FINAL PROJECT FILE

Long Point Road Sanitary Sewer and Craigleith Wastewater Treatment Plant Upgrades Municipal Class EA

21-2061

January 22nd, 2024, Amended Version per additional comments received.

WT INFRASTRUCTURE
PRACTICAL INNOVATION

OFFICE
17-370 Stone Road West
P.O. Box 25002
Guelph, ON N1G 4T4
T: 1.833.984.6372
www.wtinfrastructure.ca

EXECUTIVE SUMMARY

The Town of the Blue Mountains (Town) is undertaking a Schedule "B" Municipal Class Environmental Assessment (EA) to determine the preferred alternative to convey wastewater from the Grey Road 21 Sanitary Trunk Sewer to the Craigleith WWTP.

In 2006, The Town of Blue Mountains completed a Combined Environmental Assessment Master Plan Phase 2 for the Craigleith, Castle Glen, and Osler Service Areas (Combined EA Phase 2 Final Report) that identified a temporary solution running a 300 mm diameter sanitary sewer from the end of the Grey Road 21 Trunk Sanitary Sewer to the Craigleith Sanitary Pumping Station (SPS). It was identified at that time that the preferred alternative would be a sanitary sewer extending along Long Point Road to a new SPS at the Craigleith Wastewater Treatment Plant (WWTP).

In addition to the sanitary sewer conveyance problem, the Town identified concerns related to the technical and social impacts associated with the septage/leachate receiving station at the Craigleith SPS. Therefore, the Schedule "B" Municipal Class EA is to also include the assessment of the potential relocation of the septage/leachate receiving station.

As required by the Municipal Class EA process, a Schedule B project generally includes improvements and minor expansions of existing facilities where there is the potential for some adverse environmental impacts and, therefore, the proponent is required to proceed through a screening process including consultation with those who may be affected. This project has followed Phase 1 and 2 of the Class EA process including issuance of a notice of consultation, two public information centres and a notice of completion, as well as notification of agencies and stakeholders.

A review of the background and planning conditions indicate that the existing sanitary production and short-term development within the contributing area to the Grey Road 21 Trunk Sanitary Sewer will meet or exceed the current capacity of the temporary sewer on Highway 26 (45 L/s) and that the medium-term development (5-10 years) will exceed the capacity of the temporary sewer resulting in potential surcharging and back-ups in the system. Furthermore, the future potential contributing area to the Grey Road 21 Trunk Sanitary Sewer represents a build-out flow of 235 L/s. This flow exceeds the current WWTP capacity but is within the capacity of the Grey Road 21 Trunk Sanitary Sewer. Therefore, since the collection system components have a lifespan of greater than 50 years, the proposed preferred solution should have the capacity to convey the ultimate build-out condition.

A screening of alternatives identified four feasible alternatives as follows:

1. Alternative A – Do Nothing
2. Alternative B – Expand the Craigleith Sanitary Pumping Station and Collection System
3. Alternative C – New Trunk Sewer to New Sanitary Pumping Station at the Craigleith WWTP
4. Alternative D – New Trunk Sewer to New Sanitary Pumping Station on Long Point Road

For the septage/leachate receiving station, the two identified feasible alternatives were:

1. Upgrade the existing receiving station at the Craigleith SPS.
2. Relocate the receiving station to the Craigleith WWTP site.

An inventory of the natural, social, and cultural heritage of the project area was completed and presented the following findings:

- Ecological Assessment – The study identified no species at risk and some low-quality habitat for potential species at risk within the study area.
- Hydrogeologic/Geotechnical Conditions – Groundwater conditions within the project area are a concern due to their proximity to the surface and bedrock may be an issue for construction around the existing WWTP.

- Archaeological Assessment – The majority of the project area, with the exception of the potential land acquisition associated with Alternative D, has been disturbed and there are no previously identified specific areas of cultural significance or archaeological interest. A Stage 2 Archaeaological Assessment is required prior to construction of undisturbed areas within the Craigleith WWTP Site.
- Cultural Assessment – The study identified no cultural heritage resources within or adjacent to the study area.

An evaluation of the four alternatives for sanitary collection and two alternatives for septage/leachate receiving were assessed against the technical, natural, social/cultural heritage and economic environmental criteria. A scoring and ranking system was used to provide a transparent process for the assessment of alternatives.

The preferred alternatives are Alternative C - New Trunk Sewer to New Sanitary Pumping Station at the Craigleith WWTP and relocate the receiving station to the Craigleith WWTP site.

The preferred alternatives consist of the following components:

- Approximately 525 m long – 525 mm diameter sanitary sewer from the intersection of Grey Road 21 and Highway 26 along Long Point Road to a new sanitary pumping station located on the WWTP site.
- A new sanitary pumping station sized for ultimate build-out with initial pump installation to meet the short-term flow demands located in a new building opposite the main WWTP administration building.
- Twin forcemains from the new pumping station to the headworks of the wastewater treatment plant.
- A new enclosed septage/leachate receiving station co-located with the new sanitary pumping station including a flow balancing tank, noise, and odour mitigation measures, covered unloading area and automated system for revenue management.
- Repurposed access from Brophy's Lane to allow for improved vehicle access to the site for safety and noise management.
- Revisions to site drainage and the addition of a berm/vegetated buffer enhancement to reduce visual, noise and odour impacts from the WWTP including the new infrastructure to any off-site receiver.

The estimated cost of these works at a Class "D" level (+-20%) is $8.0M with $5.0M allocated to the Trunk Sewer and Sanitary Pumping Station and $3.0M allocated to the Septage/Leachate Receiving Station and site work upgrades.

The next steps for the project, upon issuance of the Notice of Completion and resolution of any agency, stakeholder, and public comments, will be to develop the preliminary design that will advance the design and address potential impacts with the objective of mitigating their impacts to the extent possible. These will include:

- Review of traffic concerns relating to the Highway 26 and Long Point Road intersection as it relates to ingress/egress of septage/leachate hauling trucks.
- Quantification of the berm/vegetative buffer improvements necessary to mitigate localized concerns related to visual, noise and odour impacts.
- Design optimization to mitigate capital cost risks related to geotechnical conditions and short to long term implementation staging for operational efficiency.
- Completion of a Stage 2 Archaeological Assessment of the undisturbed areas of the Craigleith WWTP impacted by proposed construction in advance of commencing onsite works.

WT INFRASTRUCTURE
PRACTICAL INNOVATION

January 22, 2024

Town of the Blue Mountains
32 Mill Street, P.O. Box 310
Thornbury, ON, N0H 2P0

Re: **Final Project File**
Long Point Road Sanitary Sewer and Craigleith Wastewater Treatment Plant Upgrades Municipal Class EA
21-2061 | VERSION 3

WT Infrastructure Solutions Incorporated (WT) is pleased to submit the following report as part of the project delivery for the Long Point Road Sanitary Sewer and Craigleith Wastewater Treatment Plant Upgrades Municipal Class Environmental Assessment.

