTICE OF STUDY COMMENCEMENT

Class Environmental Assessment – Innisfil Heights Sewage Pumping Station 2

The Study

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of four new sewage pumping stations (SPS) to service the Innisfil Heights economic district. Each proposed SPS will require a Schedule B Municipal Class Environmental Assessment (MCEA) prior to its construction. This Notice of Commencement is for the proposed new Innisfil Heights Sewage Pumping Station 2 to be located on the 5th Sideroad in the Town of Innisfil. The sewage pumping station will receive flows from the Innisfil Heights economic district and direct it to the Lakeshore Wastewater Treatment Plant.

The Innisfil Heights Sewage Pumping Station 2 study area is proposed to be located on the 5th Sideroad between Innisfil Beach Road and 7th Line as illustrated on the accompanying map.



The Process

InnServices has retained Ainley Group to complete and document a Schedule B Class EA in accordance with the Municipal Class Environmental Assessment Document, October 2000, as amended in 2015.

How to Get Involved

Public consultation is a key component of the Class EA process. Additional information will be made available once alternatives have been identified and evaluated. Advance notice will be provided to allow all interested parties an opportunity to comment. For further information regarding the project, please contact either of the following members of the study team:

Jenna DeGroote, C.E.T.
Capital Project Manager
InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON
L9S 0J3
jdegroote@innservices.co

Preya Balgobin, P.Eng.
Senior Project Manager
Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
Tel. (705) 445-3451
balgobin@ainleygroup.com

Any input received during this process will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This notice was issued on January 20th, 2022.

Appendix I

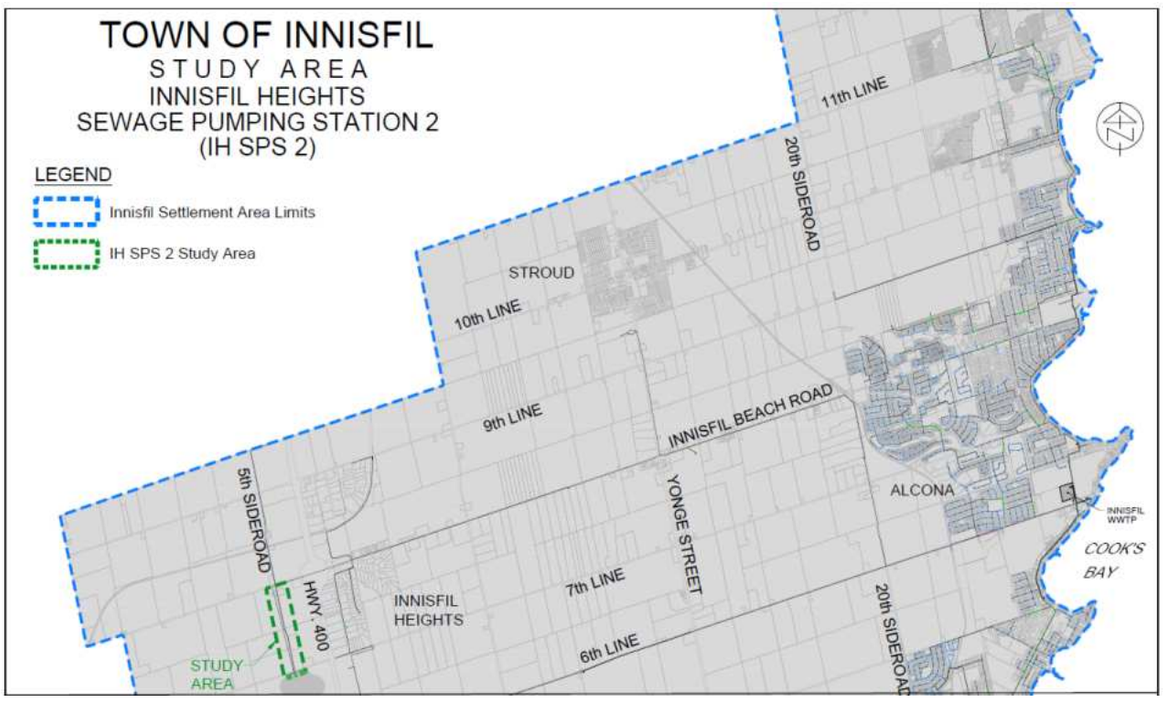
Notice of Public Information Centre

NOTICE OF PUBLIC INFORMATION CENTRE

Class Environmental Assessment – Innisfil Heights Sewage Pumping Station 2

The Study

InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to service the Innisfil Heights economic district. The sewage pumping station will receive flows from the Innisfil Heights economic area and direct it to the Lakeshore Wastewater Treatment Plant. This Notice of PIC is for the proposed new Innisfil Heights Sewage Pumping Station 2 to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.



Public Information Centre

A virtual pre-recorded Public Information Centre (PIC) presentation will be available to view as of Thursday July 21st, 2022 at 3:00 pm and will be posted on the InnServices project website located at https://innservices.co/infrastructure-upgrades/environmental-assessments/innisfil-heights-sewage-pumping-station-2

The PIC presentation will also be available on the Town of Innisfil Facebook page and YouTube channel.

The purpose of the PIC will be to provide information on the project and to allow interested parties an opportunity to review alternative solutions and to provide feedback.

Comments Invited

Public input is encouraged throughout this process and will be given consideration during the planning and design of this project. Comments on the information presented will be received until Thursday, August 4th, 2022 and may also be submitted in advance. To submit comments or obtain additional information please contact either of the study team members listed below.

Jenna DeGroote, C.E.T.
Capital Project Manager
InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON
L9S 0J3
jdegroote@innservices.co

Preya Balgobin, P.Eng.
Senior Project Manager
Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
Tel. (705) 445-3451
balgobin@ainleygroup.com

Any input received during this process will be maintained on file for use during the project and may be included in project documentation. Information collected will be used in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This notice was first issued on Thursday, July 7th, 2022.

Appendix J

Public Information Centre Presentation Material

Public Information Centre

WELCOME

New Innisfil Heights Sewage Pumping Station 2

innservices

Schedule B Class Environmental Assessment

Ainley GROUP CONSULTING ENGINEERS PLANNERS

Date: July 21, 2022

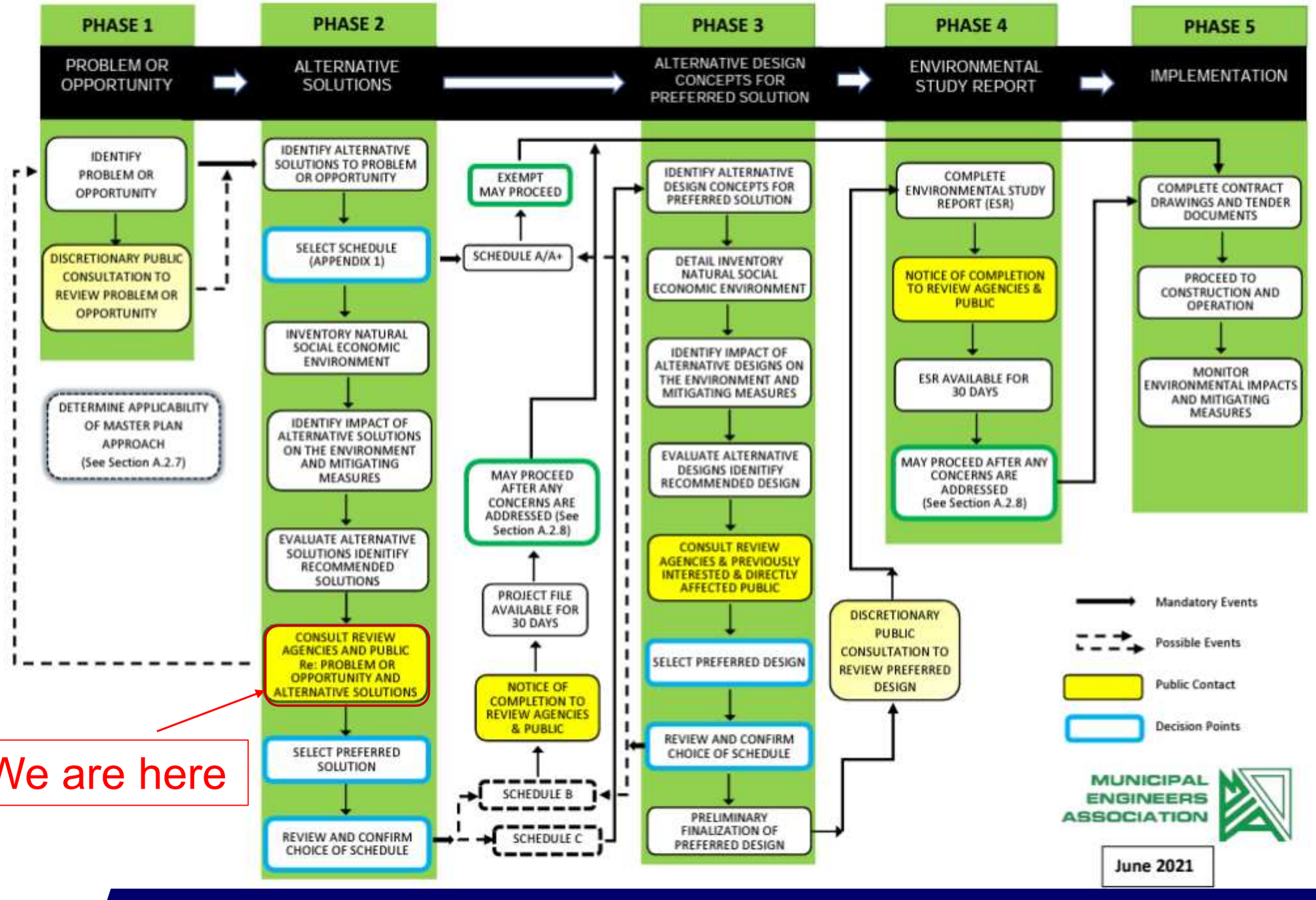
Purpose of Today's Public Information Centre

- To provide residents, rightsholders and other agency stakeholders with information related to proposed locations and design aspects of a proposed new sewage pumping station that will be located on 5th Sideroad between Innisfil Beach Road and 7th Line, servicing the Innisfil Heights economic district.
- To outline the Municipal Class Environmental Assessment (Class EA) Process
- To present the study area, purpose and objectives of the Class EA
- To present the problem/opportunity statement for the project along with the alternative solutions
- To receive feedback on the evaluation of alternatives and recommended preliminary preferred solution
- To outline the project's next steps and proposed schedule

Background of the Class EA Process

- A municipality is required to conduct a Municipal Class EA before this type of infrastructure improvement project can proceed to construction. A Municipal Class EA follows an approved planning process designed to protect the environment and to ensure compliance with the Environmental Assessment Act.
- The purpose of the Environmental Assessment Act (EA Act) is to provide for "…the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation and wise management in Ontario of the environment." The term "environment" is broadly defined and includes the built, natural, socio-economic and cultural environments.
- The process requires the evaluation of potential solutions and design concepts so as to select a suitable approach that will address the problem/opportunity, but also keep impacts to a minimum.
- Based on the scope of this project, the new Innisfil Heights Sewage Pumping Station 2 (IH SPS 2) is being planned as a Schedule 'B' Municipal Class EA Project, which will complete Phases 1 to 2 of the Class EA process.

Municipal Class Environmental Assessment Process



We are here

Study Purpose & Objectives

Purpose

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified wastewater servicing strategies to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018).

The purpose of this Class EA is to identify a suitable location for the proposed new Innisfil Heights Sewage Pumping Station 2 (IH SPS 2) to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil. The sewage pumping station will receive flows from the Innisfil Heights economic area and direct it to the Lakeshore Wastewater Treatment Plant.

Objectives

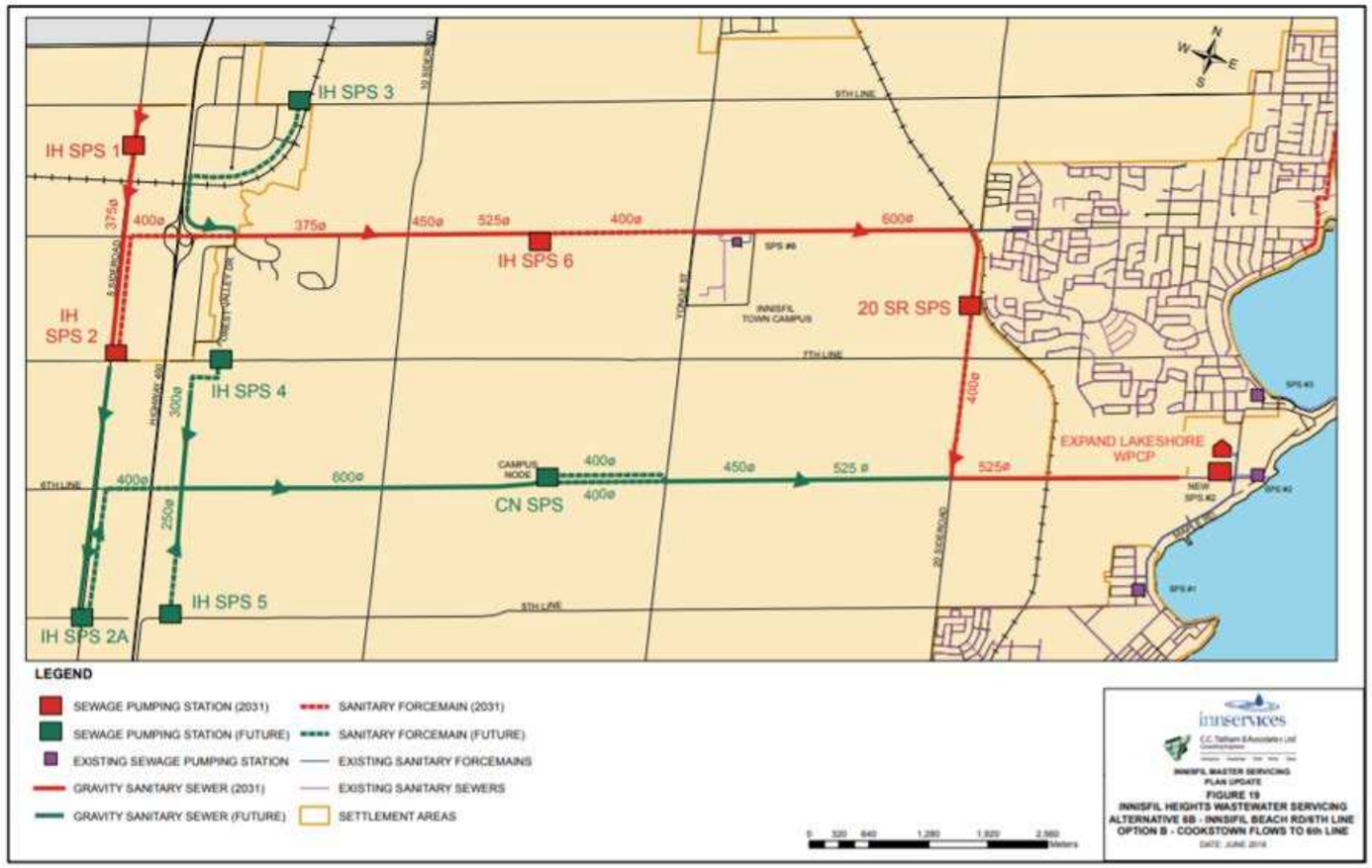
1. **Satisfy the Schedule B Municipal Class Environmental Assessment Process.**
2. **Provide infrastructure capacity and flexibility to meet future capacity demands identified in InnServices Master Servicing Plan Update (MSP), 2018.**
3. **Minimize environmental impacts, and other impacts including natural and socio-economic.**

Study Background

As part of the MSP various alternatives were examined in order to provide servicing for the the first phase of the Innisfil Heights economic district expansion, an area designated as a Strategic Settlement Employment Area. In order to promote, facilitate and maximize the planned expansion of this area, the MSP identified that a municipal sanitary sewage collection system is required. The MSP identified "Alternative 6, Option B' as the preferred option.

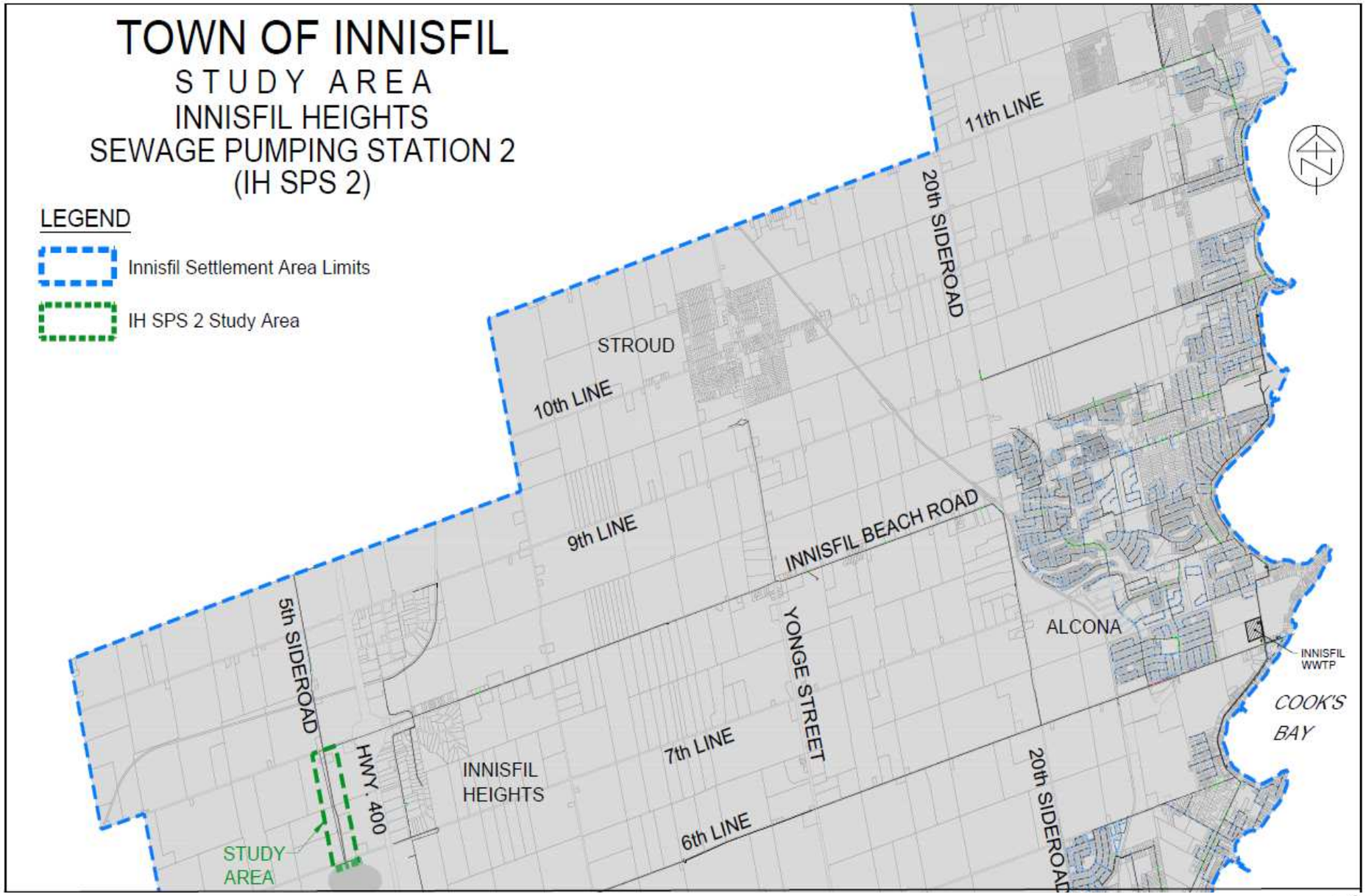
Alternative 6 establishes a sanitary collection system connected to the Lakeshore wastewater system via Innisfil Beach Road and 20th Sideroad for the first phase of development up to year 2031.

As part of this alternative several sewage pumping stations were identified along the sewer route including the new IH SPS 2.



Study Area

The Study Area is defined as the overall area bounded by the east and west side of 5th Sideroad between Innisfil Beach Road and 7th Line on which a new sewage pumping station can be located to best service the Strategic Settlement Employment Area.



Problem / Opportunity Statement

"Identify and develop a preferred solution (location) for the new Innisfil Heights Sewage Pumping Station 2 on 5th Sideroad to meet the future capacity requirements of the Strategic Settlement Employment Area.

Existing Environmental Conditions

Various studies have been completed to determine existing environmental conditions as well as to identify any potential impacts the alternative solutions pose to the environment within the Study Area.

Natural Environment

- The study area includes several natural heritage components including woodlands, wetlands and watercourses that are intermixed with agricultural, rural residential and commercial lands. Excluding the agricultural and/or maintained lands, a total of six vegetation communities were identified. The right of way (ROW) is typically composed of open 'field' habitat composed of opportunistic herbaceous/grass species. Riparian vegetation typically exists in proximity to two mapped watercourses within the study area. The study area includes the Lawson Drain (in the Nottawasaga Valley Conservation Authority watershed) and Tributary of Lover's Creek (in the Lake Simcoe Region Conservation Authority watershed), both of which are considered drainage features with potential fish habitat functions.

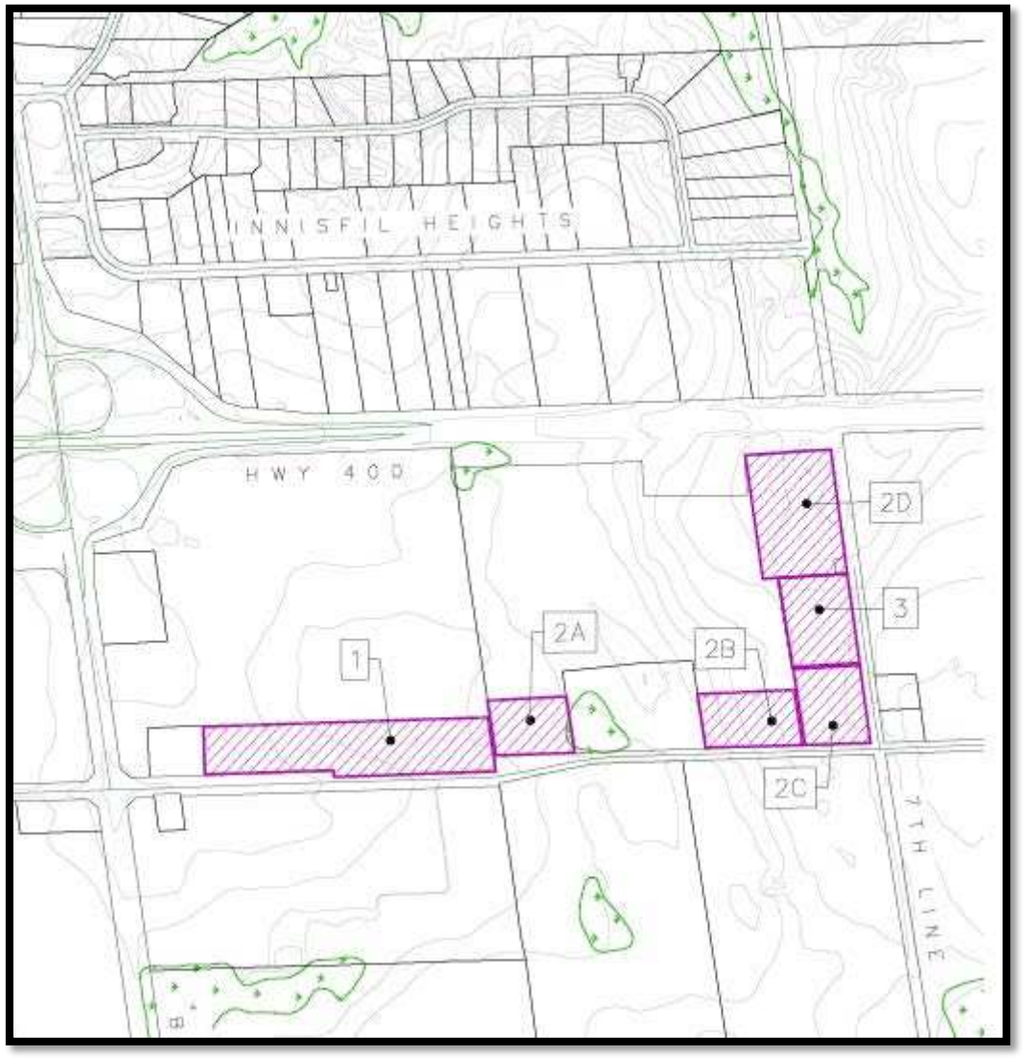
Cultural Environment

- A Stage 1 Archaeological Assessment determined that there is one previously registered archaeological site located within one kilometer of the Study Area, but not within 50 metres. Parts of the Study Area exhibit archaeological potential and will require Stage 2 assessment.
- Cultural Heritage Report background research revealed that there are four potential cultural heritage landscapes (CHL's) within the study area. No additional potential heritage features were identified during the fieldwork.

Social Environment

- Land Use within the study area is designated as agricultural and employment area under the Town of Innisfil Official Plan. The Zoning bylaw refers to the employment area as Industrial Business Complex.

Alternative Solutions



The Master Servicing Plan identified that a municipal sewage collection system is required and therefore a 'Do Nothing' Alternative is not considered.

Three properties have been considered in the review of site alternatives with a total of six (6) alternative locations being considered for the SPS location. Only properties currently zoned as 'Industrial Business Park' and considered to be a part of the Innisfil Heights Strategic Settlement Employment Area were considered as a site alternative. The site alternatives consider an area larger than the actual footprint of the future SPS site. This allows consideration to determine the best location for the footprint based on preliminary design aspects including soil, property owner considerations and the specific elevation of the site footprint.

- Alternative 1 – 3575 Innisfil Beach Road, Innisfil
- Alternative 2A – 7131 5th Sideroad, Innisfil
- Alternative 2B – 7131 5th Sideroad, Innisfil
- Alternative 2C – 7131 5th Sideroad, Innisfil
- Alternative 2D – 7131 5th Sideroad, Innisfil
- Alternative 3 – 3560 7th Line, Innisfil

Alternative 1

3575 Innisfil Beach Road, Innisfil



Site Alternative Limit

Site Characteristics and Potential Constraints

Alternative 1 is located between 5th Sideroad, Innisfil Beach Road and Highway 400. The elevation of the site ranges from 305 meters above sea level (m.a.s.l.) on the north side to 302 m.a.s.l on the south west side. The site review looked at the frontage of the property along 5th Sideroad.

The location of this site is situated on relatively high ground compared to the lowest point within the proposed catchment area. Capital cost for construction at this location will be higher than alternatives, as this site will require the deepest wetwell and deep sewers. Among the alternatives, this location is most proximate to the proposed discharge location.

The site is currently used for agricultural purposes and is zoned as Industrial Business Park. The property is within the Nottawasaga Valley Conservation Authority (NVCA) watershed where the Lawson drain traverses the property.

The soil type is classified as ‘Sandy Silt to Silty Sand Glacial Till’ and ‘Glaciolacsutrine Deposits of Cohesionless Sands’. Both soil types are competent for the support of structures and construction, however, higher groundwater flow rates are expected for excavations made into the cohesionless sands requiring a more robust dewatering system. This site is within an area classified as a ‘Highly Vulnerable Aquifer’.

The site has been previously assessed for archaeological potential. A cultural heritage landscape of a farmstead property was identified adjacent to the site at 7267 5th Sideroad.