This project file has been amended from the March 30th, 2023, original notice of completion for the following reasons in order to ensure that all potential stakeholders and agencies had adequate information and opportunity to participate in the Class EA process:

- Several potentially interested stakeholder and indigenous communities did not receive the initial notifications due to a clerical error. Upon identification of that error, all groups were notified and provided the opportunity to review and consult on the Project.
- Additional comments were received requesting that a Cultural Heritage Assessment be completed on the preferred alternative. There were no findings of significance with that study.

The Project File that is attached to this letter is complete and subject to any additional comments received during a final 30-day review period, the project may proceed to implementation subject to the recommended works to be completed as part of the implementation to mitigate identified impacts of the project.

Subject to any responses received prior to the completion of the 30-day period following final posting of

Respectfully submitted,

WT INFRASTRUCTURE SOLUTIONS INCORPORATED

Jamie Witherspoon, P.Eng., LEED AP
President
Project Manager

17-370 Stone Road West
P.O. Box 25002
Guelph, ON N1G 4T4

jamie.witherspoon@
wtinfrastructure.ca

519.400.6701

@solutions_wt

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1 INTRODUCTION

1.1 Background

The Town of The Blue Mountains has initiated a Municipal Class Environmental Assessment to evaluate and select the preferred solution to address the need for the extension of a gravity sewer and associated sewage pumping station, at the Town's Craigleith Wastewater Treatment Plant (WWTP).

The Craigleith Wastewater Treatment Plant collection system has approximately 5,000 units connected to it, and it consists of forty-eight (48) kilometers of pipe network. The wastewater conveyance system starts near County Road 19 with a 450mm sewer which increases to a 525 mm sewer at the corner of County Road 21 and Highway 26. The sanitary sewer than extends west to the existing Craigleith Sewage Pumping Station with a 300mm sewer which increase to 375mm near to the pumping station. Wastewater is then pumped to the Craigleith WWTP via dual force mains.

The 2021 Year End Water and Wastewater Capacity Assessment Report estimates that the total number of future connections will be approximately 3,993. As the existing Craigleith Pumping Station and the 300mm sewer were not intended to permanently convey sanitary flow for existing and future development, the Town's sanitary sewer collection and pumping infrastructure within the Craigleith area requires upgrades and enhancements to meet the projected demands of growth.

The intent of this study is to support the Town in the development and assessment of technical solutions in line with the Town's goals and objectives. Each solution will be assessed considering natural, social, technical, and economic environments, and the preferred solution will be selected in consultation with regulatory agencies and the public to allow for the Town to proceed to implementation with a clearly identified scope, cost, and risk, in order to maximize value for the system.

1.1.1 Reference Material

The reference material used for the development of the study included:

- Class Environmental Assessment for the Craigleith Sewage Treatment Plant Expansion – Environmental Study Report, November 2009
- Combined Environmental Assessment Master Plan for Craigleith, Castle Glen, and Osler Service Area – June 2006
- Grey County Road 21 – Trunk Sewer Record of Drawings, September 2011
- Functional Servicing and Stormwater Management Report - C.F. Crozier & Associates Inc, July 2018
- Castle Glen Development – Notice of Study Addendum Commencement, March 2022
- Windfall Functional Servicing Report - Tatham Engineering, June 2020
- Highway 26 Flow Monitoring – Tatham Engineering, January 2020.
- The Blue Mountains Engineering Standards – April 2009 (AODA Update July 2018)

For additional details, refer to **Appendix A**.

1.2 Class Environmental Assessment Process

The Class EA document applies to a group of projects which are approved under the Environmental Assessment Act. As illustrated in Figure 1-1, the specific requirements for each project depend on the complexity of the project. A description of each project is reported in Table 1-1.

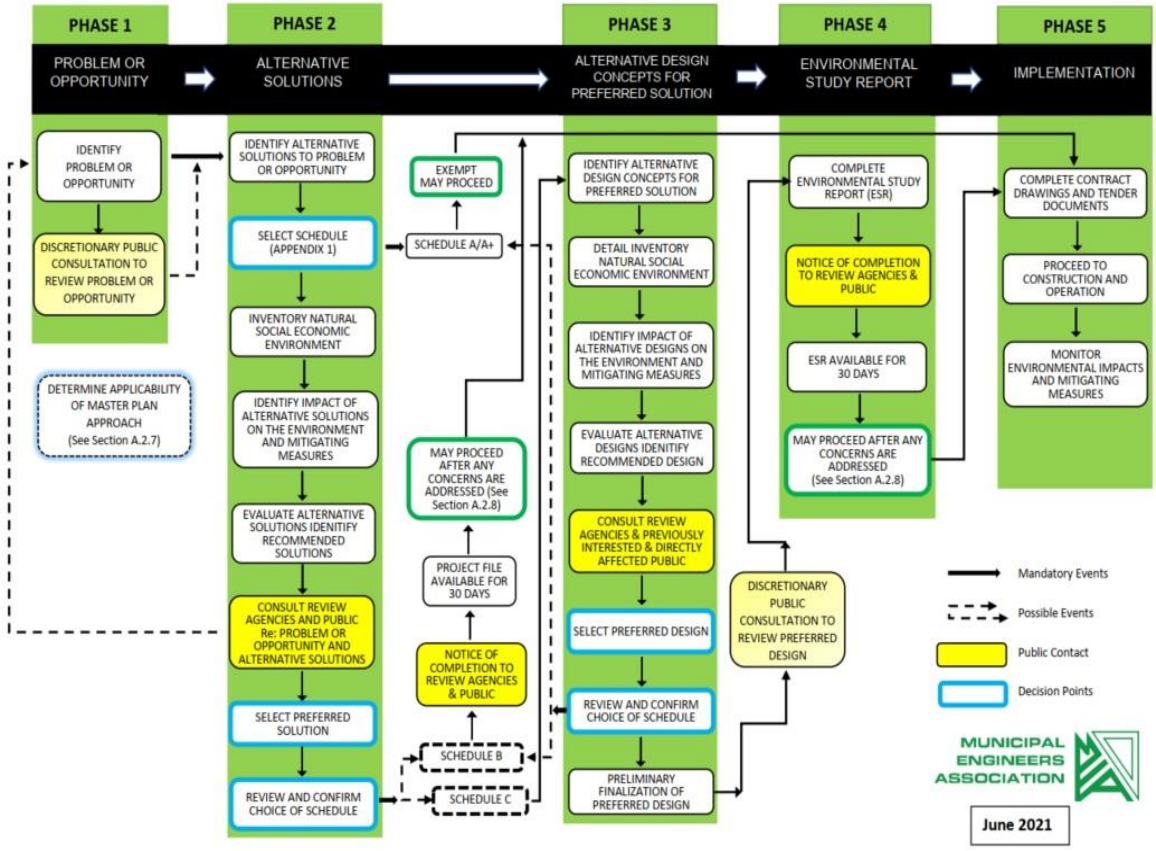


Figure 1-1 - Municipal Class EA process flowchart

1.3 Confirmation of Project Schedule

Four types of projects are identified in the Class EA document and summarized in Table 1-1:

Table 1-1 - Municipal Class EA schedules and project requirements

Class EA schedule	Projects
Schedule A	Projects that include normal or emergency operational and maintenance activities. These projects are pre-approved under the Class EA planning process. Projects within this category are subject to Phases 1 and 5.
Schedule A +	Projects similar to Schedule A projects, but the public must be advised prior to implementing A+ projects.
Schedule B	Projects that have the potential for some adverse environmental impacts and, therefore, the proponent is required to proceed through a screening process, including consultation with affected parties. Generally, these projects include improvements and minor expansions to existing facilities. Projects within this category are subject to Phases 1, 2, and 5.
Schedule C	Projects that have the potential for greater environmental impacts and are subject to all five Class EA Phases. Generally, these projects include the construction of new facilities and major expansions to existing facilities.

1.4 Project Objectives

The project objectives for this Class EA include the following:

- Determine design demands for the current and full build out of the sewer shed.
- Determine and evaluate the alternatives for conveying wastewater from the County Road 21 Sanitary Sewer to the Craigleith WWTP.

- Assess if there is an opportunity to redesign or relocate the existing septage/leachate receiving station to reduce off-site impacts.
- Generate evaluation criteria to assess the proposed alternatives in terms of technical feasibility, operational constraints, environmental impacts, social impacts, cultural/archaeological impacts, and construction and economical considerations.
- Propose a preferred alternative for public consultation and review that is appropriate for advancement to implementation upon completion of the requirements of the Class EA process.

2 EXISTING CONDITIONS

2.1 Existing Sanitary Sewer

The existing County Road 21 Trunk Sewer was designed to collect and convey wastewater from existing and proposed development lands located within the Town adjacent to and upstream of Grey Road 21 (Osler Bluff Road). Construction of approximately 2.5 km of the trunk sewer was completed in 2012.

The sanitary sewer starts as a 450mm near County Road 19 and increases to a 525mm sewer at the corner of County Road 21 and Highway 26. The sanitary sewer then decreases to 300mm and extends west to the existing Craigleith Sewage Pumping Station prior to being pumped to the Craigleith WWTP via dual force mains.

Refer to Figures 2-1 and 2-2 for mapping of the sanitary sewer system.