Alternative 2A

7131 5th Sideroad, Innisfil



Site Alternative Limit

Site Characteristics and Potential Constraints

Alternative 2A is located on the north west frontage of agricultural property slated for future development located between 5th Sideroad, 7th Line and Highway 400. The site is zoned as Industrial Business Park. The elevation of the site ranges from 304 m.a.s.l on the south side to 302 m.a.s.l. on the north side. The location of this site is situated on relatively high ground compared to the lowest point within the proposed catchment area. Capital cost for construction at this location will be higher than alternatives, as this site will require a deep wetwell and deep sewers.

There is a hedgerow along the northerly property line. The site is in the NVCA watershed, however, the site area is not within regulated lands. The southern edge of the property is vegetated by a mixed forest and a poplar mineral deciduous swamp wetland community. The frontage along 5th Sideroad is considered a dry-fresh mixed meadow ecosite.

The site's soil types are classified as 'Sandy Silt to Silty Sand Glacial Tills' with the possibility for organics which is not favorable for construction. The site is in an area classified as a ' Highly Vulnerable Aquifer'.

The site has previously been assessed for archeological potential and it was concluded that no further archaeological assessment was required. The area may be considered clear of archaeological concern once this report is accepted into the MHSTCI provincial register. The site is approximate 150m away from the a cultural heritage landscape.

Alternative 2B

7131 5th Sideroad, Innisfil



Site Limit

Site Characteristics and Potential Constraints

Alternative 2B is located on the center west frontage of agricultural property slated for future development located between 5th Sideroad, 7th Line and Highway 400. The site is zoned as Industrial Business Park. The elevation of the site ranges from 298 m.a.s.l on the south side to 304 m.a.s.l. on the north side. The topographic location of this site starts to slope down towards to the lowest point within the proposed catchment area. Capital cost for construction at this location will be less than the alternatives at a higher elevation.

The site is in the Lake Simcoe Region Conservation Authority (LSRCA) watershed, however, only the south border is within regulated lands where a watercourse traverses the site.

The site's soil types are classified as 'Sandy Silt to Silty Sand Glacial Tills' and 'Glaciolacsutrine Deposits of Cohesionless Sands' which are acceptable for construction, however, higher groundwater flow rates are expected for excavations made into the cohesionless sands requiring a more robust dewatering system. The site is in an area classified as a ' Highly Vulnerable Aquifer'.

The site has previously been assessed for archeological potential and it was concluded that no further archaeological assessment was required. The area may be considered clear of archaeological concern once this report is accepted into the MHSTCI provincial register. The site is approximate 150m away from the a cultural heritage landscape.

Alternative 2C

7131 5th Sideroad, Innisfil



Site Limit

Site Characteristics and Potential Constraints

Alternative 2C is located on the south west frontage of agricultural property slated for future development located between 5th Sideroad, 7th Line and Highway 400. The site is zoned as Industrial Business Park. The elevation of the site ranges from 298 m.a.s.l to 300 m.a.s.l. Capital cost for construction at this location will be less than the alternatives at a higher elevation.

The site is in the LSRCA watershed, however, only the north border is within regulated lands where a watercourse traverses the site that is a tributary of Lover's Creek. It is expected to provide indirect fish habitat and is protected under the Federal Fisheries Act. There are no records of aquatic Species at Risk (SAR) in the sub-watershed.

The site's soil types are classified as 'Ice-Contact Stratified Deposits of Sand, Silt, Clay, and Glacial Till' which are acceptable for construction. The site is in an area classified as a ' Highly Vulnerable Aquifer'.

The site has previously been assessed for archeological potential and it was concluded that no further archaeological assessment was required. The area may be considered clear of archaeological concern once this report is accepted into the MHSTCI provincial register.

Alternative 2D

7131 5th Sideroad, Innisfil



Site Limit

Site Characteristics and Potential Constraints

This site is located on 7th Line on the south end of the study area. The elevation of the site is approximately 296m to 294 m.a.s.l which is the lowest point in the catchment area. This site provides the best topography for a SPS location. Future sewer systems along 5th Sideroad and/or on the future development site can travel downwards to the SPS with the slope of the land.

The agricultural land is zoned Business Industrial Park and is situated in the LSRCA watershed. Both the north and south sides of the site are in regulated lands where two watercourses traverse the site. The northern watercourse is a tributary of Lover's Creek. It is expected to provide indirect fish habitat and is protected under the Federal Fisheries Act. There are no records of aquatic SAR in the sub-watershed.

The sites soil type is classified 'Glaciolacsutrine Deposits of Cohesionless Sands' which is acceptable for construction, however, higher groundwater flow rates are expected for excavations made into the cohesionless sands requiring a more robust dewatering system. The site is in an area classified as a ' Highly Vulnerable Aquifer'. As well, this site is in an area of 'Significant Groundwater Recharge'.

This portion of the site was not assessed for archeological potential. A Stage 2 Assessment is required.

Alternative 3

3560 7th Line, Innisfil



Site Limit

Site Characteristics and Potential Constraints

This site is located on 7th Line on the south end of the project area. The elevation of the site is approximately 301m to 297 m.a.s.l which is a relatively low point. Pumping can follow a consistent upwards path ideal for forcemain design.

The site is currently the commercial business of IHL Canada. A radio tower is situated on the south west corner of the property. The site is zoned Business Industrial Park and is situated in the LSRCA watershed. Both the north and portions of the south sides of the site are in regulated lands where two watercourses traverse the site. The northern watercourse is a tributary of Lover's Creek. It is expected to provide indirect fish habitat and is protected under the Federal Fisheries Act. There are no records of aquatic SAR in the sub-watershed.

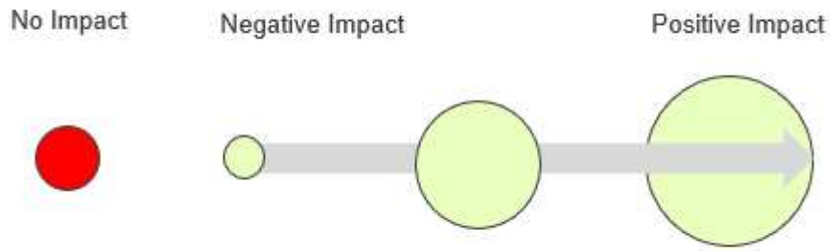
The site's soil type is classified as glacial till and deposits of cohesionless sands which is acceptable for construction, however, higher groundwater flow rates are expected for excavations made into the cohesionless sands requiring a more robust dewatering system. The site is in an area classified as a ' Highly Vulnerable Aquifer'. As well, this site is in an area of 'Significant Groundwater Recharge'.

The site has previously been assessed for archeological potential and it was concluded that no further archaeological assessment was required. The area may be considered clear of archaeological concern once this report is accepted into the MHSTCI provincial register.

Evaluation

- Each of the alternatives were evaluated based on their potential impact to the study area environment (physical, natural, cultural, and socio-economic).

- The evaluation is presented in a table or matrix to provide a simplified, visual comparison.



- An increased number of larger circles indicates that an alternative has increasing positive impacts and fewer negative impacts.

Evaluation of Alternatives

EVALUATION CRITERIA	ALT 1	ALT 2A	ALT 2B	ALT 2C	ALT 2D	ALT 3	DESCRIPTION OF EFFECTS
PHYSICAL ENVIRONMENT							
Suitability of Elevation and Topography	▫	▫	○	○	◯	◯	Alternative 1 and 2A pose more of a technical disadvantage due to topography. Preliminary layout indicates that there is adequate space for station footprint within each Alternative site.
Geotechnical Suitability	○	▫	○	◯	○	◯	Preliminary review suggests that Alternatives 1, 2B and 2D have a likelihood of being cohesionless sands which are not as beneficial for construction. Alternative 2A has higher likelihood of organics due to proximity of wetland. Alternative 2C and 3 have a higher likelihood of being glacial till which better supports construction.
Hydrogeological Suitability	○	○	▫	○	▫	○	Hydrogeological conditions to be confirmed. Alternatives 2B and 2D show a disadvantage due to likelihood of higher groundwater flow rates requiring more robust dewatering system. Depending on the location of the SPS on each site, dewatering in close proximity to the watercourse may have impacts on Alternatives 2B, 2C, 2D and 3. As well, dewatering near 2A could impact the wetland. Depending on the location of the SPS on the site of Alternative 1, there could be impacts on the watercourse. It is recommended to situate the SPS away from watercourses and wetlands.
Hydraulics	▫	▫	○	○	◯	◯	Alternative 2D is at the lowest location in the catchment providing opportunity for the lowest capital cost expenditure on gravity sewers to the site and minimizing wetwell depth requirements. This site requires the longest pumping distance of all alternatives however headlosses related to pumping distance can be mitigated through forcemain design. Site alternatives become less preferable towards the north end of the study area, with Alternative 1 being the least preferable option.
NATURAL ENVIRONMENT							
Proximity to Key Natural Heritage Features	◯	○	○	○	▫	○	All alternatives are within close proximity to a Key Natural Heritage Feature (KNHF) such as a watercourse, wetland, or potential habitat for Species at Risk. Detailed studies are required to confirm the presence or absence of significant wildlife habitat. Alternative 1 provides the most flexibility for the footprint of the SPS to be the furthest distance from any identified KNHF.
Terrestrial Vegetation/Wildlife (Including SAR)	○	○	○	○	○	○	There is potential SAR habitat within the agricultural fields and forest habitat within the study area. The alternatives are within agricultural land. The preferred alternative will be studied further to consider site specific impacts.
Surface Water and Fisheries	◯	◯	○	○	▫	○	Alternatives 1, 2B, 2C, and 3 are bordered on one side by watercourses protected under the Federal Fisheries Act. Alternative 2D is bordered on both sides (north and south) by a watercourse. The size of the site of Alternative 1 provides flexibility in the footprint of the SPS and it could potentially be placed further away from the identified watercourse. Any proposal to alter site conditions in water or within lands regulated by the NVCA or LSRCA requires site specific fisheries evaluation of project activities to confirm potential impacts, and mitigation requirements prior to development. Alternative 2A is in close proximity to an unevaluated wetland.
Groundwater	○	○	○	○	▫	▫	Sites 2D and 3 are within areas of 'Significant Groundwater Recharge'. All alternatives are within an area classified as a 'Highly Vulnerable Aquifer'.
Climate Change /Air Quality	○	○	○	○	○	○	All alternatives are similar in air quality and climate change impacts.

Evaluation of Alternatives (Continued)

EVALUATION CRITERIA	ALT 1	ALT 2A	ALT 2B	ALT 2C	ALT 2D	ALT 3	DESCRIPTION OF EFFECTS
CULTURAL AND SOCIAL ENVIRONMENT							
Archeological	○	○	○	○	○	○	All Alternative site locations (with the exception of Alternative 2D) have been previously assessed and require no further work. An archaeological assessment of alternative 2D will be required
Cultural Heritage Resources	○	○	○	◯	◯	◯	The northern portion of Alternative 1 is in close proximity to a cultural heritage landscape. As well Alternatives 2A and 2B surround a cultural heritage landscape. The remaining three alternatives have no cultural heritage resources.
Aesthetics (noise, odour, visibility)	○	○	○	○	○	▫	All of the sites with the exception of Alternative 3 are all situated on agricultural land zoned as Industrial Business Park and there is a minimized proximity to the public. A SPS on the site of Alternative 3, which operates as a commercial business, would have the most impacts.
Impacts to Property Owners	○	○	○	○	○	○	Alternatives 1, 2BA and 2C are closest to a residential home. The sites are large enough to situate the SPS further from the houses to minimize impacts and therefore all ratings are similar.
Impacts to Business/Commercial Properties	◯	◯	◯	◯	◯	▫	A commercial business is currently in operation on the site of Alternative 3. Construction of the SPS would be disruptive to business activities. The outdoor space is currently fully in use; therefore, a pumping station may not be welcomed. Future development on remaining properties will benefit from the SPS which will be built to service the future development on the properties.
ECONOMIC ENVIRONMENT							
Operating and Maintenance Costs	◯	○	○	○	▫	○	In general operation and maintenance costs escalate as pumping distance increases due to the increase in dynamic headlosses and resulting increase in pump size requirements. In addition, longer forcemains can result in odour issues if retention time is too long. However, dynamic headlosses can be mitigated with proper forcemain sizing and retention time can be reduced through design alternatives such as dual forcemains.
Capital Costs	▫	▫	○	○	◯	◯	The capital costs for the SPS's will increase northwards due to the topography of the land, increasing the depth of the wet well and depth of the future sewer system.
Land Acquisition Costs	○	○	○	○	○	○	All site locations are within the Strategic Settlement Area and zoned as Industrial Business Park. The sites will require private property acquisition.
TOTAL SCORE							
	○	▫	○	◯	○	○	

Preliminary Recommended Solution

Given the results of the preliminary evaluation, it is proposed that **Alternative 2C** located at 7131 5th Sideroad be selected as the Recommended Solution.

7131 5th Sideroad, Innisfil



Next Steps and Proposed Schedule

Receive Comments	Review comments, incorporate feedback from the PIC	Select the Preferred Alternative and Finalize Project File Report	Issue Notice of Study Completion and provide Project File Report for final 30-day public review and comment period	Address and incorporate comments. If no Notice of Proposed Order is received from the MECP; proceed to preliminary design
Thursday, August 4th, 2022			Fall 2022	Winter 2022

Your Comments are Important to Us

Comments may be sent to the study team by email or regular mail. Public input is encouraged throughout this process and will be given consideration during the planning and design of this project.

Mrs. Jenna DeGroote, C.E.T.
Capital Project Manager
InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON
L9S 0J3
Email: jdegroote@innservices.co

Ms. Preya Balgobin, P.Eng.
Project Manager
Ainley Group
195 County Ct Blvd #300,
Brampton, ON
L6W 4P7
Email: preya.balgobin@ainleygroup.com

The deadline for comments is Thursday August 4th, 2022

Appendix K

Notice of Completion

NOTICE OF COMPLETION

Municipal Class Environmental Assessment – Innisfil Heights Sewage Pumping Station 2 (IH SPS 2)

Background

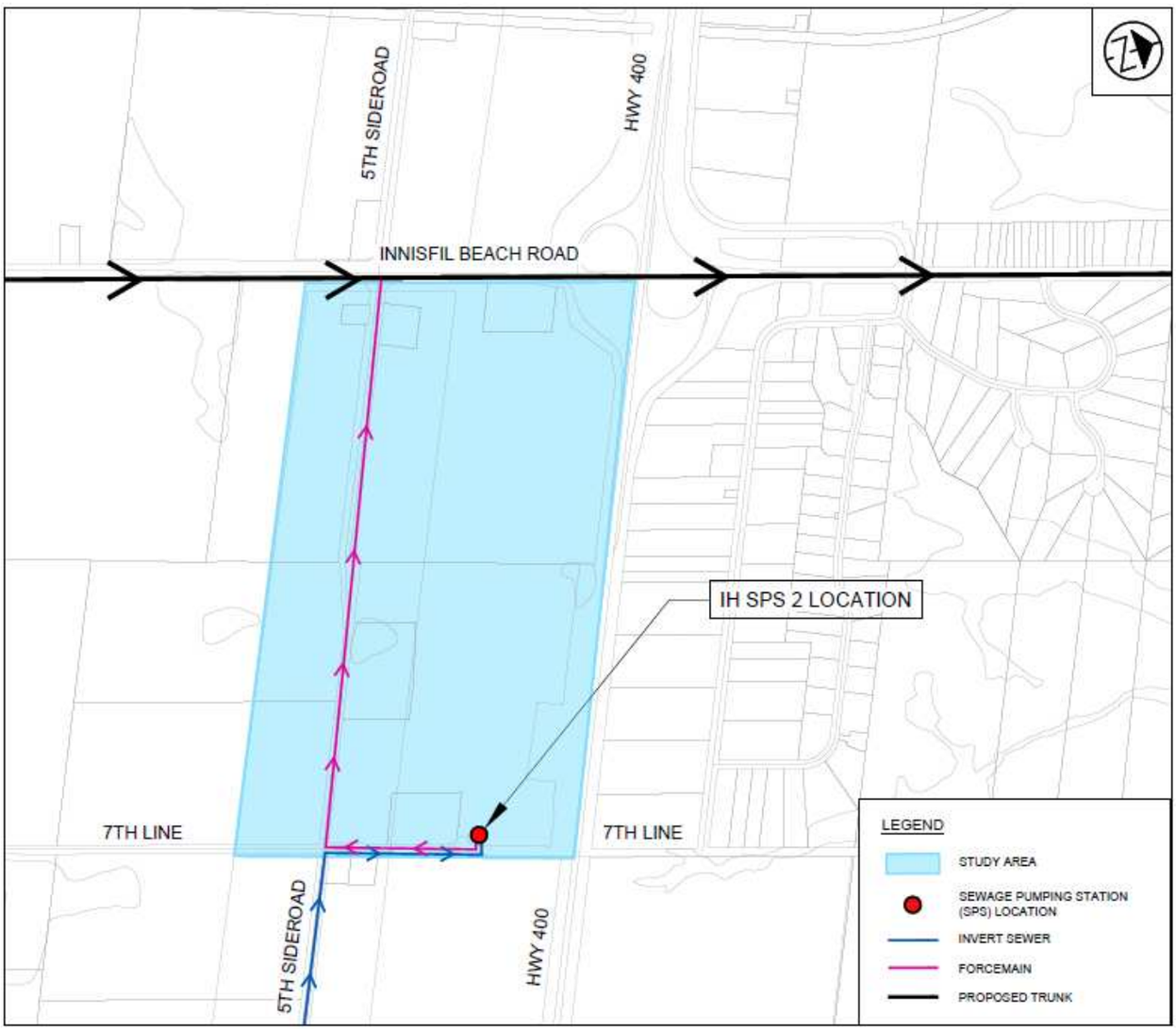
InnServices Utilities Inc. has completed a Schedule B Municipal Class Environmental Assessment (Class EA) study to determine the preferred location to construct a new sewage pumping station to service the Innisfil Heights economic district. This study builds upon the 2018 Innisfil Master Servicing Plan Update to provide wastewater servicing in short- and long- term strategies to accommodate the population and employment growth.

Process

This Class EA followed the planning and design process for Schedule 'B' projects as described in the Municipal Class Environmental Assessment Document (amended 2024), published by the Municipal Engineers Association (MCEA).

Recommendation

The recommendation from this Class EA is to construct a new sewage pumping station at 7131 5th Sideroad. This station will connect to the proposed trunk sewer on Innisfil Beach Road and direct wastewater flow to the Lakeshore Wastewater Treatment Plant. As such, public and technical agency input played a key role in developing the study recommendations.



The study process, recommendations, and mitigation measures are documented within the Project File Report. A copy of this report is being placed on the public record for a 30-day review period. Subject to comments received as a result of this Notice and the receipt of necessary approvals, InnServices intends to proceed with preliminary design as documented in the Project File Report. The Project File Report can be viewed on the InnServices project website located at: https://innservices.co/infrastructure-upgrades/environmental-assessments/innisfil-heights-sewage-pumping-station-2.

Feedback

Consultation is vital to the success of a Class EA Study and InnServices wants to ensure that anyone interested has the opportunity to be involved and provide input. Interested persons may provide written comments or questions to our project team by **May 3rd, 2025**. All comments and concerns should be sent directly to either one of the following contacts.

Jenna DeGroote, C.E.T.
Capital Project Manager
InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON
L9S 0J3
jdegroote@innservices.co

Preya Balgobin, P.Eng.
Senior Project Manager
Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
Tel. (705) 445-3451
preya.balgobin@ainleygroup.com

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (that is, requiring and individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (that is, requires further studies), only on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected inherent and treaty rights of a First Nation or Indigenous community.

Requests on other grounds will not be considered. Requests should include the requester's contact information and full name.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an additional/comprehensive EA) on the grounds specified previously, and any information in support of the statements in the request.

The request should be sent in writing or by email to both of the following contacts:

Ministry of the Environment, Conservation and Parks
77 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 Avenue West, 1st Floor
Toronto, ON, M4V 1P5
EABDirector@ontario.ca

Requests should be also sent to the project contacts listed above by mail or by email.

Please visit the ministry'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

All personal information included in your request - such as name, address, telephone number, and property location - is collected, under the authority of section 30 of the Environmental Assessment Act and is collected and maintained for the purpose of creating a record that is available to the general public. As this information is collected for the purpose of a public record, the protection of personal information provided in the *Freedom of Information and Protection of Privacy Act* (FIPPA) does not apply (s.37). Personal information you submit may become part of a public record that is available to the general public unless you request that your personal information remain confidential.

This notice was issued on April 3rd, 2025.

Appendix L

Consultation Records

List of Content

1. Consultation Records with MECP

2. Consultation Records with First Nations
    a. Chippewas of Georgina Island First Nation
    b. Chippewas of Rama First Nation
    c. Beausoleil First Nation
    d. Curve Lake First Nation
    e. Mississaugas of Scugog Island First Nation
    f. Hiawatha First Nation
    g. Alderville First Nation
    h. Huron-Wendat Nation
    i. Métis Nation of Ontario (MNO)
    j. Saugeen Ojibway Nation (as the consultation contact for Saugeen First Nation and Chippewas of Nawash Unceded First Nation)

3. Consultation Records with Agencies

4. Consultation Records with Property Owners

Consultation Records with MECP

From:	EA Notices to CRegion (MECP)
To:	Jody Marks; jdegroote@innservices.co
Cc:	Preya Balgobin; Wendy Smeh
Subject:	RE: Town of Innisfil, MEA Class EA ,Innisfil Heights Sewage Pumping Station 2
Date:	January 28, 2022 2:02:04 PM
Attachments:	image001.png 2022-01-28-MECP Comments for IH SPS2 NoC.pdf Supporting Attachment - Species at Risk Proponents Guide to Preliminary Screening (Draft May 2019).pdf

---

Please find the attached letter and documents as the ministry's general response to the Notice of Study Commencement for the above project. If you have any questions regarding these comments and information provided, please feel free to contact me directly.
Thank you,

Chunmei Liu | Regional EA and Planning Coordinator
Environmental Assessment Branch, **Ontario Ministry of the Environment, Conservation and Parks**
Chunmei.Liu@ontario.ca | Website: http://www.ene.gov.on.ca/

If you have any accommodation needs or require communication supports or alternate formats, please let me know.
Si vous avez des besoins en matière d'adaptation, ou si vous nécessitez des aides à la communication ou des médias substituts, veuillez me le faire savoir.

From: Jody Marks <jody.marks@ainleygroup.com>
Sent: January-20-22 4:20 PM
To: EA Notices to CRegion (MECP) <eanotification.cregion@ontario.ca>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Subject: Town of Innisfil, MEA Class EA ,Innisfil Heights Sewage Pumping Station 2

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello,

Please find attached the Project Information Form and Notice of Commencement for the above noted project.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format.**

While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com**

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Client's Guide to Preliminary Screening for Species at Risk

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

Table of Contents

1.0 Purpose, Scope, Background and Context 3
1.1 Purpose of this Guide 3
1.2 Scope 3
1.3 Background and Context 4
2.0 Roles and Responsibilities 5
3.0 Information Sources 6
3.1 Make a Map: Natural Heritage Areas 7
3.2 Land Information Ontario (LIO) 7
3.3 Additional Species at Risk Information Sources 8
3.4 Information Sources to Support Impact Assessments 8
4.0 Check-List 9

1.0 Purpose, Scope, Background and Context

1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

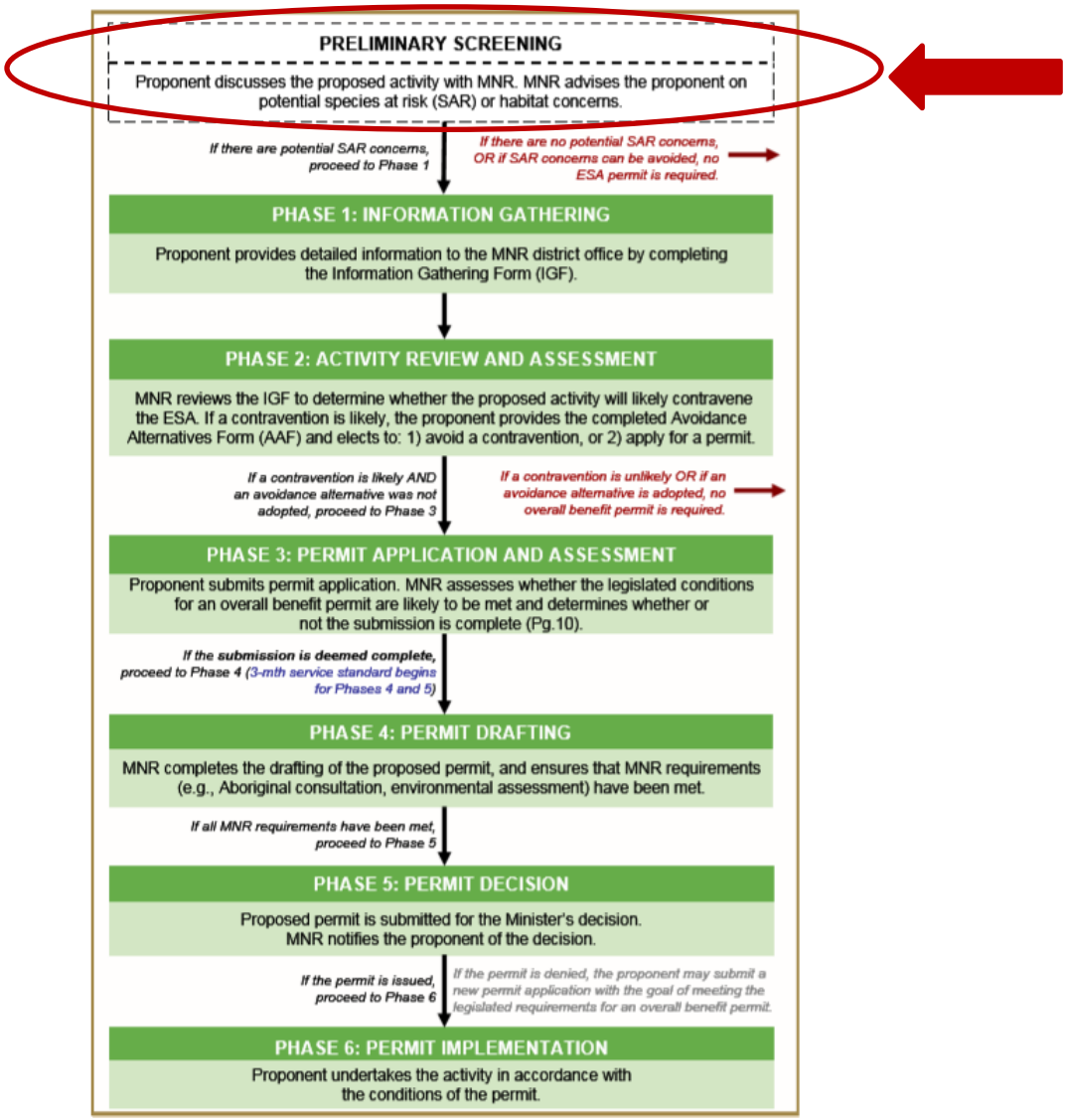
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

Step 1: Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

Step 2: Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

Step 3: Client gathers information identified in the checklist in section 4 of this guide.