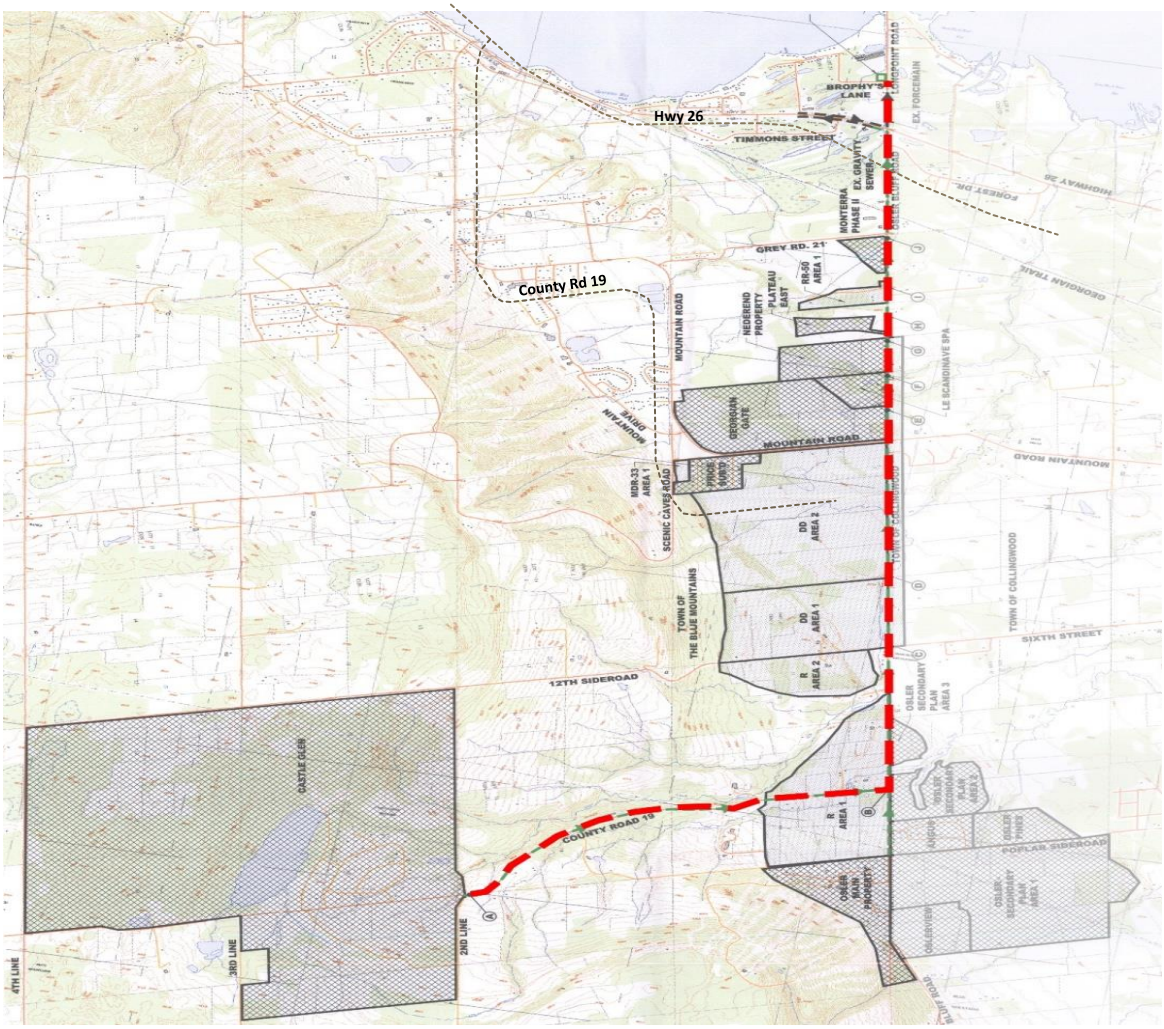


Figure 2-1 - Map of the Trunk Sewer from Castle Glen to the Highway 26

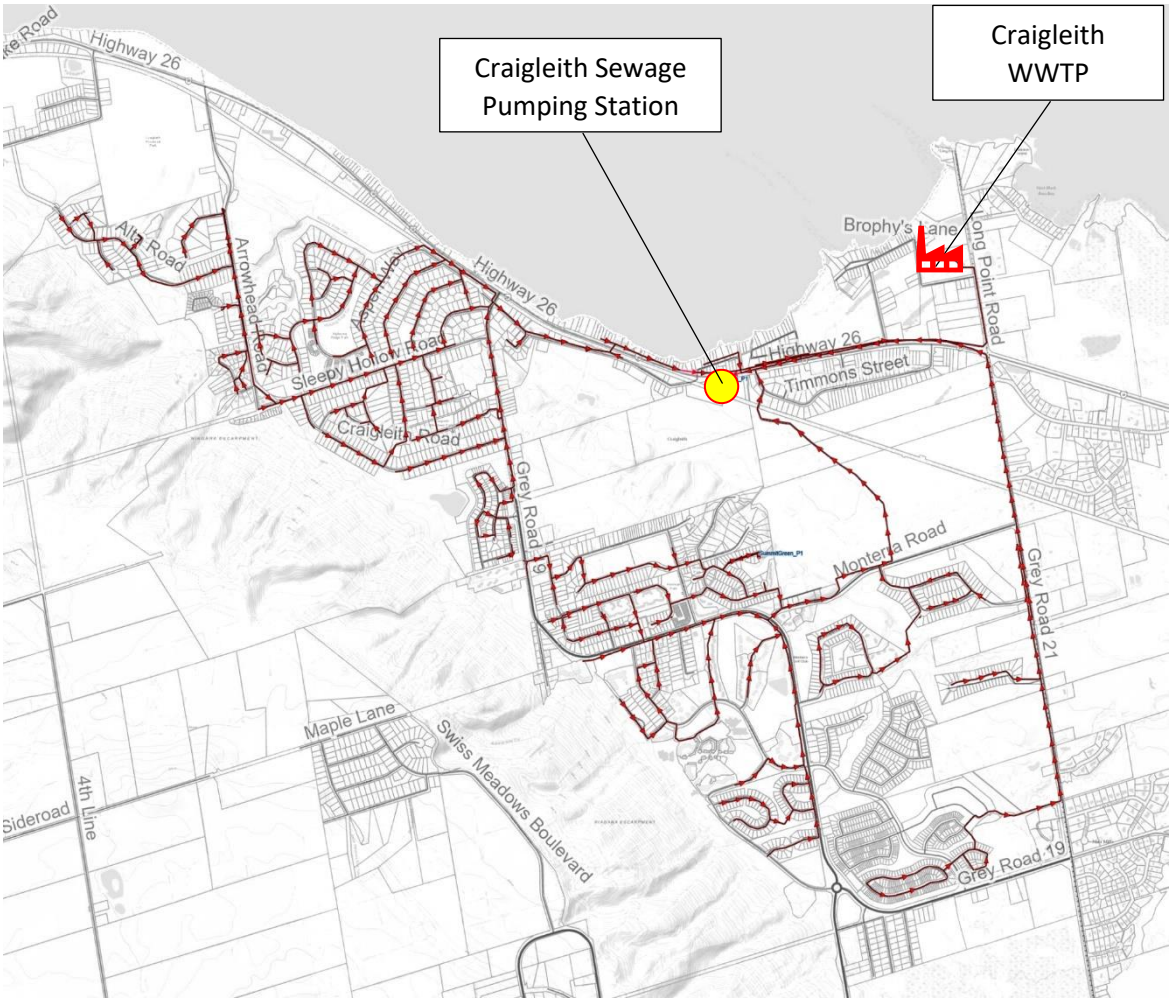


Figure 2-2 - Map of the Sanitary Sewer extending west to the Trunk Sewer

2.1.1 Current Trunk Sewer Capacity

To calculate the current sanitary sewer capacity, the following assumptions have been used:

- Average Residential Flow = 290 Lpcd
- Average Persons per Dwelling = 2.3 person/unit
- Peaking Factor: Harmon formula
- Peak Extraneous Flow = 0.23 L/s/ha
- Sanitary Loading Condition: Peak Domestic Flow plus I&I

The number of units within the drainage area was determined through a review of aerial photography, while the population was estimated by multiplying the units counted and the person per unit value of 2.3.

Currently, there are approximately 417 units serviced by the trunk sewer, which did not report any capacity constraints, having a peak flow along Grey Road 21 equal to 19 L/s and maintaining a sewer capacity below 10%.

2.2 Existing Craigleith Sewage Treatment Plant

The Craigleith Sewage Treatment Plant is an extended aeration treatment plant with a rated capacity of 8,133 m^3/day or 11,141 units based on the five-year rolling average daily flow (ADF) of 0.730 m^3/unit/day. Table 2-1 summarizes the annual average day flows (ADF) and the peak day flows (PDF) recorded at the plant in from 2021 to 2016.

Table 2-1 - Historical sewage flow and loads at the Craigleith Sewage Treatment Plant

	2021	2020	2019	2018	2017	2016
	Flow (m^3/d)					
Average	3,376	3,579	3,440	3,284	3,377	3,202
Peak	14,461	10,558	8,931	10,491	8,956	12,428
	Sewage Loads (Kg/d)					
BOD	-	-	487	-	432	455
TSS	-	-	664	-	571	579
TP	-	-	7.99	-	10.3	9.5
TKN	-	-	62	-	61.5	48

The Craigleith Sewage Treatment Plant is equipped with:

- Screens and grit removal
- Three (3) aeration tanks
- Alum addition
- Three (2) secondary clarifiers
- Four (4) gravity sand filters
- UV Disinfection system
- Two-stage aerobic digester

The extended aeration is a modification of the conventional activated sludge treatment process. This form of treatment was selected to allow for the fluctuating loads associated with the recreational/seasonal residential area serviced by the plant and to limit the quantity of sludge generated by the plant.

The selected treatment process produces a very low volume of sludge compared to a conventional activated sludge plant. Due to the sensitivity of the receiving body of water (the Mary Ward shoals area of Georgian Bay), the treatment process is required to produce a high-quality effluent with an extremely low level of phosphorus. In order to reduce phosphorus to the required level, it is necessary to apply a chemical coagulant (aluminum sulphate) and to provide tertiary treatment of the plant effluent prior to discharge. The tertiary treatment in this plant is achieved through the use of gravity sand filters. Effluent from the Craigleith WWTP is pumped through a 3,000 m long outfall into Nottawasaga Bay (Georgian Bay).

The sludge and scum that have been collected in the clarifiers are pumped to the digestion process. Craigleith WWTP is equipped with a two-stage aerobic digester, with an approximate volume of 462 m^3 in the first stage and 231 m^3 in the second stage. The aerobic digester is equipped with a coarse bubble diffused aeration system and supernatant decanting facility. A biosolids storage facility stores stabilized biosolids prior to application to agricultural fields.

Based on the existing capacity assessment completed by the Town, the available capacity in the plant is 3,755 equivalent units or an average day flow of 2,515 m^3/day (29 L/s). The 2021 Year End Capacity Report reported a total allocated units plus reserved units equal to 8,383. Therefore, assuming a 2% annual growth, the WWTP has capacity to meet current and future needs up to 2040.

2.3 Existing Septage and Leachate Pumping Station

The Craigleith Septage and Leachate Pumping Station (SLS) is located on Lakeshore Road East, Town of Blue Mountain, and was originally constructed and commissioned in 1985. The SLS is currently operated under Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) 111-W601. The CLI-ECA indicates that the station has a design peak flow capacity of 180 L/s. The SLS is the main Pumping station for all the sanitary collection system servicing the Craigleith area and is the sole SLS discharging sewage to the Craigleith Sewage Treatment Plant.

The existing Septage and Leachate Pumping Station is an exterior station added to the Pumping Station in 2009 and it is located at the western exterior wall of the facility. In particular,

- **The septage receiving station** is characterized by an analog screen data logger and control panel, a 100 mm diameter pipe with an electric actuated valve, magnetic flow meter and wall-mounted transmitter.
- **The leachate receiving station** is characterized by a 150 mm diameter pipe, without controls or flow measurements.

A review of background information suggested that the volume of septage is approximately a third of the volume of leachate. Specifically, the receiving station collects between 283 m^3/month to 1,553 m^3/month of septage, and 635 m^3/month to 5,506 m^3/month of leachate. Both the septage and leachate are discharged through hatches into the wet well where a channel monster grinder is installed. This equates to an average of 3 to 7 trucks per day depending on the size of the truck used.

Additional details of the existing infrastructure can be found in **Appendix B** and **Appendix C**.

2.4 Planning Context

In 2016, the Town's Official Plan was approved with the intent to provide the strategy and policy framework to guide development and growth over a 10-year time horizon. The Official Plan recognizes and provides policy guidance for the primary settlement area of Thornbury/Clarksburg, an extensive residential/recreational settlement area which extends along the entire Georgian Bay shoreline, the Blue Mountain Village area, an expansive agricultural/rural countryside with a number of hamlets, and a variety of natural features and areas throughout the Town that are primarily focused on the Georgian Bay Shoreline and the Niagara Escarpment.

The Official Plan has been prepared within the context of the urban and rural patterns of the Town, the County and surrounding regions. The Community Structure Plan (CSP) conceptually illustrates the major structural elements of the Town including settlement areas, resort areas, key corridors, and connections while the Zoning By-law 2018-65 guides the implementation of policies in the Town's Official Plan

The Community Structure Plan (CSP) is presented in Figure 2-3. The CSP does not identify any land use designations; it is intended to articulate the structure of the community and how the community is intended to evolve over time in accordance with that structure.

According to the CSP, the study area is located within the Craigleith Village Settlement area. The purpose of the Craigleith Village Community designation is to recognize an existing community within the Town of The Blue Mountains that is to be redeveloped into a sustainable compact village with mixed uses and intensification, while protecting the character of the surrounding area.

Specifically, the Craigleith Village include the following area-specific designations:

- **Craigleith Village Commercial:** The intent of the Craigleith Village Commercial designation is to provide for an integration of residential, commercial, and institutional uses in a location that is both within walking distance of the shorefront and other recreational amenities and readily accessible to the travelling public and the surrounding residential population. The predominant use shall be all commercial forms including retail, food service and licensed establishments, retail stores, business or professional offices, a branch of a bank or financial institution, personal service shops, civic and institutional uses, health clinics, commercial schools and studios and other similar uses that serve the community of Craigleith, as well as the travelling public along the Highway 26 corridor.
- **Craigleith Village Residential:** The purpose of the Craigleith Village Residential designation is to identify those lands in Craigleith where a compact residential

community will be established on the shores of Nottawasaga Bay as part of an overall village development together with associated recreational lands and facilities on full municipal water and sanitary sewage facilities. Residential development may include a range of housing types from single detached, semi-detached, link and attached.

- **Recreational Area:** Recreational development may include a variety of recreational lands and facilities intended to enhance the recreational opportunities of the residents of the community.
- **Hazard Lands, Shoreline Floodplain and Provincially Significant Wetlands:** The predominant use of lands designated as Craigleith Village Public Open Space, Hazard, Wetlands and Wetlands Buffer shall be for protection of the Provincially Significant Wetlands and buffers, floodplains and shoreline hazards, as well as recreational uses. Subject to the related provisions of this Plan, permitted uses may include public and private parks, recreational and cultural facilities, trails and other similar types of facilities.
- **Future Secondary Plan Areas** – The purpose of those areas is to identify lands intended to be developed in the future, when additional lands are required for development. The areas southeast of the Blue Mountain Village Area is identified as requiring more detailed planning prior to future development occurring. Part F1 of the Official Plan includes Secondary Plans prepared for the Castle Glen Resort Community which is intended to be developed as a pedestrian friendly resort area linking residential, commercial and recreational areas with a large open space component while protecting the unique natural, visual and cultural heritage character of the Niagara Escarpment environment. It is intended to accommodate a range of recreational, uses, facilities and activities complimentary and compatible with the Niagara Escarpment, including golf course holes, including tees, greens and fairways and other recreational uses.

As the existing trunk sewer also conveys wastewater produced by areas within the Town of Collingwood, the future growth of Collingwood should also be considered. Currently, the areas of Collingwood along the trunk sewer are mainly identified by the Official Plan of Collingwood and Zoning By-Law 2010-040 as Residential and Rural Areas. No development activities are currently identified along Grey Road 21 from the Town of Collingwood.