Step 4: Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

Ontario

January 28, 2022 File No.: EA 01-06-03

BY EMAIL ONLY
Jenna DeGroote, C.E.T.
Capital Project Manager
InnServices Utilities Inc.
7251 Yonge Street, Innisfil, ON L9S 0J3
jdegroote@innservices.co

Re: **Innisfil Heights Sewage Pumping Station**
Town of Innisfil
Municipal Class Environmental Assessment
Response to Notice of Commencement

Dear Jenna DeGroote,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Town of Innisfil (proponent) has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA).

The attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

The project is located within Treaty 18, 1818, also known as The Nottawasaga Purchase. This area falls within the Williams Treaties First Nations (WTFN). Given the location of the project, communities potentially interested in the project are:

- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation
- Beausoleil First Nation

In addition to, the Mississauga communities of the WTFN should also be copied, however, they may defer to the Chippewa given this area is both within their treaty area and territory.

- Curve Lake First Nation
- Alderville First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- An Order request is expected on the basis of impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Should you or any members of your project team have any questions regarding the material above, please contact me at chunmei.liu@ontario.ca.

Yours truly,



Regional Environmental Assessment Coordinator – Central Region

cc Katy Potter, Supervisor, Environmental Assessment Services, MECP
Chris Hyde, Manager, Barrie District Office, MECP
Preya Balgobin, Senior Project Manager, Ainley Group

Attach: Areas of Interest
A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities
The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019)

AREAS OF INTEREST

It is suggested that you check off each section after you have considered / addressed it.

☐ **Planning and Policy**

- Projects located in MECP Central Region are subject to **A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020).** Parts of the study area may also be subject to the Oak Ridges Moraine Conservation Plan (2017), Niagara Escarpment Plan (2017), Greenbelt Plan (2017) or Lake Simcoe Protection Plan (2014). Applicable plans and the applicable policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.

- Additionally, if the project is located within the boundaries of the Lake Simcoe Protection Plan, we also strongly recommend that the project team review the information and resources available on the province's website related to protecting Lake Simcoe found here: https://www.ontario.ca/page/protecting-lake-simcoe, including the Lake Simcoe phosphorus reduction strategy.

- The **Provincial Policy Statement (2020)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.

- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

☐ **Source Water Protection**

The *Clean Water Act*, 2006 (CWA) 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 CWA 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.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use this mapping tool: http://www.applications.ene.gov.on.ca/swp/en/index.php. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information
For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario’s website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional “local” threat activities, as approved by the MECP.

- **Climate Change**

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of Class EA projects to:**

    1. Consider during the assessment of alternative solutions and alternative designs, the following:
        a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
        b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
    2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**

- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
    - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
    - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
    - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, you may consider the provisions of the Rouge Park Management Plan if applicable.

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

- For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained

    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If the proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess

construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements

Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
    - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with

MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides and proposed land use compatibility guidelines to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to a Section 16 Order request under the *Environmental Assessment Act,* although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**

- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should

include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020

Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address (for projects in MECP Central Region, the email is eanotification.cregion@ontario.ca).

The public has the ability to request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- an order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, the order request(s) on those matters should be addressed in writing to:

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

and

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

The s.16 order request information has officially been updated on the Ontario Class EA Website: https://www.ontario.ca/page/class-environmental-assessments-section-16-order
This should help provide greater clarity on the s.16 order request processes and scope.

A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

Aboriginal communities – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

Consultation – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

Crown – the Ontario Crown, acting through a particular ministry or ministries.

Procedural aspects of consultation – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

Proponent – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing a permit,

authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;
- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

b) What documentation and reporting does the Crown need from the proponent?

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;
- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;
- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigates any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

From:	Liu, Chunmei (MECP)
To:	Jody Marks
Cc:	Potter, Katy (MECP)
Subject:	RE: Town of Innisfil (InnServices) Municipal Class EA - Indigenous Consultation
Date:	Friday, October 1, 2021 2:27:47 PM
Attachments:	image001.png A Proponent"s Introduction to the Delegated Aspects of Consultation with.pdf

Thank you for your email, Jody.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

The following Williams Treaties Communities with a copy to the Williams Treaties Coordinator Karry Sandy McKenzie:
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation (Mnjikaning)
- Beausoleil First Nation
- Curve Lake First Nation
- Mississaugas of Scugog Island First Nation
- Hiawatha First Nation
- Alderville First Nation

- Huron-Wendat Nation, if there is potential for the project to impact archeological resources [please refer to wording previously discussed to ensure that it does not seem like only HWN is interested in archeological impacts]

- Métis Nation of Ontario- Lands and Resources Dept with a copy to Region 7 Councillor David Dusome

-Saugeen First Nation and the Chippewas of Nawash Unceded First Nation (these communities work together on consultation issues and are known collectively as the Saugeen Ojibway Nation. They have requested notices be sent to the Saugeen Ojibway Nation Environment Office with a copy to the Chief and Council of Saugeen First Nation and Chippewas of Nawash Unceded First Nation).

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances subsequent to initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right
- Consultation with Indigenous communities or other stakeholders has reached an impasse
- A Part II Order request is expected on the basis of impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Should you or any members of your project team have any questions regarding the material above, please contact me for further discussion.

Thank you,

Chunmei Liu | Regional EA and Planning Coordinator
Environmental Assessment Branch, **Ontario Ministry of the Environment, Conservation and Parks**
Chunmei.Liu@ontario.ca | Website: http://www.ene.gov.on.ca/
We want to hear from you. How was my service? You can provide feedback at 1-888-745-8888 or ontario.ca/inspectionfeedback
Nous attendons vos commentaires. Qu'avez-vous pensé de mon service? Vous pouvez nous faire part de vos commentaires au 1-888-745-8888 ou à ontario.ca/retroactioninspection

---

From: Jody Marks <marks@ainleygroup.com>
Sent: September-30-21 10:01 AM
To: Liu, Chunmei (MECP) <Chunmei.Liu@ontario.ca>
Subject: Re: Town of Innisfil (InnServices) Municipal Class EA - Indigenous Consultation

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Chunmei,

A further follow up regarding my inquiry at the end of August. We have published the Notice of Commencement and would like to share the notice with the Indigenous communities as soon as we can. If you could please let me know when we could expect a response from your senior advisor I would appreciate it.

Thank you for your time.

Regards,

Jody Marks
Environmental Planner

www.ainleygroup.com
Tel: (705) 726-3371 Ext. 227

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Jody Marks
Sent: Thursday, September 16, 2021 10:59 AM
To: Liu, Chunmei (MECP) <Chunmei.Liu@ontario.ca>
Subject: RE: Town of Innisfil (InnServices) Municipal Class EA - Indigenous Consultation

Hi Chunmei,

I wanted to follow up with you on my inquiry below. Please let us know which Indigenous communities should be included in our consultation plan. The Notice of Commencement has been published today in the local newspaper.

Thank you!

Regards,

Jody Marks
Environmental Planner
www.ainleygroup.com
Tel: (705) 726-3371 Ext. 227

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Liu, Chunmei (MECP) <Chunmei.Liu@ontario.ca>
Sent: Wednesday, August 18, 2021 10:28 AM
To: Jody Marks <marks@ainleygroup.com>
Cc: Wendy Smeh <smeh@ainleygroup.com>; Preya Balgobin <balgobin@ainleygroup.com>; Potter, Katy (MECP) <Katy.Potter@ontario.ca>
Subject: RE: Town of Innisfil (InnServices) Municipal Class EA - Indigenous Consultation

Thank you for your email, Jody. I'll ask our senior advisor to review your list and let you know when comments received. Have a great day!

From: Jody Marks <marks@ainleygroup.com>
Sent: August-17-21 4:52 PM
To: Liu, Chunmei (MECP) <Chunmei.Liu@ontario.ca>
Cc: Wendy Smeh <smeh@ainleygroup.com>; Preya Balgobin <balgobin@ainleygroup.com>
Subject: Town of Innisfil (InnServices) Municipal Class EA - Indigenous Consultation

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello Chunmei,

I hope you have been keeping well. Our project team is starting a new project with InnServices (Town of Innisfil) which involves the completion of five Schedule B Municipal Class EAs for five separate Sewage Pumping Stations in the Innisfil Heights, Stroud and Alcona areas of the Town of Innisfil. The projects were identified in the 2018 Innisfil Master Servicing Plan (MSP) Update, with the exception of Stroud.

We are working to draft the Notice of Commencement and would like confirmation on which Indigenous Communities we should include as part of our consolation plan. Currently, we have included the Indigenous communities that were listed as part of the MSP (see below), please let us know of any changes to this list.

Chiefs of Ontario
Chippewas of Georgina Island
Williams Treaties First Nations
Chippewas of Mnjikaing First Nation (Rama)
Ogemawahj Tribal Council
Huron-Wendat Nation
Union of Ontario Indians
Métis Nation of Ontario
Beausoleil First Nation
Moon River Métis Council
Georgian Bay Métis Council

Thank you.

Regards,

Jody Marks
Environmental Planner
www.ainleygroup.com
Tel: (705) 726-3371 Ext. 227

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The*

recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

Aboriginal communities – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

Consultation – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

Crown – the Ontario Crown, acting through a particular ministry or ministries.

Procedural aspects of consultation – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

Proponent – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;

- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;
- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

b) What documentation and reporting does the Crown need from the proponent?

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;

- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;
- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant information;
- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigate any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

From:	Kaufman, Jackson (MCM)
To:	Preya Balgobin
Cc:	Barboza, Karla (She/Her) (MCM); Beth Wang; Jenna DeGroote (jdegroote@innservices.co); EA Notices to CRegion (MECP); Liu, Chunmei (MECP); Wendy Smeh
Subject:	MCM Response - InnServices, Municipal Class EA IH SPS 2 - Notice of Completion [MCM File: 0015696]
Date:	May 7, 2025 2:28:17 PM
Attachments:	image001.jpg image002.png 2025-04-03 InnServices_NewIHSPS2_NofCompletion.pdf 2025-05-07_Innisfill_SewagePumpingSt2_MCM_Comments.pdf

---

Good afternoon, Preya Balgobin,

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Completion for the above-referenced project, and for making the Project File Report (PFR) available for review.

MCMs comments can be found attached, thank you for your patience. Please do not hesitate to contact us if you have any questions or require additional information.

Kind regards,

Jackson Kaufman
Heritage Planner | Heritage Operations Branch / Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
613-242-3743 | jackson.kaufman@ontario.ca

Taking pride in strengthening Ontario, its places and its people

---

From: Beth Wang <beth.wang@ainleygroup.com>
Sent: Thursday, April 3, 2025 12:35 PM
Cc: Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: InnServices, Municipal Class EA IH SPS 2 - Notice of Completion

Good afternoon,

InnServices Utilities Inc. has retained Ainley Group to conduct a Schedule B Municipal Class Environmental Assessment (Class EA) for the Innisfil Heights Sewage Pumping Station 2 (IH SPS 2).

Please find attached important information regarding the **completion of the Class EA** and details on how to access the Project File Report.
Comments on this Class EA may be submitted by May 3rd, 2025.

Should you have any questions or require further details, please do not hesitate to reach out.

Regards,

Beth Wang, EIT
Engineering Intern

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Toronto, ON M5G 1S7
Tel.: 613-242-3743

Ministère des Affaires civiques et du Multiculturalisme

Planification relative au patrimoine
Opérations relatives au patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
5e étage, 400, av. University
Toronto, ON M5G 1S7
Tél.: 613-242-3743

Ontario

May 7, 2025

EMAIL ONLY

Preya Balgobin
Senior Project Manager
Ainley Group
280 Pretty River Parkway
Collingwood, ON L9Y 4J5
preya.balgobin@ainleygroup.com

MCM File	**:**	**0015696**
Proponent	**:**	**InnServices Utilities Inc**
Subject	**:**	**Notice of Completion**
Project	**:**	**Innisfil Heights Sewage Pumping Station 2 – 5th Sideroad**
Location	**:**	**Town of Innisfil, County of Simcoe**

Dear Preya Balgobin:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Completion for the above-referenced project, and for making the Project File Report (PFR) available for review. MCM's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage.

Project Summary
InnServices Utilities Inc. has completed a Schedule B Municipal Class Environmental Assessment (Class EA) study to determine the preferred location to construct a new sewage pumping station to service the Innisfil Heights economic district. This study builds upon the 2018 Innisfil Master Servicing Plan Update to provide wastewater servicing in short- and long- term strategies to accommodate the population and employment growth.

This Class EA followed the planning and design process for Schedule 'B' projects as described in the Municipal Class Environmental Assessment Document (amended 2024), published by the Municipal Engineers Association (MCEA).

Comments
We have reviewed the *Innisfil Heights Sewage Pumping Station 2 Schedule 'B' Municipal Class Environmental Assessment* (draft, prepared by Ainley Group, dated April 2025) and have the

following comments and recommendations to support the documentation of due diligence as it relates to cultural heritage:

We note that Figure 8 (Preliminary Alternatives, page 27) does not align with Figure 3 (IH SPS 2 Study Area, page 14) and Figure 4 (Aerial Map of Study Area, page 15). We recommend that the Study Area be revised to include all areas that were reviewed as part of this process. For example, Alternatives 2D and 3 are not included in the study area as depicted in Figure 3 and 4.

Archaeological Resources
A Stage 1 archaeological assessment (AA, under Project Information Form (PIF) P383-0306-2021 prepared by ASI, dated March 29, 2022) and included in Appendix E of the PFR) was completed for the study area as depicted in Figures 3 and 4 of the draft PFR. It includes Alternatives 1, 2A, 2B and 2C, but not Alternatives 2D and 3. The Stage 1 AA report has been entered into the Ontario Public Register of Archaeological Reports. Stage 2 AA is recommended for parts of the study area.

A Stage 1&2 AA (under PIF P379-0375-2021) and Stage 3 AA (under PIF P379-382-2021) (prepared by Irvin Heritage Inc., dated June 11, 2021) was completed for portions of the study area, which includes Alternatives 2D and 3. The associated report is included in Appendix F and has been entered into the Ontario Public Register of Archaeological Reports. No further archaeological concerns and no further archaeological assessment is recommended.

Built Heritage Resources and Cultural Heritage Landscapes
A Cultural Heritage Report: Existing Conditions and Preliminary Impacts Assessment (prepared by ASI, dated April 2022 and updated March 2025 and included as Appendix G) was completed for the study area as depicted in Figures 3 and 4. The Cultural Heritage Report identified four potential cultural heritage landscapes (CHLs) within the study area.

We have reviewed the above referenced Cultural Heritage Report and find that the report is overall consistent with the requirements, guidance and standards of the Municipal Class Environmental Assessment and with best practice guidance prepared by MCM. However, we recommend that the study area be revised to include all alternatives (see comment above) and confirm whether the recommendations are still valid.

We have included more detailed comments to assist in documenting due diligence as it relates to cultural heritage.

Thank you for consulting MCM on this. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Jackson Kaufman
Heritage Planner
jackson.kaufman@ontario.ca

Copied to: Jenna DeGroote, Capital Project Manager, InnServices
Beth Wang, Engineering Intern, Ainley
Chunmei Liu, Environmental Resource Planner & EA Coordinator, Central Region, MECP
EA Notices to Central Region, MECP
Karla Barboza, Team Lead, Heritage Planning Unit, MCM

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the Ontario Heritage Act

The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

Comment #	Reference to PFR	Comment	Proposed Action/Solution
1.	Figure 3 – IH SPS 2 Study Area Page 14 Figure 4 – Aerial Map of Study Area Page 15 Figure 8 – Preliminary Alternatives	We note that Figure 8 (Preliminary Alternatives, page 27) does not align with Figure 3 (IH SPS 2 Study Area, page 14) and Figure 4 (Aerial Map of Study Area, page 15). We recommend that the Study Area be revised to include all areas that were reviewed as part of this process. For example, Alternatives 2D and 3 are not included the study area as depicted in Figure 3 and 4.	Revision to report
2.	3.4 Cultural Environment Page 22	Cultural heritage resources include archaeological resources, built heritage resources (BHRs) and cultural heritage landscapes (CHLs). The term 'cultural heritage resources' should be used when referring to all three types, and the correct term should be used when referring to each type of resources. We recommend revising the terminology throughout the PFR.	We recommend that information about archaeological assessment be moved to under Section 3.4.1 and an introductory paragraph be included under Section 3.4: Cultural heritage resources include archaeological resources, built heritage resources and cultural heritage landscapes.
3.	3.4.1 Stage 1 Archaeological Study Page 22	See comment above and in the cover letter. This section should focus on the ASI report (PIF P383-0306-2021, Appendix E). This section should be based on the archaeological assessment (AA) report(s) completed and include: • A brief overview of all the stages of archaeological assessment undertaken (e.g. Stage 1, 2, 3, 4) • The objective of that stage of assessment (e.g. A Stage 1 AA is a background study to determine area(s) of archaeological potential, a Stage 2 AA is a property assessment to determine whether archaeological resources might be present etc.) • The outcomes (conclusions and recommendations) of the AA are to be articulated in the PFR. If archaeological potential or resources are present, the AA would	We recommend that the paragraph be replaced as follows: A Stage 1 archaeological assessment was undertaken under Project Information Form P383-0306-2021 in March 2021 by ASI for Sewage Pumping Station #2 (Lot 5 and Lot 6, in Concession 6 and Concession 7, Former Township of Innisfil, County of Simcoe). A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological

Comment #	Reference to PFR	Comment	Proposed Action/Solution
		recommend further archaeological assessment to be undertaken (up to a Stage 4). If there is no archaeological potential or resources present the AA would clearly state that the area specified (and mapped) has no further archaeological concerns. NOTE: The conclusions/recommendations are typically included in the Executive Summary of the AA and should be reiterated (cut and paste) in the PFR. • If the Stage 1 AA determined that the study area includes areas of archaeological potential, the EPR will include the map(s) from the AA report showing those areas. • The AA report(s) and MCM letter(s) indicating that the report(s) has been entered into the Ontario Public Register of Archaeological Reports should be appended to the PFR. We also recommend that a map be included depicting the areas assessed by the two AA reports.	assessment (e.g. Stage 2-4) as necessary. The Stage 1 AA is included in Appendix E. [Then include the outcomes and recommendations of the report, as in Executive Summary] A Stage 1, 2 & 3 archaeological assessment was undertaken under PIFs P379-0375-2021 & P379-0382-2021 on June 11, 2021 by Irvin Heritage (located on part of Lot 6, Concession 7, Town of Innisfil, Simcoe Region). A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MCM to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g. Stage 2-4) as necessary. A Stage 2 AA consists of a survey by the licensed archaeologist to identify any archaeological resources on the property (or study area). The archaeologist will determine whether any archaeological resources found are of sufficient cultural heritage value or interest to require Stage 3 assessment. A Stage 3 AA consists of a determination by the archaeologist of the dimensions of the archaeological site, an evaluation of its cultural heritage value or interest and, where necessary, a recommendation for Stage 4 mitigation strategies. The Stage 1, 2 & 3 AA is included in Appendix E. [Then include the outcomes and recommendations of the report]

Comment #	Reference to PFR	Comment	Proposed Action/Solution
4.	3.4.2 – Cultural Heritage Resources Page 22	See comment #1 related to terminology and comment in the cover letter related to study area. Given that archaeological resources are discussed in the antecedent section (3.4.1), this section should be renamed to capture the Built Heritage Resources and Cultural Heritage Landscapes and focus on that aspect of the environment.	Revise section title and corresponding table of contents as follows: 3.4.2 – **Built Heritage Resources and Cultural Heritage Landscapes** **Replace** A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment was undertaken in April 2022 (revised in March 2025) by ASI for Innisfil Heights Sewage Pumping Station 2. The assessment for this report consisted of data collection, background historic research, review of secondary source material and field review. A total of 4 potential cultural heritage landscapes ~~and built heritage resources~~ were identified within the study area. (See Figure 7)
5.	6.2 – Detailed Evaluation Criteria Page 28	Per comment #1, the language used in the evaluation criteria should be amended to differentiate between cultural heritage resources and built heritage resources and cultural heritage landscapes.	Revise bullets point as follows: • *Cultural and Social Environment*: Archaeological Resources, Built Heritage Resources, Cultural Heritage **Landscapes** ~~Resources~~, Aesthetics (Noise, Odour, Visibility), Impacts to Property Owners, and Impacts to Adjacent Business/Commercial Properties.
6.	Table 3 -- Evaluation Matrix for Six Alternative Page 30	See comment #1 regarding terminology and cover letter for status of archaeological assessments. Stage 1, 2 & 3 (under PIFs P379-0375-2021 & P379-0382-2021) include Alternatives 2D and 3. No further archaeological assessment is recommended.	Review as follows: Evaluation Criteria: Archaeological **Resources** Description of Effects: All Alternative site locations ~~(with the exception of Alternative 2D)~~ have been previously assessed and require no further work. ~~An archaeological assessment of alternative 2D will be required~~.

Comment #	Reference to PFR	Comment	Proposed Action/Solution
7.	Table 3 -- Evaluation Matrix for Six Alternative Page 30	Per comment #1 the language used in the evaluation matrix should be amended to differentiate between cultural heritage resources and built heritage resources and cultural heritage landscapes. The text should also be amended for clarity when describing site geography.	Revise row title and description as follows: Evaluation Criteria: **Built Heritage Resources and** Cultural Heritage ~~Resources~~ **Landscapes** Description of Effects**:** The northern portion of alternative 1 is in close proximity to a cultural heritage landscape. As well Alternatives 2A and 2B surround a cultural heritage landscape. The remaining three alternatives are not adjacent to any identified cultural heritage **landscapes** ~~resources.~~ **There are no built heritage resources inventoried within the study area."**
8.	6.4.3 – Cultural and Social Environment Evaluation. Page 32	Following comment #1 and #4 the language used in the evaluation discussion should be amended to differentiate between cultural heritage resources and built heritage resources and cultural heritage landscapes.	Revise text as follows: a) Archaeological **Resources** b) **Built Heritage Resources** and Cultural Heritage ~~Resources~~ **Landscapes** The northern section of Alternative 1 is situated near a potential cultural heritage landscape (CHL 1 or CHL 2). Furthermore, both Alternatives 2A and 2B include a potential cultural heritage landscape (CHL2). In contrast, the other three alternatives (2C, 2D and 3) [*to be confirmed as the study area does not align with Figure 8 – see also comment above]* do not have any potential **built heritage resources** or cultural heritage **landscapes** ~~resources~~ in their proximity.
9.	8.1 – Preferred Site Location Page 42	See comment #1 regarding terminology. Conservation means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. (Provincial Planning Statement, 2024)	Revise text as follows: • Conservation of Cultural Heritage **Resources**: Potential impacts on identified cultural heritage resources have not been identified on the preferred Site Location (Alternative 2D), reducing the need for additional technical cultural heritage studies. A Stage

Comment #	Reference to PFR	Comment	Proposed Action/Solution
		Preservation means the action or process of protecting, maintaining, and/or stabilizing the existing materials, form and integrity of a heritage property, or of an individual component, while protecting its cultural heritage value and is one of three conservation treatments.	1, 2 & 3 AA (PIFs P379-0375-2021 & P379-0382-2021, by Irvin Heritage Inc.) has been carried out which includes the preferred Site Location. No further archaeological assessment was recommended.
10.	10.7—Archaeological Resources Page 50	This section should be revised to align with current legislative framework, including ministry names and correct contact.	Revise text as follows: The Stage **1, 2 & 3** Archaeological Assessment report **(under PIF P379-0375-2021 & P379-0382-2021 and included as Appendix F)** indicated that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried arch**a**eological deposit. ~~In the event that archaeological remains are found during subsequent construction activities, the contractor should be advised to stop work immediately and take the appropriate actions as noted below~~: • Should previously **undocumented** ~~unknown or un-assessed deeply buried~~ archaeological resources be **discovered** ~~uncovered~~, they may be a new archaeological site and; therefore, subject to section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out **an** archaeological **assessment** ~~fieldwork~~, in compliance with section 48 (1) of the Ontario Heritage Act. ~~The Heritage Operations Unit of the Ministry of Culture must be immediately notified at 807-468-2450.~~ • The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the

Comment #	Reference to PFR	Comment	Proposed Action/Solution
			coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*. ~~In the event that human remains are encountered, the proponent or person discovering human remains must immediately notify the police or coroner and the Registrar of the Bereavement Authority of Ontario at 647-483-2645 or 1-807-468-2450. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources~~.
11.	10.8 – Built Heritage and Cultural Landscapes Page 50	See comment #1 regarding terminology. The recommendations should align with the Cultural Heritage Report (included in Appendix G).	Revise section as follows: 10.8 Built Heritage **Resources** and Cultural **Heritage** Landscapes There is a low potential to impact ~~existing~~ potential cultural heritage ~~resources~~ **landscapes identified in the Cultural Heritage Report (Appendix G)**. The following mitigation will assist in avoiding ~~and~~ **any** direct or indirect impacts. • Staging and construction activities should be suitably planned **and undertaken** to avoid **unintended negative** impacts to ~~an adjacent~~ identified **cultural heritage** resource**s**. **Avoidance measures may include, but are not limited to: erecting temporary**

Comment #	Reference to PFR	Comment	Proposed Action/Solution
			fencing, establishing buffer zones, issuing instructions to construction crews to avoid identified cultural heritage resources, etc. • 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 **cultural** heritage resources. • **The Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment should be submitted to the Town of Innisfil 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. The final report should be submitted to the Town of Innisfil for their records.**
12.	Appendix G: Cultural Heritage Report Figure 1: Location of the study area Page 16	See comment #1 and cover letter regarding the study area. The study area should include all alternatives, including alternative 2D and 3. Other maps in the report will need to be revised accordingly.	Revision to report.
13.	Appendix G: Cultural Heritage Report Section 2.4.2 – Community Information Gathering Page 21	Revise subheading: the deletion of the term 'Community' from the 2.4.2 section title is recommended. Note that the Ministry is not considered a community member, but rather a member of the Government Review Team under an environmental assessment process and the administrator of the Ontario Heritage Act.	Revise section title as follows: "2.4.3 -- ~~Community~~ Information Gathering"

Comment #	Reference to PFR	Comment	Proposed Action/Solution
14.	Appendix G: Cultural Heritage Report Section 2.5. – Community Engagement Page 22	We recommend that this report be submitted for review and comment to the municipality (planner assigned to the heritage portfolio and its municipal heritage committee) if you haven't done already.	Indicate in the section if the Cultural Heritage Report has been submitted to the municipality for review.
15.	Appendix G: Cultural Heritage Report Section 5.0 – Preliminary Impact Assessment Pages 46 - 47	See comment #1 regarding the study area. We recommend that a map be included in this section depicting all the alternatives, and highlighting the preferred alternative and site location.	Revision to report.

Consultation Records with First Nations

Chippewas of Georgina Island First Nation

From:	Jody Marks
To:	donna.bigcanoe@georginaisland.com
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:10:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Chippewas of Georgina Island First Nation.pdf image003.png

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner



Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	donna.bigcanoe@georginaisland.com
Cc:	k.a.sandy-mckenzie@rogers.com; jdegroote@innservices.co; Preya Balgobin; Wendy Smeh
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:29:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image003.jpg

---

Dear Chief Donna Big Canoe,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From:	Jody Marks
To:	tedw@ramafirstnation.ca
Cc:	shardayj@ramafirstnation.ca; k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:11:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Chippewas of Rama First Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Chippewas of Rama First Nation

Beth Wang

From: Sharday James <shardayj@ramafirstnation.ca>
Sent: January 21, 2022 10:05 AM
To: Jody Marks
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello,
Thank you for your email. At this time we have no comments but we ask that you keep us informed and send us any reports as the project moves forward.