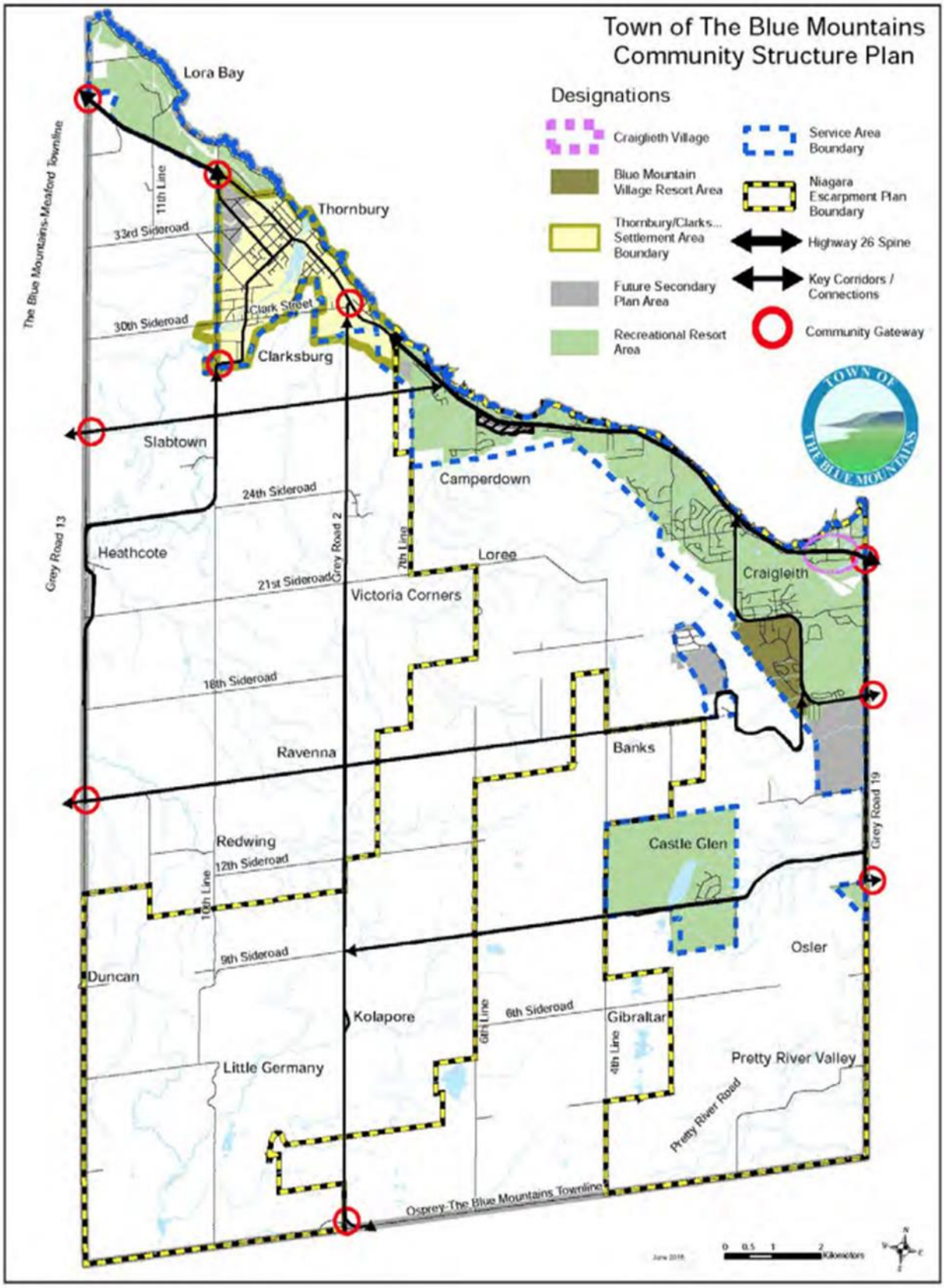


Figure 2-3 Town of Blue Mountains Community Plan

2.5 Previous Relevant Studies

In 2006, The Town of Blue Mountains completed a Combined Environmental Assessment Master Plan Phase 2 for the Craigleith, Castle Glen, and Osler Service Areas (Combined EA Phase 2 Final Report). The Combined EA has been included in **Appendix A**.

The study covered the first two Phases of the Municipal Class EA planning process described in Section 1 of this report, with the intent to evaluate and identify the water and wastewater servicing requirements to meet the growth expectations in the Craigleith, Castle Glen and Osler Service Areas as well as areas within Clearview Township and parts of the Town of Collingwood, which border The Blue Mountains. For the project area, the Combined EA concluded that:

- The existing Craigleith WWTP did not have enough capacity to service the future growth identified within the Craigleith service are, including Osler, Castle Glen, and areas in Collingwood. Therefore, an expansion would be required.
- To facilitate the development of Castle Glen and Osler areas, a new 525mm diameter trunk sewer would need to be constructed. The sewer would have to drain to a pumping station located near to the plant which would pump sewage into the WWTP also allowing gravity servicing to the Brophy's Lane area. The sewer would run from the plant to Long Point Road and south on Long Point Road to Highway 26 and Osler Bluff Road, then continuing to at least Mountain Road or 1200 meters further to service residential lots located along the road, primarily within the Town of Collingwood.
- The Craigleith Sanitary Pumping Station with a rated capacity of 122 L/s would not be able to meet future needs and therefore, an upgrade of the pumping station or the construction of a new pumping station would ultimately be required. However, to lower the initial capital costs of providing sewer servicing to the Castle Glen and Osler areas, the construction of a new sewer on Osler Bluff Road could connect to the existing sewers which drain to the existing pumping station at Timmons Street. The construction of a new pumping station at the sewage treatment plant could then be deferred until the sewage treatment plant is expanded. The temporary solution would also allow the provision of temporary service to Castle Glen, Osler and other developments that front the sewer, until the capacity of the Craigleith Sanitary Pumping Station does not reach full capacity.

With respect to the expansion of the Craigleith WWTP, several alternatives for treating sewage flows from these areas were identified. The report concluded that the expansion of the existing Craigleith WWTP was the preferred alternative as it would have the least overall impact on the social, natural, and technical environments with the least overall cost.

In the Class EA process, the expansion of an existing wastewater treatment plant is identified as a Schedule C project. Therefore, in 2009, the Town completed an Environmental Assessment for the Craigleith Sewage Treatment Plant Expansion which reviewed the conclusions of Phases 1 and 2 of the 2006 Combined EA, and specifically focused on Phases 3 and 4 of the Class EA process, identifying the preferred design alterative for the expansion of the WWTP and development of the Environmental Study Report.

In this report, a review and comprehensive analysis of sewage treatment plant process options was completed and to meet future growth needs, the following unit processes were recommended for the Craigleith WWTP expansion:

- Equip the third aerated grit tank.
- Install a new aeration tank equipped with fine bubble full floor diffused air system.
- Install an additional secondary clarifier.
- Provide phosphorus removal by alum addition.
- Install one additional UV treatment train.

- Install new tertiary filtration consisting of sand beds, internal flow directional components, filtrate weirs, filtrate flumes, and internal sand washing systems.
- Install one additional two stage aerobic digester.