Cheers,
Sharday James

Sharday James
Community Consultation Worker, Lands and Membership
Chippewas of Rama First Nation
(ph) 705-325-3611,1633
(cell)
(fax)
(url) www.ramafirstnation.ca

This email is intended only for the named recipient(s) and may contain information that is privileged, confidential and/or exempt from disclosure under applicable law. No waiver of privilege, confidence or otherwise is intended by virtue of communication via the internet. Any unauthorized or copying is strictly prohibited. If you have received this e-mail in error, or are not named as a recipient, please immediately notify the sender and destroy all copies of this e-mail.

By submitting your or another individual's personal information to Chippewas of Rama First Nation, its service providers and agents, you agree and confirm your authority from such other individual, to our collection, use and disclosure of such personal information in accordance with our privacy policy.

Please consider the environment before printing this e-mail.

From: Jody Marks <jody.marks@ainleygroup.com>
Sent: January 20, 2022 4:11 PM
To: Chief Ted Williams <tedw@ramafirstnation.ca>
Cc: Sharday James <shardayj@ramafirstnation.ca>; k.a.sandy-mckenzie@rogers.com; Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Subject: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	tedw@ramafirstnation.ca
Cc:	shardayj@ramafirstnation.ca; k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:31:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image003.jpg

Dear Chief Ted Williams,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Beth Wang

From: Beth Wang
Sent: March 13, 2025 11:50 AM
To: Ben Cousineau
Cc: 'k.a.sandy-mckenzie@rogers.com'; Jenna DeGroote; Wendy Smeh; Preya Balgobin
Subject: FOLLOW-UP: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report
Attachments: 7131 5th Sideroad - Archaeological Assessment.pdf

Good morning Ben,

Hope all is well!

On February 13, 2025, we submitted the archaeological assessment for IH SPS 2 completed by the property owner to Chief Ted Williams.
Subsequently, we received direction from Karry Sandy indicating that all consultation-related documents should be submitted to you.

Accordingly, I am forwarding the report and following up on its review. Please let us know if you have any questions or comments.

Regards,

Beth Wang, EIT
Engineering Intern

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Beth Wang
Sent: February 13, 2025 9:49 AM
To: tedw@ramafirstnation.ca
Cc: k.a.sandy-mckenzie@rogers.com; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report

Dear Chief Ted Williams,

Hope all is well!

Further to your interest in Innisfil Heights SPS 2, we have been working closely with the property owner and their engineering team regarding the proposed location for the station. As part of their development plans, the property owner's engineers have conducted archaeological assessments on the site, including a Stage 2 Archaeological Assessment. They have kindly agreed to share this report with us for the purposes of the Class EA.

As requested, we are providing this report for your review and comments. Based on the findings, there appear to be no archaeological concerns at the proposed SPS location.
Please let us know if you have any questions or require further clarification.

Regards,

Beth Wang, EIT
Engineering Intern

Ainley

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Beausoleil First Nation

From:	Jody Marks
To:	consultations@chimnissing.ca
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:09:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Beausoleil First Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	council@chimnissing.ca; consultations@chimnissing.ca
Cc:	k.a.sandy-mckenzie@rogers.com; jdegroote@innservices.co; Preya Balgobin; Wendy Smeh
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:26:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image002.jpg

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Curve Lake First Nation

Outlook

121031-Innisfil Heights Sewage Pumping Station 2 - Notice of Study Commencement

From Wendy Smeh <wendy.smeh@ainleygroup.com>
Date Mon 2022-01-24 2:32 PM
To EmilyW@curvelake.ca <EmilyW@curvelake.ca>; Julie Kapyrka <JulieK@curvelake.ca>; Kaitlin Hill <KaitlinH@curvelake.ca>; k.a.sandy-mckenzie@rogers.com <k.a.sandy-mckenzie@rogers.com>
Cc jdegroote@innservices.co <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>

2 attachments (619 KB)
IH SPS 2 Notice of Study Commencement.pdf; Notice of Study Commencement-Cover Letter, Curve Lake First Nation.pdf;

Dear Chief Emily Whetung,

Further to discussion with Curve Lake FN regarding the formation of a Joint Consultation Committee, we are providing the Notice of Study Commencement for Innisfil Heights Sewage Pumping Station No. 2.

This is the fifth and final Notice of Study Commencement that is a part of the InnServices Five Sewage Pumping Stations EA and preliminary design project.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Sent: November 5, 2021 6:43 PM
To: Kaitlin Hill <KaitlinH@curvelake.ca>
Cc: jdegroote@innservices.co; Julie Kapyrka <JulieK@curvelake.ca>; Wendy Smeh <smeh@ainleygroup.com>; Jody Marks <marks@ainleygroup.com>
Subject: 121031-Innisfil Heights: Sewage Pumping Station 6-Curve Lake-Response

Hello Kaitlin,

Thank you for providing Curve Lake First Nation's feedback on the Class EA for the Innisfil Heights Sewage Pumping Station 6. Please find attached, our responses to the comments and questions.

The study team is open to the formation of a Joint Consultation Committee, if Curve Lake First Nation considers the nature of our project to be appropriate for joint consultant. Please advise and we will reach out to you to discuss.

Should there be additional questions or comments please feel free to contact us.

Regards,

Preya Balgobin, P.Eng.
Senior Project Manager



[www.ainleygroup.com]www.ainleygroup.com
Tel: (905) 452-5172 Ext. 209
Cell: (289) 541-8766

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Wendy Smeh
To:	Preya Balgobin; Jody Marks; Kaitlin Hill; Francis M. Chua; Kayla Wright; Jenna DeGroote; Julie Kapyrka; Gary Pritchard
Subject:	RE: InnServices Sewage Pumping Station EA"s Consultation Rightsholder Progress Meeting
Date:	June 30, 2022 11:04:00 AM
Attachments:	InnServices - 5 SPS EA - Curve Lake Meeting Minutes June 2 2022.pdf image003.png

---

Good Morning All,

Attached please find the minutes of the Rightsholder meeting of June 2, 2022.

If you find any errors or omissions, please do not hesitate to let us know.

Regards,
Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com
WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

-----Original Appointment-----

From: Wendy Smeh

Sent: May 4, 2022 2:26 PM

To: Wendy Smeh; Preya Balgobin; Jody Marks; Kaitlin Hill; Francis M. Chua; Kayla Wright; Jenna DeGroote; Julie Kapyrka; Gary Pritchard

Subject: InnServices Sewage Pumping Station EA's Consultation Rightsholder Progress Meeting

When: June 2, 2022 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Learn More | Meeting options

From:	Francis M. Chua
To:	Jenna DeGroote; Wendy Smeh; Cieslak, Kathleen
Cc:	Kayla Wright
Subject:	CLFN Land Acknowledgement
Date:	June 30, 2022 4:01:10 PM
Attachments:	curve_lake_first_nation_land_acknowledgement_2018_copy.pdf

---

Hi! Thanks for meeting. Here is the standard CLFN land acknowledgement. It comes across better when it is personalized. Talk about what reconciliation means to you and where you are in your journey. Talk about all of this with humility and an open posture.

Sharing in a meal helps build relationships. Gift giving is another important cultural gesture (we can cross that bridge in the future).

This is where I ended up getting tobacco. Impart your good energies, your good thoughts, your hopes for the relationship as you create the tie, as you hold the tie in your left hand, and as you offer it with thanks.

https://motherearthtobacco.com/

Happy long weekend!

~ Francis
P.S. One measure of a good meeting is when they say...see you later...see you next time...till next time in their language. Let's see if that happens here. Best wishes to you all and thank you for everything you do.

MEETING MINUTES

195 County Court Boulevard, 3rd Floor
Brampton, ON L6W 3W8
Tel: (905) 595-6862
E-mail: brampton@ainleygroup.com

INNSERVICES UTILITIES INC.
MCEA & PRELIMINARY DESIGN FOR FIVE SEWAGE PUMPING STATIONS
CURVE LAKE FIRST NATIONS RIGHT'S HOLDER MEETING

PROJECT:	InnServices Utilities Inc. P-21-CWW286 287DN 252DN 288DN 292DN Engineering Services for Municipal Class Environmental Assessment and Preliminary Design for Five (5) Sewage Pumping Stations Ainley Job No. 121031
DATE:	June 2nd, 2022
TIME:	2:00 pm to 3:00pm
LOCATION	Teams Meeting
PRESENT:	Francis M. Chua, Curve Lake First Nation Kayla Wright, Curve Lake First Nation Jenna DeGroote, InnServices Preya Balgobin, Ainley Group Wendy Smeh, Ainley Group Gary Pritchard, 4 Directions Conservation
DISTRIBUTION:	ALL PRESENT Julie Kapyrka, Curve Lake First Nation Jody Marks, Ainley Group Kaitlin Hill, Curve Lake First Nation

1. Status of Curve Lake Review

Curve Lake confirmed that the environmental constraint reports have been reviewed. Ainley noted that there is still one report (for sewage pumping station 2) that has not yet been submitted by Azimuth. Ainley will provide when available.

Action by Ainley

Once the dates of additional field studies are being discussed, Ainley will provide Curve Lake with the opportunity to join the field review. If Curve Lake cannot attend the site visit, field notes and observations should be provided in advance of the report so that Curve Lake has something to compare the report to. When corresponding about the field studies the dates, times and topic, as well as the address of the specific

property should be identified. The review will provide additional knowledge from the perspective of indigenous rights.

Action by Ainley

The archeological and built heritage reports are in queue for review but have not yet been reviewed due to internal staffing issues. Ainley noted that the review of the reports for Innisfil Heights sewage pumping station 6 is the highest priority because it is the first EA in the sequence of the project schedule. The virtual Public Information Centre for the EA was made public on April 21st, 2022. Following that, the public comment period was until May 12th, providing the public and stakeholders with the opportunity to comment on the preliminary recommendation. The project file report will be finalized and additional studies undertaken prior to the issuance of the notice of study completion. There will be another opportunity to comment following the notice of study completion. Ainley asked when Curve Lake would have the opportunity to comment on the IH SPS 6 reports. Curve Lake was not certain.

Action by Curve Lake/ 4 Directions

It was noted that Ainley is now working on the 20th Sideroad SPS EA. The PIC will be made public on June 20th at which time a site will be recommended. InnServices inquired about whether Curve Lake would feel comfortable with a recommendation being made before they can review the reports. Curve Lake indicated that they would be okay with the PIC taking place.

It was discussed that the PIC and resulting 'recommended alternative' show the public what has been looked at, what alternative provides the least impact, and allows the public, rightsholders and stakeholders to provide input. It is not a final decision.

Ainley provided an overview of the PIC boards for IH SPS 6 to Curve Lake to describe the selected sites and why the decision was made to choose the recommended site solution. Ainley offered to go through all future PIC material directly with Curve Lake, via a virtual meeting/presentation in order to facilitate consultation with Curve Lake. The suggestion was accepted. A date will be selected to review IH SPS and 20th Sideroad information.

Action by Ainley/ Curve Lake

It was discussed that a land acknowledgement is a meaningful way to begin every meeting. The next meeting will begin with a land acknowledgement.

2. Adjournment
3:00pm

Any errors and/or omissions from these Minutes should be reported to the undersigned as soon as possible.

Minutes prepared by:

Wendy Smeh, C.E.T., PMP
Ainley & Associates Limited

C:\Users\wsmeh\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\T5SI6766\121031-Innisfil 5 SPS EA-Curve Lake Meeting Minutes June 2022-ppb.docx

Government Services Building
22 Winookeedaa Road
Curve Lake, Ontario K0L1R0

Phone: 705.657.8045
Fax: 705.657.8708
www.curvelakefirstnation.ca

CURVE LAKE FIRST NATION
LAND ACKNOWLEDGEMENT

Curve Lake First Nation is pleased to provide an appropriate and approved land acknowledgement for use in various organizations, agencies, and educational institutions. Please enjoy the use of the following land acknowledgement:

(Insert the name of your organization in the blanks).

"We respectfully acknowledge that _____ is located on the Treaty 20 Michi Saagiig territory and in the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations, which include: Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations.

_____ respectfully acknowledges that the Williams Treaties First Nations are the stewards and caretakers of these lands and waters in perpetuity, and that they continue to maintain this responsibility to ensure their health and integrity for generations to come."

Yours sincerely,

Chief Phyllis Williams
Curve Lake First Nation

From:	Francis M. Chua
To:	Wendy Smeh
Cc:	Preya Balgobin; Jenna DeGroote
Subject:	Re: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes - Revisions
Date:	August 9, 2022 3:32:23 PM
Attachments:	image001.png image002.png image004.png

Hi Wendy.

Sorry for my delay. I reviewed it. I think it is good enough. Thank you for making the effort to incorporate the items/issues.

Give me a little bit more time, I will make sure that Gary is aware of it first before it gets finalized. I've let him know that I am good with what has been subsequently written.

Thanks.

~ Francis

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Wednesday, August 3, 2022 4:49 PM
To: Francis M. Chua <francis@francischua.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>
Subject: RE: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes - Revisions

Hi Francis,

Just checking in to see if you have any comments or questions related to the revised meeting minutes? Let me know. Once confirmed we will reissue them to all parties.

Regards,
Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com
WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Wendy Smeh
Sent: July 22, 2022 3:48 PM
To: Francis M. Chua <francis@francischua.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>
Subject: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes - Revisions

Hi Francis,

We are providing revised minutes of the last Rightsholder meeting as requested. The additional comments are shown in red for ease of reference. Please review and advise if it meets your satisfaction. If so, I will finalize the minutes as a PDF and send them out to all parties.

Feel free to make revisions directly on the word document using 'track changes' for consideration. You can also call me on my cell phone to discuss further.

Have a good weekend.

Regards,
Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com
WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Francis M. Chua <francis@francischua.com>
Sent: May 11, 2022 5:15 PM
To: Kayla Wright <kayla@francischua.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Julie Kapyrka <JulieK@curvelake.ca>; Kaitlin Hill <KaitlinH@curvelake.ca>; Gary Pritchard <gpritchard@4directionsconservation.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jody Marks <jody.marks@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>
Subject: Initial Review: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes

Hello Wendy.

I'm submitting this on behalf of CLFN. This follows along with Kayla's email yesterday.

Thanks.

~ Francis

From: Kayla Wright <kayla@francischua.com>
Sent: Tuesday, May 10, 2022 3:42 PM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>; Julie Kapyrka <JulieK@curvelake.ca>; Kaitlin Hill <KaitlinH@curvelake.ca>; Gary Pritchard <gpritchard@4directionsconservation.com>; Francis M. Chua <francis@francischua.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jody Marks <jody.marks@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>
Subject: RE: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes

Hi Wendy,

Please see attached Schedule D Budget estimate to give us an idea of dollar values. We just placed our typical next to our budgeted values for this project, which encompasses the 5 stations. We would only bill for actuals as the work is done.

Let us know if you have any questions or concerns.

Unfortunately, at this time given some unexpected circumstances, we will not be able to complete the CH and Stage 1AAs for the May 13th deadline but we hope Gary's review of the Environmental files will provide some guidance on the project overall that could be used. We will have that over to you by the end of the week.

Many thanks,

Kayla

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Friday, May 6, 2022 12:56 PM
To: Julie Kapyrka <JulieK@curvelake.ca>; Kaitlin Hill <KaitlinH@curvelake.ca>; Gary Pritchard <gpritchard@4directionsconservation.com>; Francis M. Chua <francis@francischua.com>; k.a.sandy-mckenzie@rogers.com; Kayla Wright <kayla@francischua.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jody Marks <jody.marks@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>
Subject: RE: InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes

Hello All,

Attached please find the Rightsholder meeting minutes of May 5, 2022 for the InnServices Five SPS EA project. Also attached is an updated list of background study report submissions including the date of submission to Curve Lake. A link with the remaining reports is as follows: https://ainleygroup-my.sharepoint.com/:f:/p/wendy_smeh/EnTWxNSSLeBFqC04w81wT9YBAoDo7f-b8yRun-Jg0vxhhA?e=dbnYP1

We also want to confirm who will be reviewing the CH and Stage 1 assessment? Are both done by Curve Lake? We would like to confirm that comments can be provided for the IH SPS 6 reports by May 13th? Let us know.

Please advise if you have any comments or questions.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager



Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
WWW.AINLEYGROUP.COM
The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

MEETING MINUTES

195 County Court Boulevard, 3rd Floor
Brampton, ON L6W 3W8
Tel: (905) 595-6862
E-mail: brampton@ainleygroup.com

INNSERVICES UTILITIES INC.
MCEA & PRELIMINARY DESIGN FOR FIVE SEWAGE PUMPING STATIONS
CURVE LAKE FIRST NATIONS RIGHT'S HOLDER MEETING

PROJECT:	InnServices Utilities Inc. P-21-CWW286 287DN 252DN 288DN 292DN Engineering Services for Municipal Class Environmental Assessment and Preliminary Design for Five (5) Sewage Pumping Stations Ainley Job No. 121031
DATE:	June 2nd, 2022
TIME:	2:00 pm to 3:00pm
LOCATION	Teams Meeting
PRESENT:	Francis M. Chua, Curve Lake First Nation Kayla Wright, Curve Lake First Nation Jenna DeGroote, InnServices Preya Balgobin, Ainley Group Wendy Smeh, Ainley Group Gary Pritchard, 4 Directions Conservation
DISTRIBUTION:	ALL PRESENT Julie Kapyrka, Curve Lake First Nation Jody Marks, Ainley Group Kaitlin Hill, Curve Lake First Nation

1. Status of Curve Lake Review

Curve Lake confirmed that the environmental constraint reports have been reviewed. Ainley noted that there is still one report (for sewage pumping station 2) that has not yet been submitted by Azimuth. Ainley will provide when available.

Action by Ainley

Once the dates of additional field studies are being discussed, Ainley will provide Curve Lake with the opportunity to join the field review. If Curve Lake cannot attend the site visit, field notes and observations should be provided in advance of the report so that Curve Lake has something to compare the report to. When corresponding about the field studies the dates, times and topic, as well as the address of the specific

property should be identified. The review will provide additional knowledge from the perspective of indigenous rights.

Action by Ainley

The archeological and built heritage reports are in queue for review but have not yet been reviewed due to internal staffing issues. Ainley noted that the review of the reports for Innisfil Heights sewage pumping station 6 is the highest priority because it is the first EA in the sequence of the project schedule. The virtual Public Information Centre for the EA was made public on April 21st, 2022. Following that, the public comment period was until May 12th, providing the public and stakeholders with the opportunity to comment on the preliminary recommendation. The project file report will be finalized and additional studies undertaken prior to the issuance of the notice of study completion. There will be another opportunity to comment following the notice of study completion. Ainley asked when Curve Lake would have the opportunity to comment on the IH SPS 6 reports. Curve Lake was not certain.

Action by Curve Lake/ 4 Directions

It was noted that Ainley is now working on the 20th Sideroad SPS EA. The PIC will be made public on June 20th at which time a site will be recommended. InnServices inquired about whether Curve Lake would feel comfortable with a recommendation being made before they can review the reports. Curve Lake indicated that they would be okay with the PIC taking place.

It was discussed that the PIC and resulting 'recommended alternative' show the public what has been looked at, what alternative provides the least impact, and allows the public, rightsholders and stakeholders to provide input. It is not a final decision.

Ainley provided an overview of the PIC boards for IH SPS 6 to Curve Lake to describe the selected sites and why the decision was made to choose the recommended site solution. Ainley offered to go through all future PIC material directly with Curve Lake, via a virtual meeting/presentation in order to facilitate consultation with Curve Lake. The suggestion was accepted. A date will be selected to review IH SPS and 20th Sideroad information.

Action by Ainley/ Curve Lake

It was discussed that a land acknowledgement is a meaningful way to begin every meeting. The next meeting will begin with a land acknowledgement.

2. Adjournment
3:00pm

Any errors and/or omissions from these Minutes should be reported to the undersigned as soon as possible.

Minutes prepared by:

Wendy Smeh, C.E.T., PMP
Ainley & Associates Limited

C:\Users\wsmeh\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\T5SI6766\121031-Innisfil 5 SPS EA-Curve Lake Meeting Minutes June 2022-ppb.docx

From:	Wendy Smeh
To:	Kayla Wright; Francis M. Chua
Cc:	Jody Marks; Jenna DeGroote; Preya Balgobin
Subject:	RE: 121031-InnServices SPS Class EA - PIC Presentations Review Meeting
Date:	August 9, 2022 11:09:00 AM
Attachments:	image002.png image003.png

HI Kayla,

Thanks for find a time that works for everyone. We're available on the 23rd at 10:30pm. Will you be sending a meeting invite or would you like us to provide it?

Regards,
Wendy Smeh, C.E.T., PMP
Project Manager



Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com
WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Kayla Wright <kayla@francischua.com>
Sent: August 8, 2022 2:40 PM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>; Francis M. Chua <francis@francischua.com>
Cc: Jody Marks <jody.marks@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: Re: 121031-InnServices SPS Class EA - PIC Presentations Review Meeting

Hi Wendy,

Apologies for the delay! Trying to gather everyone's availability can be challenging at times.

Would anytime during the day of Friday September 23rd work for you?

Many thanks,

Kayla

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Wednesday, July 27, 2022 1:56 PM
To: Francis M. Chua <francis@francischua.com>
Cc: Jody Marks <jody.marks@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Kaitlin Hill <KaitlinH@curvelake.ca>; k.a.sandy-mckenzie@rogers.com <k.a.sandy-mckenzie@rogers.com>; Kayla Wright <kayla@francischua.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: 121031-InnServices SPS Class EA - PIC Presentations Review Meeting

Hi Francis,

We discussed finding a time to meet to go over the PIC presentations for the InnServices sewage pumping station EA's with Curve Lake. Would you please provide some dates in September that would work for your team.

As well, InnServices' virtual Public Information Centre (PIC) for proposed sewage pumping station, Innisfil Heights SPS 2 (IH SPS2), was posted online as of July 21, 2022. The presentation is available on the InnServices site and the Town Facebook and Youtube pages. The link to the virtual presentation is https://innservices.co/infrastructure-upgrades/environmental-assessments/innisfil-heights-sewage-pumping-station-2.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager



Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: wendy.smeh@ainleygroup.com**

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Beth Wang

From: Francis M. Chua <francis@francischua.com>
Sent: September 29, 2022 1:20 PM
To: Jenna DeGroote; Preya Balgobin; Wendy Smeh; Jody Marks
Cc: KeithK@curvelake.ca; AudreyP@curvelake.ca; Katie Young-Haddlesey; Julie Kapyrka; Kaitlin Hill (Curve Lake) (KaitlinH@curvelake.ca); Paige Williams; Gary Pritchard; info@4directionsconservation.com; Hannah Tosello; Kayla Wright
Subject: CLFN Site Visit: InnServices SPS EA Site Visit
Attachments: Inn Services - CLFN Technical Field Memo - Innisfil Sewage Pumping Stations.pdf

Hello Jenna, Wendy, and team.

Please find attached the site visit memo. Thanks.

~ Francis

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Monday, July 4, 2022 2:29 PM
To: info@4directionsconservation.com <info@4directionsconservation.com>; Gary Pritchard <gpritchard@4directionsconservation.com>; Kayla Wright <kayla@francischua.com>; Francis M. Chua <francis@francischua.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: InnServices SPS EA Site Visit

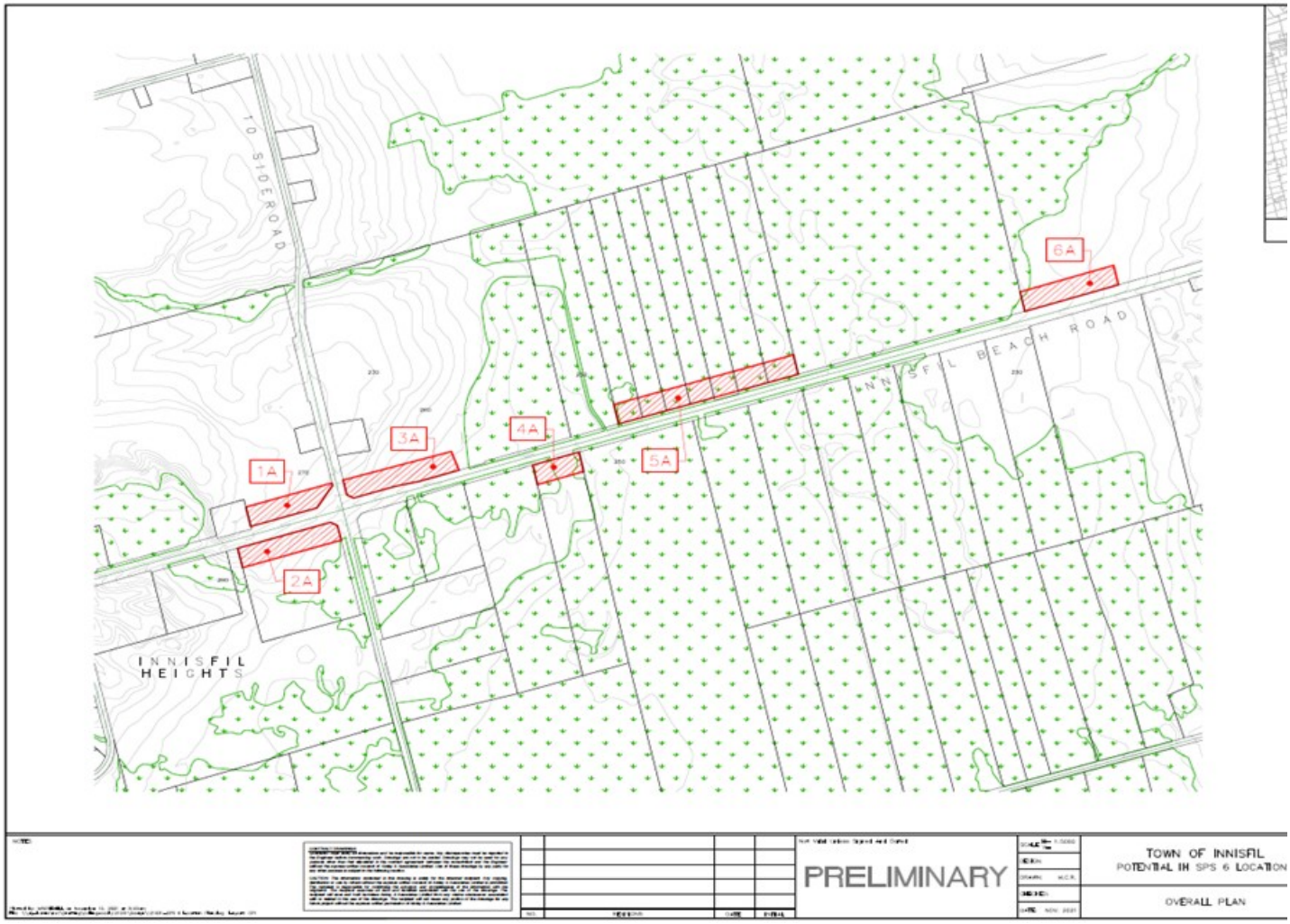
Hi All,

Thank you for meeting with us tomorrow to visit the possible sites for new sewage pumping stations that are a part of the InnServices Five Sewage Pumping Station (SPS) EA's project. We will meet you at the intersection of the 20th Sideroad and 7th Line at 1:00pm as per the meeting invitation.