Additional details regarding the Class Environmental Assessment for the Craigleith Sewage Treatment Plant Expansion and the Environmental Study Report are included in **Appendix A.**

3 DESIGN CRITERIA

The Design Criteria establish the minimum design requirements for Alteration to an existing Municipal Sewage Collection System by adding, modifying, replacing, or extending Sanitary Sewers and/or forcemains, as well as upgrading existing facilities. The findings of the design basis review are summarized in the following sub-sections.

3.1 Wastewater Demand

An essential element in the design of sanitary sewer infrastructure is the consideration of initial flow and subsequent build-up of flow with time according to population growth, the design horizon and per capita water consumption.

Based on a review of available data, design standards and discussion with Town staff, average and maximum daily flow rate parameters used to estimate future water demands are presented in Table 3-1. According to the Town of Blue Mountain Engineering Standards (2009), those parameters were obtained using the following design standards:

- Average Residential Flow = 450 Lpcd (~0.45 m^3/person/day)
- Average Persons per Dwelling = 2.3 person/unit
- Peaking Factor: Harmon formula
- Allowance for Infiltration and Inflow: 0.23 L/s/ha

Table 3-1 Wastewater Production parameters

Parameter	Value	Comments
Average Daily Flow	1.035 m^3/unit/day	Average residential flow * 2.3 person/unit. (0.45 m^3/person/day*2.3 person/unit)
Maximum Daily Flow	(Average Daily Flow * Peaking Factor) + Infiltration allowance	Peaking Factor = $1 + \left(\frac{14}{4+P^{0.5}}\right)$ Where P = Design Population/1000

As indicated in Section 2, the trunk sewer currently serves a total of 417 units (~959 residents). Short-term identified development increases the total number of units to 1,288, including existing houses. The short-term identified development areas are as follow:

- Windfall Development: 659 new units (~1515 residents)
- Blue Vista Development: 180 new units (~414 residents)
- Monterra Phase 2: 32 new units (~74 residents)

Based on discussion with the Town's Planning department and the 2021 Water and Wastewater Servicing Maps for current and future development, the potential growth within the project area is equal to 3,993 units identified as follow:

- Castle Glen: 1,843 units (~4,283 residents)
- Osler Bluffs Area: 150 units (~9,183 residents)
- Development lands south of Grey Road 19: up to 2,000 units (~4,600 residents)

Table 3-2 summarize wastewater production based on current, short-, medium-, and long-term development. Subject to Approvals and Economic Conditions, the timeline fort short-, medium, and long-term development was assumed to be as follow:

- Short-term Development: ≤ 5-years
- Medium-Term Development: between 5-15 years
- Long-Term Development: ≥ 15 years

Table 3-2 Wastewater production based on current, short-, medium-, and long-term development.

Development Timeline	Number of units	Wastewater Peak Flow	Wastewater Calculation
Existing units	417	19 L/s (~1,650 m^3/d)	(Average Daily Flow * Peak Factor) + Infiltration & Inflow
Short-Term development	1,288	53 L/s (~4,580 m^3/d)	Existing units + Short-Term development
Medium-Term development	3,281	145 L/s (~12,528 m^3/d)	Existing units + Short-Term + Medium-Term development
Long-Term development	5,481	235 L/s (~20,300 m^3/d)	Existing units + Short-Term + Medium-Term + Long-Term development

3.2 Septage and Leachate Demand

Compared to raw domestic sewage from a conventional municipal sewage collection system, septage usually has high concentrations of organics, grease, nutrients, stringy material, scum, grit, solids, and other extraneous debris.

Since the Craigleith SPS conveys all sanitary sewage to the Craigleith WWTP, to estimate current septage and leachate production for the study area, the unit rate parameters were obtained based on current production of wastewater, septage and leachate at the plant as reported in Section 2 and summarized as follow:

- Current Wastewater Peak Flow at the Craigleith WWTP: 14,461 m^3/d.
- Current Septage Production (Peak) at Craigleith SPS: 1,553 m^3/month (~52 m^3/d)
- Current Leachate Production (Peak) at Craigleith SPS: 5,506 m^3/month (~184 m^3/d)

Table 3-3 presents the rate parameters used to estimate future septage and leachate production.

Table 3-3 Septage and Leachate Production parameters

Parameter	Value	Comments
Leachate Production rate	0.36% of produced wastewater	Calculated based on current leachate/wastewater production rate. (184 m^3/d ÷ 14,461 m^3/d) * 100
Septage Production rate	1.28% of produced wastewater	Calculated based on current septage/leachate production rate. (52 m^3/d ÷ 14,461 m^3/d) * 100

Based on the estimated rate parameter for septage and leachate, Table 3-4 summarizes future septage and leachate production based on short-, medium-, and long-term development within the project area.

Table 3-4 Future Septage and Leachate Production parameters

Development Timeline	Wastewater Peak Flow	Septage Production	Leachate Production	Comments
Current Production	19 L/s (~1,650 m^3/d)	6 m^3/d	21 m^3/d	Septage = 0.36% of produced wastewater Leachate = 1.28% of produced wastewater
Short-Term development	53 L/s (~4,580 m^3/d)	17 m^3/d	59 m^3/d	Current production + Short-Term development
Medium-Term development	145 L/s (~12,528 m^3/d)	46 m^3/d	161 m^3/d	Current production + Medium-Term development
Long-Term development	235 L/s (~20,300 m^3/d)	74 m^3/d	260 m^3/d	Current production + Long-Term development

3.3 System Design Criteria and Constraints

For this project, the overall objective is to improve the efficiency of the conveyance of wastewater to the Craigleith WWTP from the community. A secondary objective is to improve operations to minimize the risk of system failure, back-up, and off-site impacts in terms of traffic, odour, and noise. The following are the criteria and constraints for the proposed problem evaluation.

It is important to recognize that the proposed infrastructure that may be implemented as a result of this project has a useful life of a minimum of 50 years and up to 100 years or more depending on the component.

3.3.1 Criteria

The preferred alternative must be able to meet the following criteria related to the conveyance of the wastewater within the system:

- Convey short-term (53 L/s) and proposed (235 L/s) upstream sanitary capacity to the Craigleith WWTP in an efficient manner.
- Minimize off-site impacts (natural, social, cultural). This includes new land acquisition, proximity of downstream receptors (noise, odour, sewer back-ups), and impacts on existing undeveloped areas.
- Minimize risk associated with system operation (traffic, noise, odour, back-up, single points of failure).
- Design complies with MECP design guidelines and Ten State Standards.
- System design considers operational and economic efficiencies in terms of components and location.
- System design allow for staging to avoid oversizing the system for current flows while minimizing the capital requirements in order to meet ultimate sewer shed build-out.