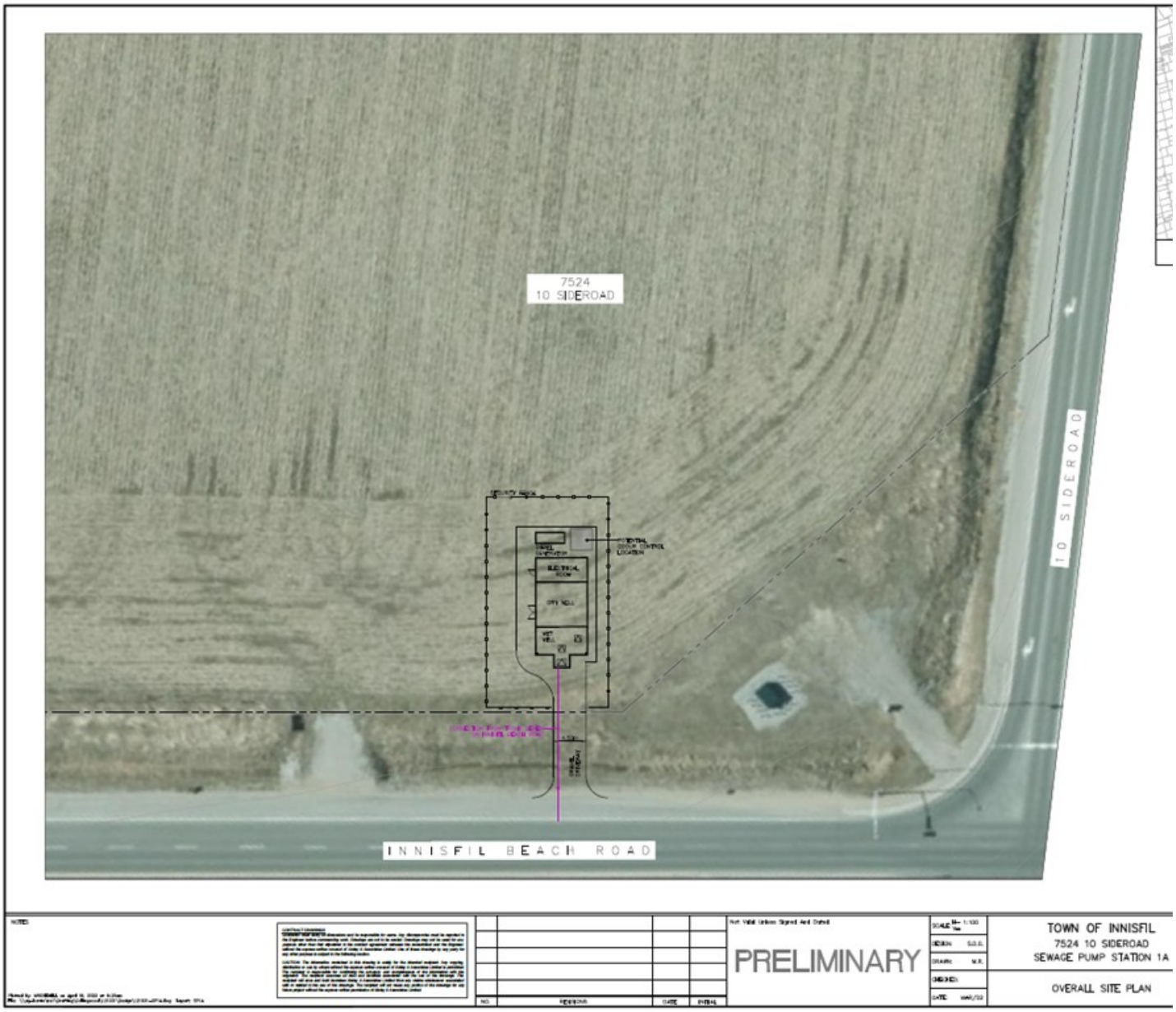
It is anticipated that the sites for Innisfil Heights SPS 6, 20th Sideroad SPS and IH SPS 1 and 2 may be reviewed depending on the time available. We have included site plans showing the locations of properties that were considered in each of the reviews, as well as a brief summary of the sites. We will print a copy of each of the plans to bring to site.

As well, for reference, we have included the typical footprint of a SPS site on the preferred site for SPS 6 (Site 1A) below.

Innisfil Heights Sewage Pumping Station 6 on Innisfil Beach Road
The Master Servicing Plan identifies a SPS on Innisfil Beach Road to servicing the Economic District of Innisfil Heights. The preliminary preference is Site 1A for technical and environmental reasons as outlined on the PIC display boards of April 21, 2022.

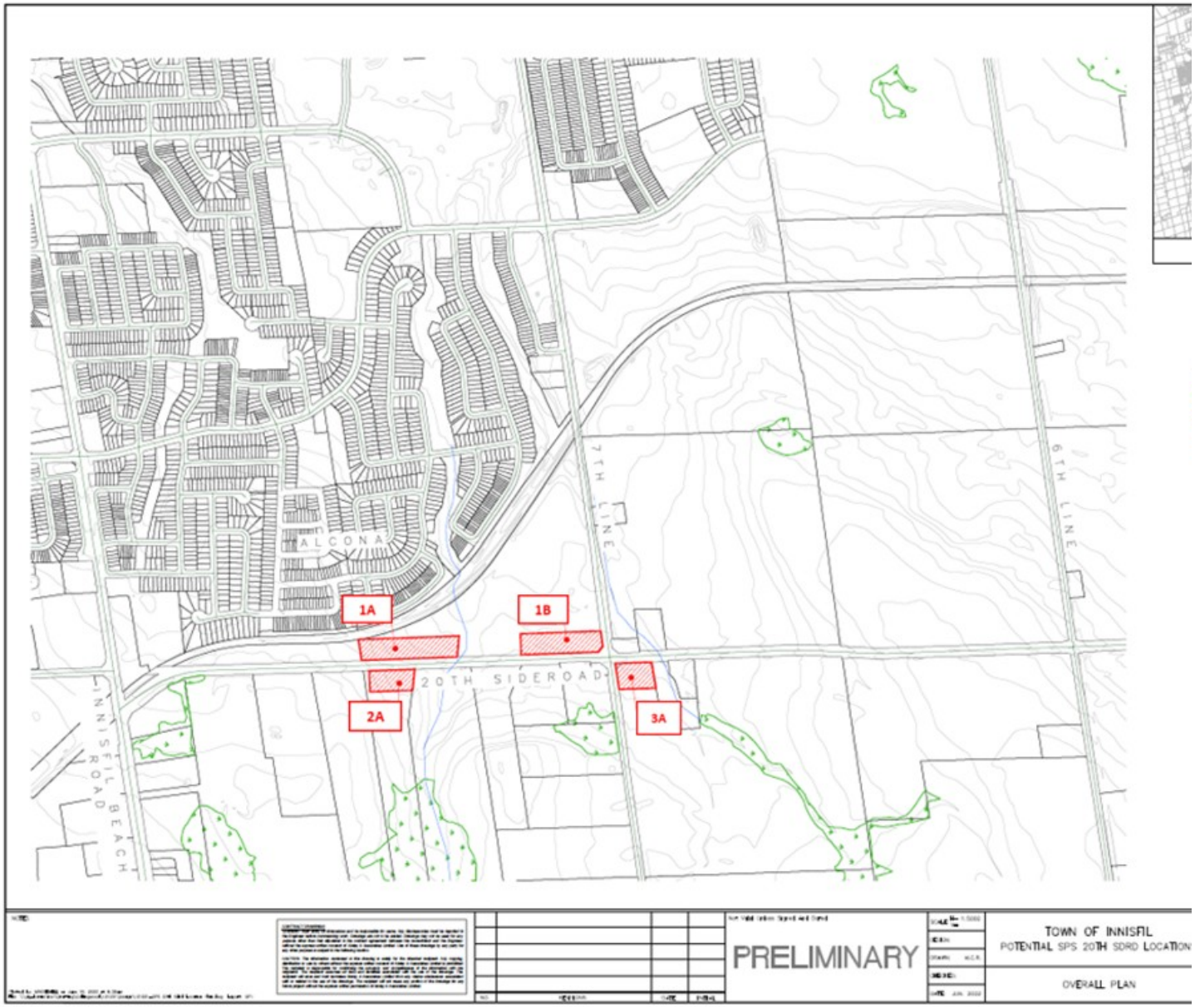


The conceptual drawing below shows an approximate footprint of a SPS site on Site 1A.

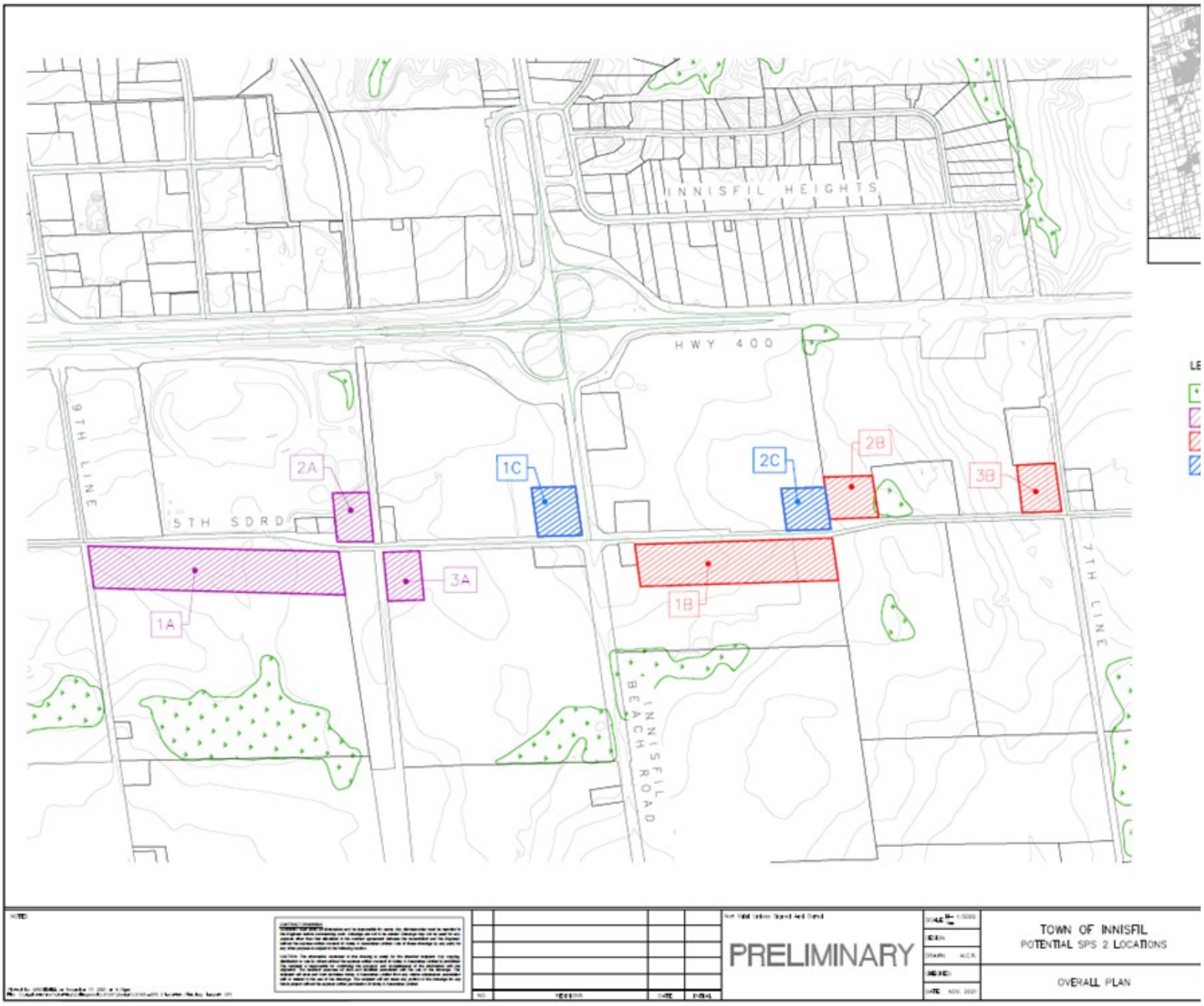


20th Sideroad Sewage Pumping Station Sites

Based on a review of the background reports, Site 1B was presented as the preliminary preferred alternative at the PIC dated June 21, 2022.



Below are the preliminary site alternatives for SPS 1 and SPS 2. The site alternatives are still under review.



Let us know if you have any questions.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Government Services Building
22 Winookeedaa Road
Curve Lake, Ontario K0L1R0

Phone: 705.657.8045
Fax: 705.657.8708
www.curvelakefirstnation.ca

September 29, 2022

Ms. Jenna DeGroote
Capital Project Manager
InnServices Utilities
7251 Yonge Street
Innisfil, Ontario L9S 0J3
Delivered by Email

CC: InnServices & Ainley Group Teams

Dear Ms. DeGroote,

RE: CLFN's Technical Field Memorandum for Town of Innisfil – Innisfil 5 Sewage Pumping Station EAs

On behalf of our Consultation Department at Curve Lake First Nation (CLFN), we are writing to provide the Technical Field Memorandum for the Innisfil 5 Sewage Pumping Stations.

Our Consultation Department has emphasized that environmental protection and sustainability is an integral component of the future of the Curve Lake First Nation. Working with Curve Lake to develop project concept, design, planning, assessment, potential and actual impacts, monitoring, etc. are necessary steps in our process. All plans and activities must be viewed through the lens of environmental protection and sustainability. These requirements ensure that Curve Lake First Nation's interests and rights are being protected within our territory; that we are able to protect the ability to exercise our rights as a people – physically, culturally, and spiritually; that we are able to foster sovereignty, cultural identity, and sustainable succession. This is central to all relationships being progressed with various regulators and proponents.

Curve Lake First Nation is the steward and caretaker of the lands and waters within our territory in perpetuity, as we have been for thousands of years, and we have an obligation to continue to steadfastly maintain this responsibility to ensure their health and integrity for generations to come. Protection, conservation, and sustainable collaborative management are priorities for Curve Lake First Nation.

Curve Lake's vision statement must be central to development in the territory: "Upon the foundation of community values and vision that promotes and preserves our relationship with mother earth, which has defined and will continue to define our identity and culture as Anishnaabe People, the Consultation Department will build and secure the framework for our First Nation lands by putting into place ways and laws that will provide both the protection and the freedom for each person, their family, and the whole community to fulfill their potential. Each way and law will be given the consideration to its importance for our next seven generations."

Government Services Building
22 Winookeedaa Road
Curve Lake, Ontario K0L1R0

Phone: 705.657.8045
Fax: 705.657.8708
www.curvelakefirstnation.ca

Our Consultation Department has accepted the review and recommendations provided by Gary Pritchard, CEO & Indigenous Conservation Ecologist, 4 Directions of Conservation Consulting Services for the Technical Field Memorandum. Please refer to Appendix A for details on the memorandum including recommendations.

We thank you, your team, InnServices and Ainley Group for working with us to understand and incorporate our comments on this Project. We thank you for working with us to create an agreement together and setting aside capacity funding, this will assist in our ability to conduct these reviews and other activities associated with the project.

We do this work to uphold our responsibilities to care for the earth and waters, for our people, our nation, and for all our relations. Our foundational belief is balance; our values and principles are built upon the respect, care, and nurturing of all life as part of an interconnected whole and necessary for the balance and harmony required for Mino-Bimaadiziwin now and for future generations.

Sincerely,

On behalf of The Curve Lake First Nation Consultation Department

Gary Pritchard
Representing Curve Lake First Nation
CEO & Indigenous Conservation Ecologist
4 Directions of Conservation Consulting Services

Francis Chua
Support to CLFN Consultation Department

cc:

- Chief Keith Knott, Curve Lake First Nation
- Curve Lake First Nation Chief and Council
- Katie Young-Haddlesey, Chief Operating Officer, CLFN
- Dr. Julie Kapyrka, Lands & Resources Consultation Liaison, CLFN
- Kaitlin Hill, Lands & Resources Consultation Liaison, CLFN

Government Services Building
22 Winookeedaa Road
Curve Lake, Ontario K0L1R0

Phone: 705.657.8045
Fax: 705.657.8708
www.curvelakefirstnation.ca

Appendix A: Technical Field Memorandum

Technical Field Memorandum

Ecological Features of Site ~ Innisfil Heights SPS

Date: September 29th, 2022 **Project No.:** 22-187

Project Name: Innisfil Heights Sewage Pumping Station

Client Name: InnServices - Town of Innisfil

Submitted To: Curve Lake First Nation Consultation Department

Submitted By: Hannah Tosello, Aquatic Biologist

Dear Julie and Katie,

Here are some generalist notes from 4 Directions site visit on July 5th, 2022, about the land base and ecology around the proposed sewage pumping station and its alternative sites.

Ecoregions and Vegetation Communities

The footprint of the project is within Ecoregion 6E, the Lake Simcoe-Rideau Ecoregion. This ecoregion is the second most densely populated ecoregion in Ontario. However, there are 27 types of natural heritage areas located in this ecoregion. Within this Ecoregion the underlying bedrock is Paleozoic dolomite and limestone, and the surface is gently undulating to rolling terrain. The mineral substrates in this ecoregion also have a high capability to buffer acidic atmospheric deposition before reaching surface water.

Most of the ecoregion (57%) exists as cropland and pasture and abandoned fields. Deciduous, coniferous, and mixed forest cover make up 30.1% respectively. Water only makes up 4% of this ecoregion.

This ecoregion is bounded by Lake Huron, Georgian Bay, Lake Ontario, the St. Lawrence River, and the Ottawa River. Located within the Great Lakes Watershed, this ecoregion is generally well drained.

Major Trees and Shrub Species

Within this ecoregion, vegetation is relatively diverse. The 30.1% of forest cover is comprised of hardwood forests dominated by sugar maple, American beech, white ash, eastern hemlock, and numerous other species are found. Lowlands, including rich floodplain forests, contain green ash, silver maple, red maple, eastern white cedar, yellow birch, balsam fir, and black ash.

Within and surrounding the sites visited, tree species consisted of Manitoba maple, red maple, sugar maple, eastern cedar, and white pine.

The typical shrub layer during the site visit consisted of staghorn sumac, buckthorn, dogwood, and hawthorn.

Understory mainly consisted of goldenrods, burdock, garlic mustard, asters, mullein, wild parsnip, wild grape, white clover, stinging nettle, vetches, sedges, fern species.

It should be noted that all hardwood forests have cultural significance and are granted protections through the treaty making process. This includes the hardwood forest stands comprising of Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Eastern Hemlock (*Tsuga Canadensis*), Green Ash (*Fraxinus pennsylvanica*), Red Maple (*Acer rubrum*), Eastern White Cedar (*Thuja occidentalis*), Yellow Birch (*Betula alleghaniensis*), Balsam Fir (*Abies balsamea*), and Black Ash (*Fraxinus nigra*).

However, this cannot be considered as a plant inventory of the site, since these are just generalist observations made in the field day.

Species Richness

Within this ecoregion, species are quite diverse. Within the ecoregion mammals include white-tailed deer, Northern raccoon, striped skunk, and woodchuck.

Wetland habitats are used by many species of water birds and shorebirds, including wood duck, great blue heron, and Wilson's snipe.

Open upland habitats are used by species such as field sparrow, grasshopper sparrow, and eastern meadowlark. Upland forests support populations of species such as hairy woodpecker, wood thrush, scarlet tanager, and rose-breasted grosbeak.

Reptiles and amphibians found in this ecosystem include American bullfrog, northern leopard frog, spring peeper, red-spotted newt, snapping turtle, eastern gartersnake, and common watersnake.

Characteristic fish species in the ecoregion include the white sucker, smallmouth bass, walleye, northern pike, yellow perch, rainbow darter, emerald shiner, and pearl dace.

From talking to local community members and data base searches there appears to be the following with potential within the footprint of the project:

- Species of mammals include those most common among this ecoregion
- 333 species of bird in Simcoe County
- 12 species of reptiles and amphibians including green frog, and American bullfrog (Cultural Keystone Species)
- And 26 fish species including possible Brook trout (Cultural Keystone Species)

Observed Species on Site

During the site visit, 4 Directions staff observed directly or observed evidence of species within the site visit properties. These species include:

Turkey Vulture	Northern cardinal
American Crow	American robin
Blue Jay	Red-winged black bird
Song sparrow	

Concerns from Field Visit

4 Directions visited all the sites for each proposed alternative for this project. We have therefore broken up our concerns between all the alternatives from 1-3. The concerns are as follows:

Alternative 1

1. The Lawson drain traverses the site where the Nottawasaga Valley Conservation Authority watershed property is. 4 Directions is concerned about potential impacts to this watercourse and the fish species within it. The Michi Saagiig have inherent and treaty rights to fish the waters of their territories. The Lawson drain is a part of the Simcoe watershed and the watercourses commonly used by the Michi Saagiig. Any negative impact to any of the watercourses in the territory is seen as an infringement upon the Michi Saagiig rights to the waters.

Alternative 2A

1. The southern edge of the property is bordered by a wetland community. Under the Williams Treaty, all wetlands within the territory are afforded rights and protections. This wetland on the south edge of the site must be afforded a 120 m buffer from the proposed development site. This is to protect the wetland, the species within it and the Michi Saagiig rights. Any impact to this wetland is an infringement upon the Michi Saagiig Treaty rights.

Alternative 2B

1. At the south border of the site there is a watercourse that crosses the site. 4 Directions is concerned about potential impacts to this watercourse and the fish species within it. The Michi Saagiig have inherent and treaty rights to fish the waters of their territories. These watercourses are commonly used by the Michi Saagiig and drain into Lake Simcoe. Any negative impact to any of the watercourses in the territory is seen as an infringement upon the Michi Saagiig rights to fish their waters.

Alternative 2C

Alternative 2C is the preliminary proposed solution for this project.

1. The tributary of Lovers creek runs on the North end of this proposed site. Since the tributary provides potential habitat for aquatic species, 4 Directions is concerned about potential impacts to this watercourse and the fish species within it. Lovers creek is known to support coldwater habitat for Brook trout (Cultural Keystone Species). The Michi Saagiig have inherent and treaty rights to fish the waters of their territories. Any negative impact to any of the watercourses in the territory is seen as an infringement upon the Michi Saagiig rights to fish their waters.

    a. 4 Directions would suggest completing fish surveys for this tributary to determine fish community and thermal regime. The survey results should be shared with CLFN to determine Cultural Keystone Species and create mitigation measures and monitoring plans if necessary.

2. 4 Directions is concerned with possible grassland bird SAR that might be found within 120 m of the proposed site since the site and surrounding are agricultural fields. We would therefore suggest that bird surveys take place to identify any species within the area. If these have been done, 4 Directions suggests sharing this information with CLFN to assess for any Cultural Keystone Species. We would also suggest that any of the bird SAR that are not identified through surveys be granted protection regardless of rationale of occurrence.

3. 4 Directions is also concerned about potential frog habitat along the tributary of Lovers creek in the North end of the site. American bullfrog and green frog are Cultural Keystone Species that are inherently important to the Michi Saagiig. It is important to know if these species are in this habitat to ensure they are protected and therefore the Michi Saagiig rights are also protected.

    a. Amphibian surveys should be conducted to determine the frog species in the area. The survey results should be shared with CLFN to determine Cultural Keystone Species and create mitigation measures and monitoring plans if necessary.

Alternative 2D

1. 4 Directions is concerned with potential impacts to aquatic species populations within the tributaries of Lovers creek that traverse this site. These watercourses are commonly used by the Michi Saagiig as they are a part of the Simcoe watershed. Any negative impact to these watercourses and the aquatic species within them would be a direct infringement upon the Michi Saagiig Treaty rights to fish their own waters.

Alternative 3

1. Similarly, 4 Directions is concerned with potential impacts to aquatic species populations within the tributaries of Lovers creek that traverse this proposed site. To reiterate, these watercourses commonly used by the Michi Saagiig, both historically and currently, are of high importance. Any negative impact to these watercourses and the aquatic species within them would be a direct infringement upon the Michi Saagiig Treaty rights.

Closing

Lake Simcoe and its surrounding tributaries have been and continue to be critical to the Michi Saagiig. Any disruption to the waters and the aquatic life that inhabits it would be an infringement on the Treaty Rights of the Michi Saagig.

Based on the site visit findings, an Environmental Monitoring Plan must be developed that suits the needs of CLFN to ensure cultural longevity during and post construction of this project.

We hope this report answers any of the questions you may have regarding the sites ecological features and impacts to Indigenous Rights. If you have any questions or concerns, please contact us.

4 Directions of Conservation Consulting Services

Miigwetch,



Hannah Tosello, BSc., MEnvSc.
Aquatic Biologist



Gary Pritchard, BSc., EP., CERP.
Principal, Indigenous Conservation Ecologist

From:	Wendy Smeh
To:	Francis M. Chua
Cc:	Preya Balgobin; Jenna DeGroote; Beth Wang; Kayla Wright; Gary Pritchard; Kaitlin Hill
Subject:	InnServices Sewage Pumping Station EAs - Curve Lake First Nations Consultation Meeting Minutes - Revisions
Date:	October 3, 2022 9:47:00 AM
Attachments:	121031-Innisfil 5 SPS EA-Curve Lake Meeting Minutes Sept 2022.pdf image003.png 20th Sdrd PIC Display Boards.pdf IH SPS 2 - PIC Display Boards w Update.pdf IH SPS 6 PIC - Display Boards.pdf

---

Hello All,

Attached please find the Rightsholder meeting minutes of September 23, 2022 for the InnServices Five SPS EA project. Also attached are the PIC display boards for IH SPS 6, IH SPS 2 and the 20th Sideroad SPS.

Please advise if you have any comments or questions.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Beth Wang

From: Beth Wang
Sent: April 6, 2023 5:08 PM
To: Francis M. Chua
Cc: 'Jenna DeGroote'; Wendy Smeh; Preya Balgobin
Subject: Innisfil SPS EA-CLFN Site Visit Response Letter and Comparison Summary (20th SR SPS and SPS 6)
Attachments: Curve Lake Site Visit Response Letter.pdf; Innisfil Heights Class EA-Comparison for 20th SR SPS and IH SPS 6.pdf

Hi Francis,

Hope all is well!

Please find attached, the draft site visit response letter and a memo of comparison for the two selected locations for the 20th SR SPS and SPS 6 for your comment, prior to us sending it to CLFN to confirm their feedback and position.

If you have any suggestions for improvements or other thoughts about the letter, we welcome them.

Thank you and have a nice weekend.

Regards,

Beth Wang, EIT
Engineering Intern
Ainley
www.ainleygroup.com
Tel: (905) 452-5172 Ext. 221
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

AINLEY & ASSOCIATES LIMITED
195 County Court Blvd., Suite 300, Brampton, ON L6W 4P7
Tel: (905) 452-5172 • www.ainleygroup.com

VIA EMAIL

April 6, 2023 File No. 121031

Curve Lake First Nation
Government Services Building
22 Winookeedaa Road
Curve Lake, Ontario
K0L 1R0
KatieYH@curvelake.ca

Attn: **Katie Young-Haddlesey**
Chief Operating Officer, Curve Lake First Nation

Re: **CLFN's Technical Field Memorandum for Town of Innisfil – InnServices 5 Sewage Pumping Station (SPS) EAs**

Dear Katie Young-Haddlesey:

We received Curve Lake's letter and technical field memorandum related to potential new sewage pumping station locations in Innisfil. The site locations for SPS 2 are addressed within the field memorandum.

The memorandum outlines field comments and concerns related to each of the proposed locations for the pumping station based on observations during the field visit of July 5th, 2022. With respect to concerns related to the proposed preferred site alternative, we note that at the time of the PIC, Alternative 2C was considered the preferred site alternative for SPS 2. It is farmland and is located at the corner of 5th Sideroad and 7th Line at the southwest boundary of the property. The following picture shows the location of both alternative 2C and 2D.



Following consultation with the property owner's consultant and in consideration of the draft site development plan, Alternative 2D has been re-evaluated as the proposed preferred site alternative. Alternative 2D is presently meadow lands with no expectation of tree removal and is located on the southeast side of the same property as 2C, bordered on the south by 7th Line. The shift from Alternative 2C to Alternative 2D as the preferred alternative comes after consultation with the property owner and developer in consideration of their site plans. The same property owner and developer own both sites. The overall area is designated Industrial Business Park by the Town of Innisfil. The developer plans to build a stormwater pond in the same area as Alternative 2D, which minimizes the overall impact of the pumping station. We provide our feedback on these two site alternatives herein.

Alternative 2C

Field Technical Memorandum Comment:

A tributary of Lovers Creek runs along the northern boundary of this site. 4 Directions is concerned about potential impacts to this watercourse and the fish species within it. Per the Field Technical Memorandum, Lovers Creek is known to support coldwater habitat for Brook trout (Cultural Keystone Species). The Michi Saagiig have inherent and treaty rights to fish the waters of their territories. Any negative impact to any of the watercourses in the territory is seen as an infringement upon the Michi Saagiig rights to fish their waters.

Response:

As recommended by 4 Directions, InnServices will complete fish surveys for this tributary if required. The developer has agreed to share the environmental report that they have completed to date. We provide the report attached and ask that Curve Lake review the report to determine if Cultural Keystone Species have been considered and start the process of creating mitigation measures and monitoring plans if necessary. Note that there will be no discharge to the creek from the SPS under any circumstances; normal operation or otherwise.

The site memo report outlines concern with possible grassland bird species at risk (SAR) that might be found within 120 m of the proposed site since the site and surrounding area are agricultural fields. Bird surveys were also recommended by 4 Directions to identify any SAR within the area. InnServices will work in collaboration with Curve Lake to complete surveys if Curve Lake does not find the enclosed natural features report sufficient in providing this information. Any bird SAR that are identified in the report but not observed during the field surveys with Curve Lake (if performed) will nonetheless be granted protection where recommended by the report.

Field Technical Memorandum Comment:

Finally, 4 Directions is also concerned about potential frog habitat along the tributary of Lovers Creek in the north end of the site. American bullfrog and green frog are Cultural Keystone Species that are inherently important to the Michi Saagiig. It is important to know if these species are in this habitat to ensure they are protected and therefore the Michi Saagiig rights are also protected.

Response:

Amphibian surveys will be conducted to determine the frog species in the area. InnServices will work with Curve Lake to ensure amphibian surveys have been completed as outlined in the enclosed report. The report is being shared with CLFN to determine Cultural Keystone Species and start the process of creating mitigation measures and monitoring plans if necessary.

Field Technical Memorandum Comment:

4 Directions is concerned with potential impacts to aquatic species populations within the tributaries of Lovers Creek that traverse this site. These watercourses are commonly used by the Michi Saagiig as they are a part of the Simcoe watershed. Any negative impact to these watercourses and the aquatic species within them would be a direct infringement upon the Michi Saagiig Treaty rights to fish their own waters.

Response:

An Environmental Mitigation and Monitoring Plan will be developed collaboratively with Curve Lake First Nations to protect the local flora and fauna, aquatic environment, and amphibian species that could be affected by the SPS construction and operation. Protection measures will need to be considered for the ditches and watercourses.

The plan will also consider CLFN's spirituality and ceremonial rights where the project has environmental impacts. The plan will need to be developed before construction occurs and will consider cultural longevity during and post construction of this project.

.

If you have any questions or concerns, please contact the undersigned.

Yours truly,

AINLEY & ASSOCIATES LIMITED

Preya Balgobin, P.Eng.
Senior Project Manager

cc: Jenna DeGroote, InnServices (By Email)
Francis Chua
4 Directions of Conservation

\\ag-barrie\ns1\Engineering\Collingwood\121031\6. Class EA Files\Consultation\Curve Lake - All SPS & PIC Presentation Material - Sept 23\Curve Lake Site Visit Response Letter April 6 2023.docx

Beth Wang

From: Beth Wang
Sent: November 7, 2023 2:34 PM
To: Francis M. Chua
Cc: relationships@4directionsconservation.com; Jenna DeGroote; Wendy Smeh; Preya Balgobin; fchua@4directionsconservation.com
Subject: RE: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes
Attachments: 121031-Innisfil 5 SPS EA CLFN Meeting - Minutes - Issued.pdf

Good afternoon Francis,

Thanks for the comments. Please find the attached revised meeting minutes.

Could you please advise whom we should address this meeting minutes to?

Regards,

Beth Wang, EIT
Engineering Intern
www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Francis M. Chua <francis@francischua.com>
Sent: November 6, 2023 4:55 PM
To: Beth Wang <beth.wang@ainleygroup.com>
Cc: relationships@4directionsconservation.com; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>; fchua@4directionsconservation.com
Subject: Re: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Hi Beth. Thanks for your patience.

Kayla reviewed this earlier than I; she made some notes on the PDF. Please make the corrections.

I reviewed this as well and have no other comments/corrections to add.

Thanks.

~ Francis

From: Francis M. Chua <francis@francischua.com>
Sent: Friday, November 3, 2023 7:31 AM
To: Beth Wang <beth.wang@ainleygroup.com>; fchua@4directionsconservation.com <fchua@4directionsconservation.com>
Cc: relationships@4directionsconservation.com <relationships@4directionsconservation.com>; Kayla Wright <kayla@francischua.com>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: Re: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Hi Beth. Thanks for the reminder. Will do. It is on my list of priorities. Just have not gotten to it yet.

~ Francis

From: Beth Wang <beth.wang@ainleygroup.com>
Sent: Thursday, November 2, 2023 3:28 PM
To: fchua@4directionsconservation.com <fchua@4directionsconservation.com>
Cc: relationships@4directionsconservation.com <relationships@4directionsconservation.com>; Francis M. Chua <francis@francischua.com>; Kayla Wright <kayla@francischua.com>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Good afternoon Francis,

Hope all is well!

I'd like to follow up again on the draft meeting minutes for our meeting held on September 12th.
Could you kindly review it at your convenience and provide any feedback or comments you may have?

Regards,

Beth Wang, EIT
Engineering Intern
Ainley
www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Beth Wang
Sent: October 16, 2023 9:30 AM
To: 'fchua@4directionsconservation.com' <fchua@4directionsconservation.com>
Cc: 'relationships@4directionsconservation.com' <relationships@4directionsconservation.com>; 'Francis M. Chua' <francis@francischua.com>; 'Kayla Wright' <kayla@francischua.com>; 'Jenna DeGroote' <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Good morning Francis,

Hope you had a wonderful weekend!

I'd like to follow up on the draft meeting minutes for our meeting held on September 12th.
Could you kindly review it at your convenience and provide any feedback or comments you may have?

Regards,

Beth Wang, EIT
Engineering Intern

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Beth Wang
Sent: October 11, 2023 2:45 PM
To: Francis M. Chua <francis@francischua.com>
Cc: Kayla Wright <kayla@francischua.com>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: FOLLOW-UP: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Good afternoon Francis,

Hope you had a wonderful long weekend!

I'd like to follow up on the draft meeting minutes for our meeting held on September 12th.
Could you kindly review it at your convenience and provide any feedback or comments you may have?

Regards,

Beth Wang, EIT
Engineering Intern

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Beth Wang
Sent: September 27, 2023 5:03 PM
To: Francis M. Chua <francis@francischua.com>

Cc: 'Kayla Wright' <kayla@francischua.com>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: Innisfil SPS EA-CLFN Consultation Meeting (September 12th)-Draft Minutes

Hi Francis,

Hope all is well!

Please find attached, the draft meeting minutes of the September 12th meeting for the Innisfil Class EA project for your review and comment prior to further communicating with CLFN. Finalization of the minutes will occur following your review.

If you have any suggestions for improvements or other thoughts about the meeting minutes, we welcome them.

Thank you and have a wonderful rest of the day.

Regards,

Beth Wang, EIT
Engineering Intern

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

AINLEY & ASSOCIATES LIMITED
6299 Airport Road, Suite 205, Mississauga, ON L4V 1N3
Tel: (905) 595-6862 • www.ainleygroup.com

Meeting Minutes

Project:	InnServices Utilities Inc. P-21-CWW286 287DN 252DN 288DN 292DN Engineering Services for Municipal Class Environmental Assessment and Preliminary Design for Five (5) Sewage Pumping Stations Ainley Project No. 121031		
Date:	September 12, 2023		
Time:	10:00 AM to 11:30 AM		
Location:	Online Team Meeting		
Present:	Francis M. Chua	-	4 Directions of Conservation, (supporting Curve Lake First Nations)
	Kayla Wright	-	4 Directions of Conservation
	Jenna DeGroote	-	InnServices Utilities Inc.
	Wendy Smeh	-	Ainley & Associates Limited (AAL)
	Preya Balgobin	-	Ainley & Associates Limited
	Beth Wang	-	Ainley & Associates Limited
Distribution:	All Present		

1 Introduction

The purpose of this meeting is to review each pumping station site and to discuss any concerns or comments that Curve Lake First Nations (CLFN) may have with respect to any of natural heritage site investigations, reports submitted to date or to determine if any further action is required to obtain acceptance from Curve Lake.

2 20th SR SPS

It was discussed that InnServices has not yet received confirmation that CLFN is satisfied with the recommended site for sewage pumping station sites. Representatives from CLFN visited the top two alternative sites for 20th SR SPS on July 5th, 2022 with Ainley and InnServices. They also reviewed the top two site recommendations for IH SPS 2 and IH SPS 6 on the same day. Following the site visit, no comments were received regarding this property at 1460 7th Line. However, they did provide comments concerning the recommended site location for IH SPS 2 on 5th Sideroad.

CLFN was provided a site comparison memo, comparing the top two alternatives, and submitted to InnServices on April 4th, 2023. The site is in an agricultural field along the frontage of 20th Sideroad. In a review of this document, Curve Lake noted that the site should adhere to the 60-meter buffer requirement from any watercourse. In cases where maintaining the 60-

meter buffer is not feasible due to specific reasons, a reasonable explanation should be provided to CLFN. Acceptance from Francis is expected upon receiving the meeting minutes. The EA team has been actively sharing information and engaging in consultation, and no additional concerns have been raised thus far.

Action by: EA Team and Curve Lake

CLFN indicated that site monitoring will be necessary both during construction and post-construction to assess the impact on the environment and protected species. During the construction phase, the contractor will conduct monitoring and develop their construction plan in accordance with recommendations. The purpose of the future monitoring plan is to consider what pre-construction and post-construction monitoring would look like with respect to impacts on the environment. The current agreement between InnServices and CLFN is primarily centered around the EA. After the EA phase, as the project progresses to the detailed design and tender for construction, a monitoring plan will be developed and carried forward in the project.

Action by: InnServices

Curve Lake outlined that they prefer to see a four seasons approach to natural heritage studies which consider the environment over different seasons and through more than one year.

Ainley noted that a breeding bird survey is planned, and once the draft report is prepared, it will be shared with CLFN for their review and comment. There may be additional mitigation measures required by CLFN based on their requirements.

Action by: Ainley

Francis proposed the idea of creating a checklist to ensure that CLFN is well-informed about the project and has been given the opportunity to participate in relevant discussions and decisions. Curve Lake does not have a formal checklist but noted that they look for the following considerations in their review of a site:

- Site should have a 120m buffer from a wetland
- Site should be at least 60m from a watercourse
- A four seasons approach to site studies should be undertaken
- Invite/engage Curve Lake throughout the project and invite CLFN to attend NHS site visits
- Studies over consecutive years should be considered
- CLFN should be sent draft and final NHS reports

Action by: EA Team

InnServices noted that it would be difficult to consider a multi-year approach. CL noted that while it is not uncommon that this requirement isn't met, it is noted when the effort is put in.

For each SPS, when the draft report is prepared and addresses concerns, especially regarding the 60-meter buffer for watercourses and the 120-meter buffer for wetlands, the measurement methodologies to best meet those buffer requirements will be explained. Additionally, CLFN will be contacted via email to solicit any comments they may have regarding these reports and the buffer measurements.

Action by: EA Team

3 IH SPS#6

If efforts are being made to comply with the 60-meter buffer requirement, it's possible that the site may need to be adjusted slightly towards the western side of the property, where a buffer Lover's Creek is available.

Action by: Ainley

The same procedure as the 20th SR SPS mention in Section 1 should be followed, ensuring that enough information is shared with CLFN. Additionally, in future detail design, both pre- and post-construction monitoring should be incorporated into the detailed design or tender for construction stages.

Currently, Azimuth has completed a desktop study of the site.

Action by: Ainley

It was discussed that it is too early to develop a mitigation and protection plan for construction. InnServices indicated that construction may not commence until 2025. Therefore, the planning and implementation of mitigation and protection measures will be initiated closer to the construction start date.

4 Stroud SPS

The preferred alternative site is located in an agricultural area, with no proximity to wetlands or watercourses. Several ongoing studies are currently in progress, but EA team has not yet received any reports. The natural heritage report will be completed this year and provided to Curve Lake. For each SPS, Ainley will coordinate with Azimuth to provide dates that surveys were completed and note who was in attendance to share with Curve Lake.

Action by: Ainley

5 IH SPS#1

The preferred alternative site is situated either in a parking lot or on agricultural land, both of which are expected to have minimal environmental impacts.

6 IH SPS#2

The preferred site location is still under discussion. Recently, the EA team held a meeting with the developer, which resulted in a slight shift from the originally proposed location. The alternative 2D site includes a regulated watercourse and a ditch within the property boundaries. No regulated wetland is present in the area. It's crucial to note that if the 60-meter or 120-meter buffer zones cannot be maintained, there should be considerations for accommodations or compensations. Furthermore, mitigation and protection measures need to be put in place to safeguard bats and other species in the adjacent forest or wetland areas, even if they are not directly within the project's footprint.

Action by: EA Team

Both Species at Risk (SAR) and non-SAR species should undergo evaluation and receive protection measures. Non-SAR species should be evaluated at the same level as SAR species. The inclusion of a fish plan and an amphibian survey is still uncertain at this point, and further decisions will need to be made regarding these aspects.

Action by: EA Team

It's important to emphasize that the evaluation of fish communities, amphibian communities, and bird communities is important regardless of the chosen alternative.

It was noted that the developer completed a detailed investigation of the site. Previously, Ainley inquired if the report satisfied Curve Lake's interest in the site. Curve Lake noted they would prefer the studies to consider the checklist noted above. There is only one natural heritage report available for the site, and natural heritage studies are not scheduled for each year since the project's start.

A letter was sent to 4 Directions in June, requesting requirements on further studies, but no response has been received yet. There are existing data gaps for this property, and it's essential to plan fieldwork to bridge these gaps. Francis mentioned that CLFN needs to participate in this fieldwork, expected in the fall of 2023 and continuing into 2024. The EA team will submit a draft report for review to ensure that these assessments consider any cultural-milestone species. Additionally, Azimuth will notify the team about any birds observed in the field and provide this information to CLFN for their input and comments.

Action by: EA Team

Provide CLFN with information on SPSs which are approaching closure in the EA process. Ainley will follow up with Azimuth on their timeline.

Action by: EA Team

Cambium has completed the detailed assessment and has submitted a report to Francis. Ainley will distribute additional studies once they are completed.

Action by: EA Team

7 Next Steps

As discussed.

Any errors and/or omissions from these minutes should be reported to the undersigned as soon as possible.

Minutes prepared by:

Beth Wang
EIT

\\ag-barrie\ns1\Engineering\Collingwood\121031\3. Meetings\Curve Lake Meeting 6 - Sep 12\121031-Innisfil 5 SPS EA CLFN Meeting - Minutes - Issued.docx

From:	Francis Chua
To:	Wendy Smeh
Cc:	Relationships and Engagement; Jenna DeGroote; Preya Balgobin; Beth Wang; Paige Williams; Consultation Lead
Subject:	RE: InnServices SPS EA-CLFN Archeological Coordination
Date:	December 6, 2023 10:59:57 AM
Attachments:	image001.png

Hi Wendy.

As much notice as possible is appreciated. One month in advance or more. I have included Paige and Lois in this email. If you replied to all in the future, coordination can take place and specifics can be discussed at that time.

~ Francis

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Thursday, November 30, 2023 2:54 PM
To: Francis M. Chua <francis@francischua.com>; Francis Chua <fchua@4directionsconservation.com>
Cc: Relationships and Engagement <relationships@4directionsconservation.com>; Kayla Wright <kayla@francischua.com>; Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>
Subject: InnServices SPS EA-CLFN Archeological Coordination

Hi Francis,

We are working to coordinate Stage 2 archeological assessments on some of the Innisfil Heights pumping station sites. They will likely be scheduled for the spring but we are trying to determine what can be done earlier.

As previously discussed, the proposed pumping station locations are on agricultural lands. The Stage 1 archeological assessments propose pedestrian surveys at 5m intervals. This requires coordinating with the property owner/tenant to plough the fields prior to the assessment.

Once we have set a date should we coordinate directly with you so that a CLFN representative can attend the survey? How much notice is preferable to coordinate the work? Are there any requirements that should be discussed prior to commencement of work?

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager
Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334

wendy.smeh@ainleygroup.com

My working hours may not be your working hours. Please do not feel obligated to respond to this e-mail outside of your normal working hours.

_____

CAUTION: The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

_____

Beth Wang

From: Francis Chua <fchua@4directionsconservation.com>
Sent: March 5, 2024 11:47 AM
To: Beth Wang; paigew@curvelake.ca; delaneyj@curvelake.ca; Consultation Lead
Cc: keithk@curvelake.ca; Relationships and Engagement; Jenna DeGroote; Wendy Smeh; Preya Balgobin
Subject: RE: InnServices Sewage Pumping Station EAs - Consultation Meeting Minutes

Some people who received this message don't often get email from fchua@4directionsconservation.com. Learn why this is important

Good morning Beth.

I hope all is well with you too. I would like to confirm that the actions identified in these minutes accurately capture what was discussed at the meeting. As long as these actions are completed/acted upon/in progress/followed-up on then the project can proceed with its next steps.

I understand that the project will reach out again to Curve Lake Consultation Department when the time comes for the detailed design phase. On behalf of Curve Lake First Nation, I would like to say that Curve Lake looks forward to that time.

Thanks to you and your team, to Jenna at InnServices for this phase of the consultation process. Take care and keep focused on meaningful consultation going forward. Thanks.

~ Francis

From: Beth Wang <beth.wang@ainleygroup.com>
Sent: Tuesday, November 7, 2023 4:03 PM
To: paigew@curvelake.ca; delaneyj@curvelake.ca
Cc: keithk@curvelake.ca; Francis Chua <fchua@4directionsconservation.com>; Relationships and Engagement <relationships@4directionsconservation.com>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: InnServices Sewage Pumping Station EAs - Consultation Meeting Minutes

Good afternoon,

Hope all is well!

Attached is the meeting minutes for the meeting held on September 12th, 2023, with Francis Chua and Kayla Wright. The purpose of the meeting was to review each pumping station site and to address any concerns or comments that 4 Directions of Conservation may have regarding natural heritage site investigations, reports submitted to date, or to ascertain if any additional actions are necessary to obtain acceptance from Curve Lake First Nations.

If you have any questions or concerns, please don't hesitate to reach out to us.

Regards,

Beth Wang, EIT
Engineering Intern

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 321
Cell: (289) 541-8086

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Beth Wang
Sent: March 13, 2025 11:54 AM
To: Paige Williams
Cc: Consultation Lead; Jenna DeGroote; Wendy Smeh; Preya Balgobin
Subject: FOLLOW-UP: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report
Attachments: 7131 5th Sideroad - Archaeological Assessment.pdf

Good morning Paige,

I hope you're doing well.

We wanted to follow up on the Archaeological Assessment Report submitted on February 13, 2025, for the Innisfil Heights Sewage Pumping Station 2 (IH SPS 2).
Please let us know if you require any further information or if there are any comments regarding the review.

Regards,

Beth Wang, EIT
Engineering Intern

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Beth Wang
Sent: February 13, 2025 9:55 AM
To: Paige Williams <PaigeW@curvelake.ca>
Cc: Consultation Lead <ConsultationLead@curvelake.ca>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report

Good morning Paige,

Hope all is well!

Further to your interest in Innisfil Heights SPS 2, we have been working closely with the property owner and their engineering team regarding the proposed location for the station. As part of their development plans, the property owner's engineers have conducted archaeological assessments on the site, including a Stage 2 Archaeological Assessment. They have kindly agreed to share this report with us for the purposes of the Class EA.

As requested, we are providing this report for your review and comments. Based on the findings, there appear to be no archaeological concerns at the proposed SPS location.
Please let us know if you have any questions or require further clarification.

Regards,

Beth Wang, EIT
Engineering Intern

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Mississaugas of Scugog Island First Nation

From:	Jody Marks
To:	info@scugogfirstnation.com
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:06:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter Mississaugas of Scugog Island First Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	info@scugogfirstnation.com
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; jdegroote@innservices.co; Wendy Smeh
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:34:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image002.jpg

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Hiawatha First Nation

From:	Jody Marks
To:	chiefcarr@hiawathafn.ca
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:11:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Hiawatha First Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner



Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	chiefcarr@hiawathafn.ca
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; jdegroote@innservices.co; Wendy Smeh
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:33:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image003.jpg

Dear Chief Laurie Carr,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Alderville First Nation

From:	Jody Marks
To:	dmowat@alderville.ca
Cc:	Preya Balgobin; Wendy Smeh; jdegroote@innservices.co; k.a.sandy-mckenzie@rogers.com
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:07:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Alderville First Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	dmowat@alderville.ca
Cc:	k.a.sandy-mckenzie@rogers.com; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:25:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image002.jpg

---

Dear Chief Dave Mowat,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Huron-Wendat Nation

From:	Jody Marks
To:	administration@cnhw.qc.ca
Cc:	Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:12:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Huron Wendat Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Dominic Ste-Marie <Dominic.Sainte-Marie@wendake.ca>
Sent: March 22, 2022 2:16 PM
To: Jody Marks
Cc: Lori-Jeanne Bolduc; Mario Gros Louis; Marie-Sophie Gendron
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Ndio' Jody,

My colleague Marie-Sophie (cc'd) will be able to provide a quote and coordinate our participation to this project once we receive the draft AA. Furthermore, we would like participate in upcoming fieldworks if a stage 2 is necessary.

Tiawenhk chia' önenh
Dominic Ste-Marie

NATION HURONNE-WENDAT
Bureau du Nionwentsïo

Dominic Ste-Marie
Conseiller en gestion du territoire
255, Place Chef Michel-Laveau
Wendake (Qc) G0A 4V0
Téléphone : 418-843-3767
Courriel : dominic.ste-marie@wendake.ca

Devez-vous vraiment imprimer ce courriel?
Pensons à l'environnement
Do you really need to print this email?
Think to the environment

Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

Warning on protection and confidentiality of information

The information contained in this e-mail is confidential and protected in accordance with the applicable laws and regulations. Its content is intended specifically for the recipient(s) to whom it is addressed. It is therefore prohibited to distribute or to disclose the content. If you receive this communication by error, please destroy it and notify us as soon as possible.

ATTENTION: Please note that Maxime Picard has a new position at the Huron-Wendat Nation Council and is no longer in charge of Ontario consultations. Any new consultation from Ontario must be sent to Mario Gros-Louis (mario.groslouis@wendake.ca), Lori-Jeanne Bolduc (lori-jeanne.bolduc@wendake.ca) and Dominic Ste-Marie (dominic.ste-marie@wendake.ca).

For inquiries relating specifically to archaeology (fieldwork planning, monitoring, reports review, etc.), please contact Marie-Sophie Gendron (marie-sophie.gendron@wendake.ca), Isabelle Lechasseur (isabelle.lechasseur@wendake.ca) and Jean-François Richard (jean-francois.richard@wendake.ca).

De : Jody Marks <jody.marks@ainleygroup.com>
Envoyé : 22 mars 2022 13:55
À : Dominic Ste-Marie <Dominic.Sainte-Marie@wendake.ca>
Cc : Lori-Jeanne Bolduc <Lori-Jeanne.Bolduc@wendake.ca>; Mario Gros Louis <Mario.GrosLouis@wendake.ca>
Objet : RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello Dominic,

For the above noted Class EA we are completing Archeological and Built Heritage Resources studies for the project . We have not received a draft report as of yet, and cannot confirm if further archeological assessment

(Stage 2) is required. We will provide the draft reports to you once we received them and continue to consult with you.

Please let me know if you have any other questions. Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Dominic Ste-Marie <Dominic.Sainte-Marie@wendake.ca>
Sent: Wednesday, February 9, 2022 9:25 AM
To: Jody Marks <jody.marks@ainleygroup.com>
Cc: Lori-Jeanne Bolduc <Lori-Jeanne.Bolduc@wendake.ca>; Mario Gros Louis <Mario.GrosLouis@wendake.ca>
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Ndio' Jody,

Thank you for your email. Could you please let us know if any archaeological studies or fieldwork will be necessary as part of this project?

Tiawenhk chia' önenh
Dominic Ste-Marie

NATION HURONNE-WENDAT
Bureau du Nionwentsïo

Dominic Ste-Marie
Conseiller en gestion du territoire
255, Place Chef Michel-Laveau
Wendake (Qc) G0A 4V0
Téléphone : 418-843-3767
Courriel : dominic.ste-marie@wendake.ca

Devez-vous vraiment imprimer ce courriel?
Pensons à l'environnement
Do you really need to print this email?
Think to the environment

Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

Warning on protection and confidentiality of information

The information contained in this e-mail is confidential and protected in accordance with the applicable laws and regulations. Its content is intended specifically for the recipient(s) to whom it is addressed. It is therefore prohibited to distribute or to disclose the content. If you receive this communication by error, please destroy it and notify us as soon as possible.

ATTENTION: Please note that Maxime Picard has a new position at the Huron-Wendat Nation Council and is no longer in charge of Ontario consultations. Any new consultation from Ontario must be sent to Mario Gros-Louis (mario.groslouis@wendake.ca), Lori-Jeanne Bolduc (lori-jeanne.bolduc@wendake.ca) and Dominic Ste-Marie (dominic.ste-marie@wendake.ca).

For inquiries relating specifically to archaeology (fieldwork planning, monitoring, reports review, etc.), please contact Marie-Sophie Gendron (marie-sophie.gendron@wendake.ca), Isabelle Lechasseur (isabelle.lechasseur@wendake.ca) and Jean-François Richard (jean-francois.richard@wendake.ca).

De : Jody Marks <jody.marks@ainleygroup.com>
Envoyé : 20 janvier 2022 16:12
À : Administration <Administration@wendake.ca>
Cc : Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Objet : InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Wendy Smeh
Sent: May 30, 2022 12:46 PM
To: Dominic Ste-Marie; Jody Marks
Cc: Lori-Jeanne Bolduc; Mario Gros Louis
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Attachments: 21EA-087 SPS 2 Stage 1 Report.pdf; CH-080 IH SPS 2_CH Report_EC DRAFT_29April2022.pdf

Hello Dominic,

Attached please find the Stage 1 archeological assessment report and cultural heritage report for the Innisfil Heights sewage pumping station 2 environmental assessment.

The Stage 1 report provides the following recommendations:

- Parts of the Study Area exhibit archaeological potential. These lands require Stage 2 archaeological assessment by test pit/pedestrian survey at five metre intervals, where appropriate. Stage 2 is required prior to any proposed construction activities on these lands;
- The remainder of the Study Area does not retain archaeological potential on account of deep and extensive land disturbance or being previously assessed. 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.

The key findings of the Cultural Heritage report are that there are four potential cultural heritage landscapes within the overall study area. Once a preferred alternative or detailed designs are available, the report will be updated with a confirmation of impacts of the undertaking on the cultural heritage resources identified within the study area and recommend mitigation measures.

Once we have determined a preferred site alternative, we will provide you with an update regarding recommendations for a Stage 1 Archeological Assessment.

If you have any questions, or would like to discuss further please do not hesitate to contact me.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Ainley
Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Dominic Ste-Marie <Dominic.Sainte-Marie@wendake.ca>
Sent: February 9, 2022 9:25 AM
To: Jody Marks <jody.marks@ainleygroup.com>
Cc: Lori-Jeanne Bolduc <Lori-Jeanne.Bolduc@wendake.ca>; Mario Gros Louis <Mario.GrosLouis@wendake.ca>
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Ndio' Jody,

Thank you for your email. Could you please let us know if any archaeological studies or fieldwork will be necessary as part of this project?

Tiawenhk chia' önenh
Dominic Ste-Marie

NATION HURONNE-WENDAT
Bureau du Nionwentsïo

Dominic Ste-Marie
Conseiller en gestion du territoire
255, Place Chef Michel-Laveau
Wendake (Qc) G0A 4V0
Téléphone : 418-843-3767
Courriel : dominic.ste-marie@wendake.ca

Devez-vous vraiment imprimer ce courriel?
Pensons à l'environnement
Do you really need to print this email?
Think to the environment

Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

Warning on protection and confidentiality of information

The information contained in this e-mail is confidential and protected in accordance with the applicable laws and regulations. Its content is intended specifically for the recipient(s) to whom it is addressed. It is therefore prohibited to distribute or to disclose the content. If you receive this communication by error, please destroy it and notify us as soon as possible.

ATTENTION: Please note that Maxime Picard has a new position at the Huron-Wendat Nation Council and is no longer in charge of Ontario consultations. Any new consultation from Ontario must be sent to Mario Gros-Louis (mario.groslouis@wendake.ca), Lori-Jeanne Bolduc (lori-jeanne.bolduc@wendake.ca) and Dominic Ste-Marie (dominic.ste-marie@wendake.ca).

For inquiries relating specifically to archaeology (fieldwork planning, monitoring, reports review, etc.), please contact Marie-Sophie Gendron (marie-sophie.gendron@wendake.ca), Isabelle Lechasseur (isabelle.lechasseur@wendake.ca) and Jean-François Richard (jean-francois.richard@wendake.ca).

De : Jody Marks <jody.marks@ainleygroup.com>
Envoyé : 20 janvier 2022 16:12
À : Administration <Administration@wendake.ca>
Cc : Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Objet : InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Jenna DeGroote <jdegroote@innservices.co>
Sent: February 24, 2025 11:36 AM
To: Marie-Sophie Gendron
Cc: Wendy Smeh; Beth Wang; Preya Balgobin; dominic.ste-marie@wendake.ca
Subject: Fw: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report
Attachments: RE: InnServices, Municipal Class EA IH SPS 6 - Stage 2 Archeological Assessment

Good morning Marie-Sophie,

The Innisfil Heights SPS 2 EA is one of the 4 EA's being completed as per the Town's 2018 Master Servicing Plan update, to service the Innisfil Heights economic district.

Similar to the IH SPS 6 EA (attached correspondence), InnServices does not have an established First Nations consultation policy and will not be able to provide payment for fees including, but not limited to capacity funding, review, and file fees.

For this EA, the property owner's engineers conducted the Archaeological Assessment on site, including the Stage 2 and have agreed to share the report for the purposes of the EA.

Please let me know if there is anything else we can provide to assist you.

Thank you.

Jenna DeGroote, C.E.T.
Capital Project Manager



InnServices Utilities Inc.
705-791-9678
www.innservices.co

From: Marie-Sophie Gendron <Marie-Sophie.Gendron@wendake.ca>
Sent: February 21, 2025 3:46 PM
To: Beth Wang <beth.wang@ainleygroup.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report

CAUTION: This email originated outside of IUI/IPC. **STOP, LOOK & THINK!** Do not open attachments or click links unless you recognize the sender and know the content is safe. When in doubt, contact the IT team for assistance.

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

> **ATTENTION:** Ce courriel contient un document PDF. Prière de ne pas ouvrir les hyperliens contenus dans le document à moins de vous assurer qu'il s'agit d'un document provenant d'une source fiable.

Kwe Beth,

Tiawenhk inenh for your email. Please note that the Huron-Wendat Nation is interested in reviewing and commenting this report. I looked through our files and I don't think we have a previous agreement for this specific projet. Please find attached a quote for our participation on this project.

Entïio'!
Marie-Sophie

NATION HURONNE-WENDAT
BUREAU DU NIONWENTSÏO

Marie-Sophie Gendron
Analyste archéologue

255, place Chef Michel Laveau
Wendake (QC) G0A 4V0
T : 418 843-3767
@ : marie-sophie.gendron@wendake.ca

WENDAKE.CA

De : Beth Wang <beth.wang@ainleygroup.com>
Envoyé : 13 février 2025 09:43
À : Administration <Administration@wendake.ca>
Cc : Dominic Ste-Marie <Dominic.Ste-Marie@wendake.ca>; Jenna DeGroote <jdegroote@innservices.co>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>
Objet : InnServices, Municipal Class EA IH SPS 2 - Archaeological Assessment Report

You don't often get email from beth.wang@ainleygroup.com. Learn why this is important

> **ATTENTION:** Ce courriel contient un document PDF. Prière de ne pas ouvrir les hyperliens contenus dans le document à moins de vous assurer qu'il s'agit d'un document provenant d'une source fiable.

Dear Grand Chief Rémy Vincent,

Hope all is well!

Further to your interest in Innisfil Heights SPS 2, we have been working closely with the property owner and their engineering team regarding the proposed location for the station. As part of their development plans, the property owner's

engineers have conducted archaeological assessments on the site, including a Stage 2 Archaeological Assessment. They have kindly agreed to share this report with us for the purposes of the Class EA.

As requested, we are providing this report for your review and comments. Based on the findings, there appear to be no archaeological concerns at the proposed SPS location.
Please let us know if you have any questions or require further clarification.

Regards,

Beth Wang, EIT
Engineering Intern

Tel: (905) 452-5172, Ext. 321
Cell: (289) 541-8086
Email: beth.wang@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Métis Nation of Ontario (MNO)

From:	Jody Marks
To:	consultations@metisnation.org
Cc:	JustinH@metisnation.org; DavidD@metisnation.org; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:13:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, MNO.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner



Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	consultations@metisnation.org
Cc:	Preya Balgobin; jdegroote@innservices.co; Wendy Smeh; JustinH@metisnation.org; DavidD@metisnation.org
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:35:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image002.jpg

---

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Saugeen Ojibway Nation

(as the consultation contact for Saugeen First Nation and Chippewas of Nawash Unceded First Nation)

From:	Jody Marks
To:	emily.martin@saugeenojibwaynation.ca
Cc:	juanita.meekins@saugeenojibwaynation.ca; sfn@saugeen.org; chief.veronica@nawash.ca; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 4:16:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf Notice of Study Commencement-Cover Letter, Saugeen Ojibway Nation.pdf image003.png

---

Hello,

Please refer to the attached Class Environmental Assessment consultation documents.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	emily.martin@saugeenojibwaynation.ca
Cc:	juanita.meekins@saugeenojibwaynation.ca; sfn@saugeen.org; chief.veronica@nawash.ca; Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	July 7, 2022 3:35:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf image002.jpg

---

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Consultation Records with Agencies

From:	Jody Marks
Cc:	Preya Balgobin; Wendy Smeh; jdegroote@innservices.co
Bcc:	aadnc.infopubs.aandc@canada.ca; Peter.Dorton@ontario.ca; chunmei.liu@ontario.ca; cindy.hood@ontario.ca; brad.allen@ontario.ca; Ken.mott@ontario.ca; karla.barboza@ontario.ca; Aldo.Ingraldi@ontario.ca; andrew.theoharis@ontario.ca; tcane@innisfil.ca; gshaparew@innisfil.ca; nbowman@innisfil.ca; ldollin@innisfil.ca; ddavidson@innisfil.ca; ccautillo@innisfil.ca; tpanak@innservices.co; rbadam@innservices.co; bpaudel@innservices.co; ceo@innservices.co; rscheunemann@barrie.ca; Sherry.Diemert@barrie.ca; rvatri@newtecumseth.ca; Rob.Elliott@simcoe.ca; bthomas@innisfil.ca; hspacek@scdsb.on.ca; kdpechkovsky@smcdsb.on.ca; Bill.Kemeny@smdhu.org; andrew.fletcher@southsimcoepolice.ca; a.brown@lsrca.on.ca; m.bessey@lsrca.on.ca; angela.taylor@bell.ca; walter.kloostra@hydroone.com; dannyp@innpower.ca; David.Smith@enbridge.com; dpresley@mhbcplan.com; jason.ryan@gotransit.com; memadeley@innisfilchamber.com; kjacob@innisfil.ca; imccutcheon@grnland.com; acleaves@pearsoneng.com; bstanton@tathameng.com; ed.eissesbrothers@telizon.ca; homelife-barrie@rogers.com; mary.janewhite@sympatico.ca; wayne@antconstruction.ca; jbujak@baywoodhomes.com; graeme@hepburn.com; frankbaccilieri@yahoo.ca; celeste@cplan.ca; phammell@mariposahomes.ca; augustonalli@gmail.com; Nicole.s@cortelgroup.com; stefano@cortelgroup.com; ernie@countryhomes.ca; criscorp@on.aibn.com; peterc@deltaurban.com; kmackinnon@klmplanning.com; fpapa@fabianpapa.com; shaunad@geraniumcorporation.com; brafuse@georgiandowns.com; tony_orsi_07@yahoo.ca; jonathon.chai@hdrinc.com; joe@jjei.com; jeffslhri@rogers.com; stellafortini@hotmail.com; julian@lormelhomes.com; orli@lormelhomes.com; gjlucas@rogers.com; trevorm@monarchgroup.net; shiggins@parkbridge.com; cmortelliti@prattdevelopment.ca; previncourthomes@rogers.com; roger@ricedevelopment.ca; sbrumwell@skeltonbrumwell.ca; tsmith@smartcentres.com; larry@sunfieldhomes.com; mark@tribrik.com; lawtonrealties@rogers.com
Subject:	InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 20, 2022 3:43:00 PM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf image001.png

---

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. Please see the attached Notice of Study Commencement for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM
****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been

received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From:	Jody Marks
To:	"bkrul@nvca.on.ca"; "c.hibberd@nvca.on.ca"
Cc:	Wendy Smeh; Preya Balgobin; "jdegroote@innservices.co"
Subject:	FW: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 26, 2022 10:20:00 AM
Attachments:	IH SPS 2 Notice of Study Commencement.pdf image002.png

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. Please see the attached Notice of Study Commencement for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner



Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Wendy Smeh
Sent: January 24, 2022 2:52 PM
To: Peter.Dorton@ontario.ca
Cc: Jody Marks; Preya Balgobin; Jenna DeGroote; Nanda (MTO); Robert (MTO); Usman (MTO); Colin (MTO); Cameron (MTO)
Subject: Re: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Good Afternoon Peter,

Thank you for reaching out and for your feedback regarding Innsifil Heights Sewage Pumping Station No. 1 and 2.

Note that these assessments are for the pumping stations only, therefore, the crossing of Highway 400 is not within the scope of our project.

Please feel free to contact us again if you have additional questions.

Sincerely,

Wendy Smeh, C.E.T., PMP
Project Manager

280 Pretty River Parkway
Collingwood, ON L9Y 4J5
wendy.smeh@ainleygroup.com
Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334

_____
CAUTION: The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.
_____

From: Dorton, Peter (MTO) <Peter.Dorton@ontario.ca>
Sent: January 21, 2022 9:36 AM
To: Jody Marks <jody.marks@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co; Kandiah, Nanda (MTO) <Nanda.Kandiah@ontario.ca>; Vandenberg, Robert (MTO) <Robert.Vandenberg@ontario.ca>; Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>; Mulrenin, Colin (MTO)

<Colin.Mulrenin@ontario.ca>; Blaney, Cameron (MTO) <Cameron.Blaney@ontario.ca>
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hi Jody:

Similar to comments provided earlier this month on SPS 1, the Study Area along 5th SR for Innisfil Heights Sewage Pumping Station 2 looks to be beyond MTO Building & Land Use permit control area, therefore MTO review and approvals will not be required.

However, we note that this facility is intended to direct flows to the Lakeshore Wastewater Treatment Plant. Please confirm if there will be associated plans for a Highway 400 crossing, and note that any plans for a sewage main to cross the highway should be shared early in the process with MTO. MTO review and, if acceptable, Encroachment permit approval will be required for any works proposed on highway right - of - way.

Thanks,
Peter Dorton
Senior Project Manager
Ministry of Transportation
Central Operations, Highway Corridor Management Section
159 Sir William Hearst Avenue, 7th Floor Toronto, ON M3M 0B7
Cell: (437) 833 - 9396
E-Mail: peter.dorton@ontario.ca
Web: www.mto.gov.on.ca/english/engineering/management/corridor

---

From: Jody Marks <jody.marks@ainleygroup.com>
Sent: January 20, 2022 3:44 PM
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Subject: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. Please see the attached Notice of Study Commencement for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Beth Wang

From: Preya Balgobin
Sent: February 23, 2022 5:47 PM
To: Wendy Smeh; Jody Marks
Subject: FW: MHSTCI Letter - Innisfil Heights Sewage Pumping Station 2
Attachments: 2022-02-23-MHSTCI-Letter-InnisfilSPS-2.pdf

Comments from the MHSTCI.

Regards,
Preya Balgobin, P.Eng.
Senior Project Manager

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 209
Cell: (289) 541-8766

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Mallon, Jack (MHSTCI) <Jack.Mallon@ontario.ca>
Sent: February 23, 2022 3:01 PM
To: Preya Balgobin <preya.balgobin@ainleygroup.com>
Cc: jdegroote@innservices.co; Barboza, Karla (MHSTCI) <Karla.Barboza@ontario.ca>
Subject: MHSTCI Letter - Innisfil Heights Sewage Pumping Station 2

Good afternoon,

Please see attached MHSTCI's response to the notice of commencement for the Innisfil Heights SPS EA.

Do not hesitate to contact me if you have any questions.

Best,
Jack Mallon
Heritage Planner

Heritage Planning Unit | Programs and Services Branch

Heritage, Tourism and Culture Division

Ministry of Heritage, Sport, Tourism and Culture Industries

Phone: 437-522-6582

Ministry of Heritage, Sport, Tourism and Culture Industries

Programs and Services Branch
400 University Ave, 5th Flr
Toronto, ON M7A 2R9
Tel: 437.522.6582

Ministère des Industries du Patrimoine, du Sport, du Tourisme et de la Culture

Direction des programmes et des services
400, av. University, 5e étage
Toronto, ON M7A 2R9
Tél: 437.522.6582

Ontario

February 23, 2022 EMAIL ONLY

Preya Balgobin, P.Eng.
Senior Project Manager
Ainley Group
balgobin@ainleygroup.com

MHSTCI File	**:**	**0015696**
Proponent	**:**	**InnServices Utilities Inc.**
Subject	**:**	**Notice of Commencement**
Project	**:**	**Innisfil Heights Sewage Pumping Station 2**
Location	**:**	**Town of Innisfil, Ontario**

Dear Preya Balgobin,

Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with the Notice of Commencement for the above-referenced project. MHSTCI's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

Project Summary
InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of four new sewage pumping stations (SPS) to service the Innisfil Heights economic district. Each proposed SPS will require a Schedule B Municipal Class Environmental Assessment (MCEA) prior to its construction. The sewage pumping station will receive flows from the Innisfil Heights economic district and direct it to the Lakeshore Wastewater Treatment Plant.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

Archaeological Resources
This EA project may impact archaeological resources and should be screened using the MHSTCI *Criteria for Evaluating Archaeological Potential* to determine if an archaeological assessment is needed. MHSTCI archaeological sites data are available at *archaeology@ontario.ca*.

If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licenced under the *Ontario Heritage Act (OHA)*, who is responsible for submitting the report directly to MHSTCI for review.

Built Heritage Resources and Cultural Heritage Landscapes
The MHSTCI *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether this EA project may impact built heritage resources and/or cultural heritage landscapes.

If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MHSTCI recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Our Ministry's *Info Sheet #5: Heritage Impact Assessments and Conservation Plans* outlines the scope of HIAs. Please send the HIA to MHSTCI (and the local municipality as appropriate) for review and comment, and make it available to local organizations or individuals who have expressed interest in review.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Assessment Reporting
All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MHSTCI whether any technical cultural heritage studies will be completed for this EA project, and provide them to MHSTCI before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MHSTCI on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Jack Mallon on behalf of

Dan Minkin
Heritage Planner
Dan.Minkin@Ontario.ca

Copied to:

Karla Barboza, Team Lead, Heritage Planning Unit, MHSTCI – Karla.Barboza@ontario.ca
Jenna DeGroote, Capital Project Manager, InnServices Utilities Inc. - jdegroote@innservices.co

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MHSTCI makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MHSTCI be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Please notify MHSTCI (at archaeology@ontario.ca) if archaeological resources are impacted by EA project work. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the Ontario Heritage Act and the Standards and Guidelines for Consultant Archaeologists.

If human remains are encountered, all activities must cease immediately, and the local police and coroner must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified (at archaeology@ontario.ca) to ensure that the site is not subject to unlicensed alterations which would be a contravention of the Ontario Heritage Act.

Beth Wang

From: Preya Balgobin
Sent: November 28, 2022 5:15 PM
To: bparker@grnland.com
Cc: Wendy Smeh; Jenna DeGroote; Beth Wang; Lanting Xie
Subject: RE: Innisfil Heights SPS 2 Comments
Attachments: InnServices_ IH SPS 2 Comment Letter.pdf; InnServices Response to Greenland-signed-28Nov2022.pdf

Hi Brad,

Please find attached our response to Greenland's question relating to the Class EA for the Innisfil Heights Sewage Pumping Station 2.

If you have additional questions for the Class EA study team please feel free to reach out to me again.

Regards,
Preya Balgobin, P.Eng.
Senior Project Manager

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 209
Cell: (289) 541-8766

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: Brad Parker <bparker@grnland.com>
Sent: October 24, 2022 3:34 PM
To: balgobin@ainleygroup.com; Jenna DeGroote <jdegroote@innservices.co>
Cc: Jim Hartman <jhartman@grnland.com>; Stefano Cortellucci <Stefano@cortelgroup.com>; Mario Cortellucci <Mario.Cortellucci@cortelgroup.com>
Subject: Innisfil Heights SPS 2 Comments

[EXTERNAL]

Preya / Jenna,

On behalf of the Cortel Group – please see comments attached on the above noted project.

Thanks,

Brad Parker, P.Eng.,
Project Engineer

705-444-8805 ext. 301

GREENLAND® Consulting Engineers
A member of the Greenland Group of Companies

120 Hume Street, Collingwood, Ontario, Canada L9Y 1V5
tel: 705 444 8805 • fax: 705 444 5482
web: www.grnland.com

water resources • municipal infrastructure • environmental management
monitoring • information systems • research & development

Please consider the environment before printing this e-mail

This communication is intended only for the party to whom it is addressed, and may contain information which is privileged or confidential. Any other delivery, distribution, copying or disclosure is strictly prohibited and is not a waiver of privilege or confidentiality. If you have received this e-mail message in error, please notify the sender immediately by return electronic mail and delete this e-mail message.

Finally, the recipient should check this email and any attachments for the presence of viruses. GREENLAND accepts no liability for any damage caused by any virus transmitted by this email.

24 October 2022

Ainley Group
280 Pretty River Parkway
Toronto, ON, L9Y 4J5

File No. 3735

Attention: Ms. Preya Balgobin, P.Eng – Senior Project Manager

RE: Innisfil Heights Sewage Pumping Station 2 - Municipal Class Environmental Assessment – Notice of Study Commencement

Dear Ms. Balgobin,

On behalf of our client, the Cortel Group ('Cortel'), Greenland International Consulting Ltd. ('Greenland') is submitting comments in relation to the above noted project. In November 2019, The Town of Innisfil ('Town') announced the development of The Orbit, a community of 150,000 centred around 6th Line and the Metrolinx Corridor. Since then, no update has been made to the 2018 Master Servicing Plan ('MSP') to account for the large population increase.

We note that the current recommended preferred wastewater solution is being implemented based on the 2018 Master Servicing Plan ('MSP') which **does not take into account the Orbit Development along 6th Line and its 150,000-occupant capacity**. Updates need to be made regarding the capacities of the sanitary sewer main along 6th Line, Innisfil Heights Sewer Pumping Station 2, and the Lakeshore WPCP prior to the implementation of Pumping Stations upstream of the Orbit.

In addition to the above, Greenland has previously noted issues with the 2018 MSP preferred solution, please see attached Part II Order Request **(Attachment 1).** This Part II order was never resolved and no answers provided. Based on the aforementioned Part II Order and the addition of the Orbit population, the 2018 MSP should be updated to include the additional demand on the Town infrastructure and confirm sewer sizes, alignment and pumping station locations.

Respectfully,

Greenland Consulting Ltd.

Attachment 1: Greenland Consulting Part II Order dated 12 October 2018

GREENLAND®
Water Resources
Municipal Infrastructure
Environmental Management
Monitoring
Information Systems
Research & Development

AINLEY & ASSOCIATES LIMITED
195 County Court Blvd., Suite 300, Brampton, ON L6W 4P7
Tel: (905) 452-5172 • www.ainleygroup.com

VIA EMAIL

November 28, 2022 File No. 121031

Greenland Consulting Engineers
120 Hume Street
Collingwood, ON
L9Y 1V5

Attn: **Brad Parker, P.Eng.,**
Project Engineer

Re: **InnServices Innisfil Heights SPS 2 Environmental Assessment**

Dear Brad Parker:

Regarding the Part II order request, please see the attached letter dated September 1, 2020 from the MECP previously sent to Jim Hartman of Greenland that advises that the Part II order in question has been terminated. InnServices is working with the Town of Innisfil to confirm the "Occupant Capacity" of the Orbit and phasing of the Orbit. We understand discussions are currently ongoing for the Orbit area and an Orbit Master Plan is currently underway. Once confirmed by the Town of Innisfil, this information ("Occupancy Capacity", phasing of the Orbit, and the Orbit Master Plan) as well as similar types of confirmed information for other areas of the Town of Innisfil will be included in an update to the 2018 Master Servicing Plan (MSP).

The 2022 MSP, which is the update to the 2018 MSP, has just commenced. The 2022 MSP will address new areas and densities not identified in the 2018 MSP, such as RVH South Campus, Orbit secondary lands and update the overall Water & Wastewater servicing requirements for Innisfil up to 2051.

At this time our SPS EA's are following the recommended servicing as per the 2018 MSP and Schedule "B" EA requirements for the new Sewage Pumping Stations. Any updates as they come in from the 2022 MSP will be looked at as part of our EA efforts.

If you have any questions or require further assistance with this matter, please feel free to contact the undersigned.

Yours truly,

AINLEY & ASSOCIATES LIMITED



Preya Balgobin, P.Eng.
Senior Project Manager

cc: Jenna DeGroote, InnServices (By Email)

\\ag-barrie\ns1\Engineering\Collingwood\121031\6. Class EA Files\Consultation\InnSerices Response to Greenland.docx

Ministry of the Environment, Conservation and Parks

Office of the Minister

777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Tel.: 416-314-6790

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau du ministre

777, rue Bay, 5e étage
Toronto ON M7A 2J3
Tél. : 416-314-6790

Ontario

September 1, 2020

357-2019-564

Mr. Jim Hartman
120 Hume Street
Collingwood ON L9Y 1V5
Email: jhartman@grnland.com

Dear Mr. Hartman:

I am writing with regard to the Part II Order request received by the Ministry of the Environment, Conservation and Parks for five Schedule A+ and six Schedule B projects described within the Innisfil Master Servicing Plan Update (the Projects) as proposed by InnServices Utilities Inc. I understand that you have concerns related to the evaluation of alternatives for these Projects as well as concerns with the consultation completed during this process.

As part of our government's efforts to boost Ontario's economic recovery after COVID-19, we have passed the *COVID-19 Economic Recovery Act, 2020,* including amendments to the *Environmental Assessment Act*.

The changes to the *Environmental Assessment Act* (the Act) will allow us to build a strong environmental assessment program that effectively considers the input of local communities and focuses on projects that have the highest impact to the environment. The Act will continue to consider "the protection, conservation and wise management in Ontario of the environment." A key change made to the Act was to limit Part II Order requests to potential adverse impacts of projects on constitutionally protected Aboriginal or treaty rights. All Part II Order requests that were under review which do not pertain to potential adverse impacts on constitutionally protected Aboriginal or treaty rights have been terminated by the amendments.

Additionally, amendments made to the Act in 2019 exempted Schedule A and A+ projects in the Municipal Class Environmental Assessment (the Class EA) from the Act.

As such, I am writing to advise you of the status of your outstanding Part II Order request respecting the Projects. As the five Schedule A+ Projects are exempt from the Act and the request for the Schedule B projects was not related to a potential adverse

impact on constitutionally protected Aboriginal or treaty rights, the request has been terminated.

If InnServices Utilities Inc. proceeds with the Projects, it must ensure that it implements the Projects in the manner they were developed and designed, as set out in the Innisfil Master Servicing Plan Update documentation, and inclusive of all mitigating measures, and environmental and other provisions therein. In addition, the proponent will need to consider any other permits or approvals required under other legislation in order to proceed.

I would like to thank you for participating in the Class Environmental Assessment process and encourage you to continue working with the InnServices Utilities Inc. to address any outstanding concerns that you may have with these Projects. Should you have any questions or concerns, please feel free to contact Shannon Gauthier, directly at 416-258-8215 and Shannon.Gauthier@ontario.ca.

Sincerely,



Jeff Yurek
Minister of the Environment, Conservation and Parks

c: Tom Panak, InnServicies Utilities Inc
EA File No. 18074 – Innisfil Master Servicing Plan Update

From:	Jody Marks
Cc:	jdegroote@innservices.co; Preya Balgobin; Wendy Smeh
Bcc:	aadnc.infopubs.aandc@canada.ca; Peter.Dorton@ontario.ca; chunmei.liu@ontario.ca; cindy.hood@ontario.ca; brad.allen@ontario.ca; Ken.mott@ontario.ca; karla.barboza@ontario.ca; Aldo.Ingraldi@ontario.ca; andrew.theoharis@ontario.ca; tcane@innisfil.ca; gshaparew@innisfil.ca; nbowman@innisfil.ca; ldollin@innisfil.ca; ddavidson@innisfil.ca; ccautillo@innisfil.ca; tpanak@innservices.co; rbadam@innservices.co; bpaudel@innservices.co; ceo@innservices.co; rscheunemann@barrie.ca; Sherry.Diemert@barrie.ca; Tom.Reeve@barrie.ca; rvatri@newtecumseth.ca; Rob.Elliott@simcoe.ca; bthomas@innisfil.ca; hspacek@scdsb.on.ca; kdpechkovsky@smcdsb.on.ca; Bill.Kemeny@smdhu.org; andrew.fletcher@southsimcoepolice.ca; bkrul@nvca.on.ca; c.hibberd@nvca.on.ca; angela.taylor@bell.ca; walter.kloostra@hydroone.com; dannyp@innpower.ca; David.Smith@enbridge.com; dpresley@mhbcplan.com; jason.ryan@gotransit.com; memadeley@innisfilchamber.com; kjacob@innisfil.ca; lesliepollak@rogers.com; imccutcheon@grnland.com; acleaves@pearsoneng.com; bstanton@tathameng.com; dvella@ipsconsultinginc.com; richard@rinomatogroup.com; ed.eissesbrothers@telizon.ca; homelife-barrie@rogers.com; mary.janewhite@sympatico.ca; wayne@antconstruction.ca; jbujak@baywoodhomes.com; graeme@hepburn.com; frankbaccilieri@yahoo.ca; celeste@cplan.ca; phammell@mariposahomes.ca; augustonalli@gmail.com; Nicole.s@cortelgroup.com; stefano@cortelgroup.com; ernie@countryhomes.ca; criscorp@on.aibn.com; peterc@deltaurban.com; kmackinnon@klmplanning.com; fpapa@fabianpapa.com; shaunad@geraniumcorporation.com; brafuse@georgiandowns.com; tony_orsi_07@yahoo.ca; jonathon.chai@hdrinc.com; joe@jjei.com; jeffslhri@rogers.com; stellafortini@hotmail.com; Kim@lormelhomes.com; julian@lormelhomes.com; orli@lormelhomes.com; gjlucas@rogers.com; trevorm@monarchgroup.net; shiggins@parkbridge.com; cmortelliti@prattdevelopment.ca; previncourthomes@rogers.com; roger@ricedevelopment.ca; psheridan@scsconsultinggroup.com; sbrumwell@skeltonbrumwell.ca; tsmith@smartcentres.com; larry@sunfieldhomes.com; mark@tribrik.com; lawtonrealties@rogers.com; nicole.talpa@broccolini.com; acleaves@pearsoneng.com
Subject:	InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	Thursday, July 7, 2022 3:22:00 PM
Attachments:	InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf

---

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From:	Dorton, Peter (MTO)
To:	Jody Marks
Subject:	FW: InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre
Date:	August 5, 2022 9:32:02 AM
Attachments:	image003.jpg InnServices Inc. - IH SPS 2- Notice of Public Information Centre.pdf

---

From: Dorton, Peter (MTO)
Sent: August 3, 2022 5:28 PM
To: jody.marks@ainleygroup.ca
Cc: jdegroote@innservices.co; preya.balgobin@ainleygroup.com; Kandiah, Nanda (MTO) <Nanda.Kandiah@ontario.ca>; Vandenberg, Robert (MTO) <Robert.Vandenberg@ontario.ca>; Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>; Mulrenin, Colin (MTO) <Colin.Mulrenin@ontario.ca>; Blaney, Cameron (MTO) <Cameron.Blaney@ontario.ca>
Subject: FW: InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre

Hi Jody:

We have reviewed the PIC slides and have no concerns with the preferred location of Sewage Pumping Station 2 at the NE corner of SR5 / 7th Line. This location is beyond MTO Building & Land Use permit control area, therefore MTO review and approvals will not be required.

However, we note that this facility is intended to direct flows to the Lakeshore Wastewater Treatment Plant, and that forcemains crossing Hwy 400 at Innisfil Beach Rd. and 6th Line are proposed (p.6 of 22 of the PIC presentation). Any plans for a sewage main to cross Highway 400 should be shared early in the process with MTO. MTO review and, if acceptable, Encroachment permit approval will be required for any works proposed on or across highway right - of - way.

Thanks,
Peter Dorton
Senior Project Manager
Ministry of Transportation
Central Operations, Highway Corridor Management Section
159 Sir William Hearst Avenue, 7th Floor Toronto, ON M3M 0B7
Cell: (437) 833 - 9396
E-Mail: peter.dorton@ontario.ca
Web: www.mto.gov.on.ca/english/engineering/management/corridor

---

From: Jody Marks <jody.marks@ainleygroup.com>
Sent: July 7, 2022 3:23 PM

Cc: jdegroote@innservices.co; Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>
Subject: InnServices, Innisfil Heights Sewage Pumping Stage 2 Class EA - Public Information Centre

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. InnServices Utilities Inc. has retained the services of Ainley Group to undertake a Schedule B Municipal Class Environmental Assessment (Class EA) to evaluate options to construct a new sewage pumping station to be located on 5th Sideroad between Innisfil Beach Road and 7th Line in the Town of Innisfil.

As part of Phase 2 of the Class EA process, various alternatives have been developed for evaluation and presented as part of a virtual Public Information Centre. Please see the attached Notice of Public Information Centre for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227
Cell: (416) 576-2233
Email: jody.marks@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

Consultation Records with Property Owners

From:	Wendy Smeh
To:	April Cleaves
Cc:	Preya Balgobin; jdegroote@innservices.co; Gary Pearson; Mike Dejean; Isabel Bercasio; TJ Rinomato; Jody Marks
Subject:	Re: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement
Date:	January 25, 2022 1:52:23 PM
Attachments:	image002.jpg image003.png 2022-01-25 - April Cleaves.pdf

Hello Ms. Cleaves,

Thank you for reaching out to the study team. Please find the response to your email in the attached letter.

Please feel free to contact us again if you have additional comments and questions.

Wendy Smeh, C.E.T., PMP
Project Manager

280 Pretty River Parkway
Collingwood, ON L9Y 4J5
wendy.smeh@ainleygroup.com
Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334

CAUTION: The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: January 20, 2022 5:20 PM
To: Jody Marks <jody.marks@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co <jdegroote@innservices.co>; Gary Pearson <gpearson@pearsoneng.com>; Mike Dejean <mdejean@pearsoneng.com>; Isabel Bercasio <isabel@rinomatogroup.com>; TJ Rinomato <tj@rinomatogroup.com>
Subject: RE: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Good Afternoon Jody,

We are the civil engineering firm for the Rinomato development at 7131 5th SR. It is my understanding that the landowner's group has provided preliminary servicing requirements for the development already, however please let us know if more detailed information is needed at this time. Once your team is at the stage of placement of the pump stations we have also had preliminary discussions with the Town regarding options.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Jody Marks <jody.marks@ainleygroup.com>
Sent: January 20, 2022 3:44 PM
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; jdegroote@innservices.co
Subject: InnServices, Municipal Class EA IH SPS 2 - Notice of Study Commencement

Hello,

InnServices Utilities Inc. completed a Master Servicing Plan (MSP) update in 2018 which identified short- and long-term strategies for water and wastewater servicing to accommodate the population and employment growth outlined in the Innisfil Official Plan (2018). The MSP recommended construction of five new sewage pumping stations to service the Innisfil Heights economic district. Please see the attached Notice of Study Commencement for further details.

Thank you.

Regards,

Jody Marks
Environmental Planner

Tel: (705) 726-3371 Ext. 227

WWW.AINLEYGROUP.COM

****Please note that we are beginning to transition our primary email addresses to a new format. While my previous address will continue to work, we ask that you please update your address book with my new email address: jody.marks@ainleygroup.com****

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

Please note that Pearson Engineering Limited will be blocking all emails containing attachments with a .zip or similar compression extension. When sending a compression file please rename the extension and include details in the body of the email on how to make the file useable again.

AINLEY & ASSOCIATES LIMITED
195 County Court Blvd., Suite 300, Brampton, ON L6W 4P7
Tel: (905) 452-5172 • www.ainleygroup.com

VIA EMAIL

January 25, 2022 File No. 121031

April Cleaves, B.A. Tech., C.E.T.
Project Manager
Pearson Engineering
48 Alliance Blvd, Suite B7
Markham, ON
L3R 8B8

Re: Notice of Study Commencement – Master Servicing Plan, Innisfil Heights Sewage Pumping Station 2

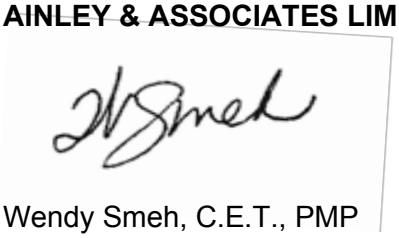
Dear Ms. Cleaves,

Thank you for advising us regarding Rinomato Developments servicing progress with the Town and the offer of providing additional information. Once we begin to narrow down options for placement of the pumping station, we will contact yourself and the Town to further discuss.

We will include Pearson Engineering and Rimomato Developments as interested parties to the EA and continue to include you on our mailing list to provide updates as we progress with IH SPS 2 Class Environmental Assessment. If you have any questions or require further assistance with this matter, please feel free to contact the undersigned.

Yours truly,

AINLEY & ASSOCIATES LIMITED



Wendy Smeh, C.E.T., PMP
Project Manager

WLS/\\ag-barrie\ns1\Engineering\Collingwood\121031\6. Class EA Files\Consultation\IH SPS 2\1. Notice of Commencement\Responses to Comments Rec'd\2022-01-19 - Anne Cleaves.docx

cc: Jenna DeGroote- InnServices (By Email)
Preya Balgobin – Ainley Group (By Email)

Beth Wang

From: April Cleaves <acleaves@pearsoneng.com>
Sent: August 16, 2022 12:44 PM
To: Preya Balgobin
Cc: Jenna DeGroote; Jody Marks; Mike Dejean; Gary Pearson; Jeremy Prahl; Isabel Bercasio; Kyle Galvin; Wendy Smeh; Beth Wang
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hi Preya,
Even if we do need to be 100m away we still have room outside of that setback for option 2D. However, as you mentioned below line item b. would give us much more flexibility if it includes replacing the existing bed.
Shawn Filson is the planner for these sites so would probably be the best starting point at the LSRCA.
The week of September 6th is fine with us for a meeting to discuss further. We currently have the following availability,

- 7th 10:00 to 12:00 or after 3:00
- 8th 10:00 to 12:00 or after 1:30

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

Please note I will be on vacation starting August 29th returning September 6th

---

From: Preya Balgobin <preya.balgobin@ainleygroup.com>
Sent: August 16, 2022 11:59 AM
To: April Cleaves <acleaves@pearsoneng.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; Mike Dejean <mdejean@pearsoneng.com>; Gary Pearson <gpearson@pearsoneng.com>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Kyle Galvin <kgalvin@ipsconsultinginc.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hi April,

Thanks for the feedback. Wendy is on vacation starting today and returns on September 6. We can set up a meeting for a day after she returns. In the meantime, we will need to confirm if the Lake Simcoe Protection Plan does or doesn't allow the SPS to be located at option 2D. The exact wording of the clause is below:

4.15-DP: Subject to other policies of the Plan, a new on-site sewage system or subsurface sewage works shall not be permitted within 100 metres of the Lake Simcoe shoreline, other lakes, or any permanent stream except in the following circumstances:

a. *a proposal for an on-site sewage system or subsurface sewage works that would serve an agricultural use, an agricultural-related use or a public open space;*
b. *a proposal for an on-site sewage system or subsurface sewage works that would replace or expand the capacity of an existing on-site sewage system or subsurface sewage works that will serve a use that would have been permitted by the applicable zoning by-law, as of the effective date of the Plan; or*
c. *a proposal for an on-site sewage system or subsurface sewage works that relates to a development proposal for only one dwelling, where the proposal would have been permitted by the applicable zoning by-law, as of the effective date of the Plan.*

The wording in item (b) is unclear as to whether "replace" includes replacing a septic bed(s) with a pump station. If it does, we're good to go. Otherwise, we'll have to either ask for a permit or variance (if such a thing exists for this situation). It's best to get feedback directly from the LSRCA before finalizing this location. Do you have a contact with them?

Regards,
Preya Balgobin, P.Eng.
Senior Project Manager

www.ainleygroup.com
Tel: (905) 452-5172 Ext. 209
Cell: (289) 541-8766

CAUTION: *The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.*

From: April Cleaves <acleaves@pearsoneng.com>
Sent: August 16, 2022 10:48 AM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; Mike Dejean <mdejean@pearsoneng.com>; Gary Pearson <gpearson@pearsoneng.com>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Kyle Galvin <kgalvin@ipsconsultinginc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Good Morning Wendy,
Further to your provided comments we have discussed with Cambium the LSPP Section 4.15-DP requirements regarding no on-site sewage system or subsurface sewage works within 100m of any permanent stream.
We have reviewed the 100m setback from the top of bank for the unnamed headwater tributary of Lovers Creek north of the proposed SWM Pond and there is approximately 23m remaining to the southern property line. We have assumed this will be sufficient space for the requirements of the pump station.
Note the regulated area at the southern side of option 2D is the roadside ditch and receives intermittent flows only.



Please let us know if you would like to setup a meeting to discuss this or the overall development further.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

Please note I will be on vacation starting August 29th returning September 6th

---

From: April Cleaves
Sent: August 11, 2022 8:15 AM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>; Mike Dejean <mdejean@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Good Morning Wendy,

Thank you for your comments. We will discuss with our team and would like to setup a meeting that will also include Cambium as our environmental consultant on the subject developments.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: August 10, 2022 5:30 PM
To: Mike Dejean <mdejean@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; April Cleaves <acleaves@pearsoneng.com>
Subject: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hello Mike,

Attached please find the response to Pearson's PIC comment letter dated August 4, 2022.

Please let us know if you have any questions or would like to discuss further.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Ainley GROUP

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: August 4, 2022 1:54 PM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Rama Badam <rbadam@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Thank you Wendy. Will take that into consideration with our review.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: August 4, 2022 1:49 PM
To: April Cleaves <acleaves@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Rama Badam <rbadam@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Hi April,

With regards to the sewage pumping station size for IH SPS 2, we haven't commenced with preliminary design but can offer the following comments.

Based on the EA assumptions, the SPS will service approximately 230 ha of ICI lands. The EA assumption was 20 m3/ha/day. For this area it works out to 53 L/s. There are many factors that can impact the size of the SPS as we move forward with preliminary design, however, we expect that we could be looking at an area of approximately 15m x 15m for the SPS proper.

Please let us know if you have any additional questions or comments.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: July 26, 2022 12:36 PM
To: Rama Badam <rbadam@innservices.co>
Subject: FW: IH SPS 2 - 7131 5th Sideroad Property

[EXTERNAL]

Good Afternoon Rama,
I see that Jenna is out of the office until August 8th. Can you provide any information regarding the pump stations? The size and impact of the pump station itself may change some of the comments we provide by the August 4th deadline.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: April Cleaves
Sent: July 26, 2022 12:34 PM

To: Jenna DeGroote <jdegroote@innservices.co>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Hi Jenna,
Is there any information you can provide regarding what the proposed pump stations will look like, size etc.? Wasn't sure if you might have drawings for any of the ones that are further along in the process.

Thank you,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Jenna DeGroote <jdegroote@innservices.co>
Sent: July 13, 2022 10:47 AM
To: April Cleaves <acleaves@pearsoneng.com>
Subject: IH SPS 2 - 7131 5th Sideroad Property

Good morning April,

Wondering if you could give me a call when you are free? Our consultant is working on the PIC information for IH SPS 2, and I just have a question about the 7131 property.

My cell is 705-791-9678

Jenna DeGroote, C.E.T.
Capital Project Manager

innservices

InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON L9S 0J3
(705) 431-6870 Ext. 252

Please note that Pearson Engineering Limited will be blocking all emails containing attachments with a .zip or similar compression extension. When sending a compression file please rename the extension and include details in the body of the email on how to make the file useable again.

Beth Wang

From: April Cleaves <acleaves@pearsoneng.com>
Sent: March 10, 2023 10:26 AM
To: Wendy Smeh; Jeremy Prahl
Cc: Jenna DeGroote; Preya Balgobin; Beth Wang; Isabel Bercasio; Mario Antoun; Cambium Admin
Subject: Re: InnServices IH SPS 2 EA - 7131 5th Sideroad Property (12513-002)

Hi Wendy,
Isabel also emailed yesterday providing Rinomato's acceptance of sharing the report. Please let me know if you didn't receive the email and I can forward it.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: March 10, 2023 10:23 AM
To: Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; April Cleaves <acleaves@pearsoneng.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Mario Antoun <mario@tonluproperties.ca>; Cambium Admin <file@cambium-inc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property (12513-002)

Hi Jeremy,

Thank you for providing the report. We will wait for confirmation from Rinomato to confirm they are alright with sharing the EIS with Curve Lake First Nations. CLFN want to review it to advise if they require additional studies from us and to get a better understanding of the project area.

Regards,

Wendy Smeh, C.E.T., PMP

Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>
Sent: March 9, 2023 8:51 PM
To: April Cleaves <acleaves@pearsoneng.com>; Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Mario Antoun <mario@tonluproperties.ca>; Cambium Admin <file@cambium-inc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property (12513-002)

Good evening, Wendy,

Please see attached the latest version of the EIS for the proposed Draft Plan of Subdivision at 7131 5th Sideroad in Innisfil. As noted by April, we are anticipating further adjustments to the internal road configuration and will be updating the EIS to reflect those changes in the next few weeks.

Let me know if you have any specific questions.

Thanks,
Jeremy

Jeremy Prahl, B.Sc., EP, CAN-CISEC
Group Manager - Natural Sciences
Cambium - Barrie
249.359.0689
866.217.7900
cambium-inc.com

Environmental | Building Sciences | Geotechnical | Construction Quality Verification

This email and attachments are intended solely for the use of the recipient and may contain personal information that is regulated by the Personal Information Protection and Electronic Documents Act, S.C. 2000 C5. If you are not the

intended recipient or do not agree to comply with the Act, please notify the sender by return email or telephone and delete the original message and attachments without making a copy

From: April Cleaves <acleaves@pearsoneng.com>
Sent: Thursday, March 9, 2023 4:39 PM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Mario Antoun <mario@tonluproperties.ca>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Good Afternoon Wendy,
We are currently undergoing draft plan changes based on County requirements for the road layout, however the SWM Pond block location is proposed to remain as you saw previously.
I have added in Isabel from Rinomato to confirm they are alright with sharing the EIS and Jeremy from Cambium to ensure the latest version is provided.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: Thursday, March 9, 2023 2:50 PM
To: April Cleaves <acleaves@pearsoneng.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Beth Wang <beth.wang@ainleygroup.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hi April,

I hope all is well.

We are following up regarding any updates about the stormwater management pond and related approvals. Have you made any progress with the approvals?

We are still coordinating with Curve Lake First Nations regarding the site. In our last meeting with them, we discussed that you had completed an environmental impact study, by Cambium, for the property. They asked if they could review it, in order to determine if they want to recommend additional studies to complete as a part of our project. Please let us know if we can share the report with them.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: September 28, 2022 11:23 AM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Mike Dejean <mdejean@pearsoneng.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Gary Pearson <gpearson@pearsoneng.com>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Kyle Galvin <kgalvin@ipsconsultinginc.com>; Taylor Arkell <tarkell@pearsoneng.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hi Wendy,
Thank you for the updates and MECP responses. We are reviewing those internally and will get back to you on the responses/additional information.
We are still working on the revised pond layout and are working with the LSRCA to get them to approve the channel setbacks before we finalize the pond layout. We were only able to meet with them this morning so that work is still ongoing. We will get you our updated pond layout as soon as that is finalized.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: September 26, 2022 2:26 PM
To: April Cleaves <acleaves@pearsoneng.com>
Cc: Jenna DeGroote <jdegroote@innservices.co>; Mike Dejean <mdejean@pearsoneng.com>; Preya Balgobin <preya.balgobin@ainleygroup.com>; Gary Pearson <gpearson@pearsoneng.com>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Kyle Galvin <kgalvin@ipsconsultinginc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hi April,

At the September 7th meeting for the future sewage pumping station location at 7131 5th Sideroad, Pearson advised that updated site plans would be available for the SWM pond area in approximately two weeks. We are just following up regarding the status. Please forward if available or provide an update regarding their progress.

Also, we were in contact with the MECP and Conservation Authority regarding setbacks to the permanent watercourse. Shawn Filson from Lake Simcoe Region Conservation Authority advised that 'the Lake Simcoe Protection Plan was born out of the MECP guidelines, so it is better to consult with MECP other than LSRCA regarding the policy'.

Tom Teske (Tom.Teske@ontario.ca) from the MECP provided the response below.

Q1 - Does…replacing a septic bed with a sewage pumping station counts for "replace"?

The Lake Simcoe Protection Plan definition of an On-site sewage works (approved under Building Code Act) or Subsurface sewage works (approved under the Ontario Water Resources Act) as a sewage works disposing of sewage from one or more buildings in a manner that does not dispose of sewage to a surface water. The proponent appears to be decommissioning an existing component (the tile bed) of an existing sewage works that disposes of sewage from a building, but does not dispose of sewage to surface water. The LSPP has some restrictions on decommissioning/replacing an existing tile bed. I would need to know where the sewage from the existing building is going to be disposed and whether any replacement tile bed increases the capacity of the subsurface sewage works? Further I would need to know if the replacement tile bed is serving a agricultural use. If the property is being connected to municipal services see Q2.

Q2 - Does …replacement (have to be) of same type of infrastructure"
The Lake Simcoe Protection Plan does not restrict the replacement/decommissioning of either an On-site sewage works (approved under Building Code Act) or Subsurface sewage works (approved under the Ontario Water Resources Act) where sewage disposal will occur at an existing Sewage treatment plant with existing capacity to dispose of the sewage.

Q3 - Please see the answer regarding how close an SPS can be to a stormwater pond:

The LSPP treats a ministry approved stormwater pond as a sewage works not a waterbody. Where the SPS is being sited near a approved stormwater management pond there would be no LSPP setback consideration. Having said that other sections of the OWRA may be relevant.

The MECP's response looks positive with respect to considering this location for the SPS. With respect to Q3's response, can Pearson confirm if there are relevant sections of the OWRA that should be considered with regards to set back limits?

Sincerely,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: August 16, 2022 10:48 AM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; Mike Dejean <mdejean@pearsoneng.com>; Gary Pearson <gpearson@pearsoneng.com>; Jeremy Prahl <Jeremy.Prahl@cambium-inc.com>; Isabel Bercasio <isabel@rinomatogroup.com>; Kyle Galvin <kgalvin@ipsconsultinginc.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Good Morning Wendy,
Further to your provided comments we have discussed with Cambium the LSPP Section 4.15-DP requirements regarding no on-site sewage system or subsurface sewage works within 100m of any permanent stream.
We have reviewed the 100m setback from the top of bank for the unnamed headwater tributary of Lovers Creek north of the proposed SWM Pond and there is approximately 23m remaining to the southern property line. We have assumed this will be sufficient space for the requirements of the pump station.
Note the regulated area at the southern side of option 2D is the roadside ditch and receives intermittent flows only.



Please let us know if you would like to setup a meeting to discuss this or the overall development further.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

Please note I will be on vacation starting August 29th returning September 6th

---

From: April Cleaves
Sent: August 11, 2022 8:15 AM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>; Mike Dejean <mdejean@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Good Morning Wendy,
Thank you for your comments. We will discuss with our team and would like to setup a meeting that will also include Cambium as our environmental consultant on the subject developments.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: August 10, 2022 5:30 PM
To: Mike Dejean <mdejean@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>; April Cleaves <acleaves@pearsoneng.com>
Subject: InnServices IH SPS 2 EA - 7131 5th Sideroad Property

Hello Mike,

Attached please find the response to Pearson's PIC comment letter dated August 4, 2022.

Please let us know if you have any questions or would like to discuss further.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Ainley GROUP
Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: August 4, 2022 1:54 PM
To: Wendy Smeh <wendy.smeh@ainleygroup.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Rama Badam <rbadam@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Thank you Wendy. Will take that into consideration with our review.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Wendy Smeh <wendy.smeh@ainleygroup.com>
Sent: August 4, 2022 1:49 PM
To: April Cleaves <acleaves@pearsoneng.com>
Cc: Preya Balgobin <preya.balgobin@ainleygroup.com>; Jenna DeGroote <jdegroote@innservices.co>; Rama Badam <rbadam@innservices.co>; Jody Marks <jody.marks@ainleygroup.com>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Hi April,

With regards to the sewage pumping station size for IH SPS 2, we haven't commenced with preliminary design but can offer the following comments.

Based on the EA assumptions, the SPS will service approximately 230 ha of ICI lands. The EA assumption was 20 m3/ha/day. For this area it works out to 53 L/s. There are many factors that can impact the size of the SPS as we move forward with preliminary design, however, we expect that we could be looking at an area of approximately 15m x 15m for the SPS proper.

Please let us know if you have any additional questions or comments.

Regards,

Wendy Smeh, C.E.T., PMP
Project Manager

Tel: (705) 445-3460 Ext. 135
Cell: (705) 443-9334
wendy.smeh@ainleygroup.com

WWW.AINLEYGROUP.COM

The information contained in and/or attached to this transmission is solely for the use of the intended recipient. Any copying, distribution or use by others, without the express written consent of the Ainley Group, is strictly prohibited. The recipient is responsible for confirming the accuracy and completeness of the information with the originator. Please advise the sender if you believe this message has been received by you in error.

Ainley Group is committed to providing accessible customer service. Please inform us if you require this information in an alternative format or require communication supports.

From: April Cleaves <acleaves@pearsoneng.com>
Sent: July 26, 2022 12:36 PM
To: Rama Badam <rbadam@innservices.co>
Subject: FW: IH SPS 2 - 7131 5th Sideroad Property

[EXTERNAL]

Good Afternoon Rama,
I see that Jenna is out of the office until August 8th. Can you provide any information regarding the pump stations? The size and impact of the pump station itself may change some of the comments we provide by the August 4th deadline.

Regards,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: April Cleaves
Sent: July 26, 2022 12:34 PM

To: Jenna DeGroote <jdegroote@innservices.co>
Subject: RE: IH SPS 2 - 7131 5th Sideroad Property

Hi Jenna,
Is there any information you can provide regarding what the proposed pump stations will look like, size etc.? Wasn't sure if you might have drawings for any of the ones that are further along in the process.

Thank you,

April Cleaves, B.A. Tech., C.E.T.
Project Manager

PEARSON ENGINEERING

BARRIE HEAD OFFICE
48 Alliance Blvd, Suite B7
Barrie, ON L4M 5K3
P: 705-719-4785 ext. 233
acleaves@pearsoneng.com
pearsoneng.com

GTA	OTTAWA	OWEN SOUND
905-597-5572	613-416-1232	226-256-7957

From: Jenna DeGroote <jdegroote@innservices.co>
Sent: July 13, 2022 10:47 AM
To: April Cleaves <acleaves@pearsoneng.com>
Subject: IH SPS 2 - 7131 5th Sideroad Property

Good morning April,

Wondering if you could give me a call when you are free? Our consultant is working on the PIC information for IH SPS 2, and I just have a question about the 7131 property.

My cell is 705-791-9678

Jenna DeGroote, C.E.T.
Capital Project Manager

innservices

InnServices Utilities Inc.
7251 Yonge Street
Innisfil, ON L9S 0J3
(705) 431-6870 Ext. 252

Please note that Pearson Engineering Limited will be blocking all emails containing attachments with a .zip or similar compression extension. When sending a compression file please rename the extension and include details in the body of the email on how to make the file useable again.