3.3.2 Constraints

The problem and, to some extent, the solution were identified in the 2006 Combined Environmental Assessment Master Plan. As such, the proposed alternatives are limited to those that do not result in a wholesale change in the system.

The constraints associated with the identified problem are as follows:

- The Craigleith WWTP location and inlet components are fixed and modifications to those components are limited within the scope of this assessment.
- The Craigleith WWTP rated capacity is limited. The future build-out capacity of the inlet pumping station(s) may exceed the rated treatment capacity of the WWTP.

Therefore, the area serviced must consider future growth, but rated capacity of inlet pumping station(s) cannot exceed the rated capacity of the treatment plant.

3.4 Summary of Existing and Future Needs

The summary of the existing and future needs as it relates to project design criteria and constraints are detailed in Table 3-5.

Table 3-5: Design Capacity Summary

	Current Demand (Peak Flow)	Short-term Demand (Approved Development)	Ultimate Build-out	WWTP Rated Capacity
Craigleith SPS Sewer shed (excluding Grey Road 21 Sanitary Trunk Sewer)	12,811 m^3/d (150 L/s)	14,141 m^3/d (*) (164 L/s)	14,740 m^3/d (*) (171 L/s)	PDF - 19,650 m^3/d ADF - 8,133 m^3/d
Grey Road 21 Sanitary Trunk Sewer	1,650 m^3/d (19 L/s)	4,580 m^3/d (53 L/s)	20,300 m^3/d (235 L/s)	
Total	14,461 m^3/d (167 L/s)	18,721 m^3/d (217 L/s)	35,040 m^3/d (406 L/s)	

(*) 2021 Year End Capacity Total Allocated + Reserved Average Flow multiplied by Peaking Factor according to Harmon Formula considering 2.3 person per unit.

For the purposes of evaluation and cost estimating, the medium-term demand that addresses currently approved or in progress developments will be used with the caveat that design allowances for ultimate build-out of the major or long-lived infrastructure components (wet-wells, pipes, etc.).

The impact of expanding the system to ultimate build-out shall be considered if it results in a major change from the proposed short-term demand (i.e., requires new land acquisition or wet-well).

4 PROBLEM IDENTIFICATION

4.1 Problem and Opportunity Statement

In 2006, the Combined Environmental Assessment Master Plan Phase 2 for the Craigleith, Castle Glen, and Osler Service Areas identified that the preferred approach to address flow from the east was the construction of a new 525mm diameter trunk sewer which would run from Mountain Road along Osler Bluff Road, thus extending north on Long Point Road, draining sewage to a pumping station near to the plant which would pump sewage into the Craigleith WWTP. However, to lower the initial capital costs of providing sewer servicing to Castle Glen and Osler areas, as well as the construction of a new sanitary pumping station, the construction of a 300 mm diameter jumper sewer connecting the trunk sewer on Osler Bluff Road to the existing sewers west on Hwy 26 was suggested, thus draining sewage to the existing pumping station at Timmons Street.

As the existing pumping station and sanitary sewer between Craigleith Pumping Station and County Road 21 were not intended to convey County Rd 21 sanitary flow permanently, with the potential growth within the project area, the existing pumping station and sanitary do not have sufficient capacity to service the projected amount of wastewater for the service area, which includes Craigleith and the development areas of Osler Bluff and Castle Glen, as well as lands that front the servicing in the Town of Collingwood and the Township of Clearview.

Moreover, as the existing pumping station is an exterior facility located proximate to both current and future residential properties and near to Highway 26 in a location where septage hauling vehicles need to complete relatively complex movements to navigate the site. The need for vehicles to back-up results in noise that may become more intrusive as residences impinge on the site. Similarly, proximity will increase the frequency of odour complaints.

Background information suggested that approximately 700 round trips are made annually by the haulage trucks from the Landfill to the Craigleith Pumping Station which results in a significant amount of traffic in the area. The truck traffic also impacts the Georgian Trail crossing in the vicinity of the facility. Furthermore, as the residential area to the south of the Craigleith pumping station is expected to increase, the truck traffic for the disposal of leachate would be a source of logistic difficulties in the area. Since the facility is designed to receive septage and leachate, given the current proximity of houses, this activity resulted in an increase in odour complaints.

In terms of operations, the existing pumping station is facing several operational challenges identified as follow:

- **Treatment operation and maintenance:** The strength of raw septage in comparison to raw domestic sewage is one of the biggest challenges faced during treatment as septage contains significant levels of grease, scum, grit, rocks, rags, plastics, and other debris. The high solids content causes significant ragging and subsequent downtime of pump and treatment equipment while the high concentrations of nutrients may cause corrosion in the pipes and processing equipment. Cleaning and maintaining process equipment is fundamental. However, the existing receiving station does not have means to remove rocks, large debris and rags which cause problems with operation of the grinder and clog the sewage pump impellers. Periodically, the grinder unit is removed from the wet well and shipped to the manufacturer for replacement of its grinding parts. Removing and reinstalling the grinder is time consuming and costly. Pump impellers have been replaced frequently. Both pumps need to be taken out of service on a regular basis for maintenance.
- **Inability to balance flow into the system:** The bulk delivery of leachate in large truck load quantities at the facility does not allow for good mixing and dilution of the waste. Furthermore, in past years, both of the Town's wastewater treatments plants have been negatively impacted to the delivery of leachate in truck load quantities to the point of threatening the Town's ability to maintain compliance with the Plant's Environmental Compliance Approvals. As leachate from "young" wastes is characterized by high chemical oxygen demand (COD) and biological oxygen demand (BOD) values (and by high ratios of BOD to COD), low pH and initially high in metals, the delivery of leachate in truck load quantities creates a situation where the Plant's biology is impacted due to the shock loading of high strength wastewater.

Therefore, the Town's sanitary sewer collection and pumping infrastructure within the Craigleith area requires upgrades and enhancements to meet the projected demands of growth. The Town of The Blue Mountains has initiated a Municipal Class Environmental Assessment (Class EA) to evaluate and select the preferred solution to convey wastewater to the Craigleith WWTP from all of the Craigleith sanitary collection system with a specific focus on the Grey Road 21 sanitary trunk sewer.

It is anticipated that the alternatives may consist of the following components:

- A gravity sewer constructed within an existing municipal right-of-way would be considered a Schedule A or A+ project.
- A new sanitary pumping station located in a new building and/or includes land acquistion would be considered a Schedule B project.
- Relocation of the septage and leachate receiving station to a new site where new construction is required would be considered a Schedule B project.

Within the individual alternatives there may be some variation in Class EA Schedule; however, for the purposes of providing a comprehensive review and opportunity for public/agency input. This project will proceed as a Schedule B project as it relates to public consultation and process.

5 IDENTIFICATION AND EVALUATION OF ALTERNATIVES

The following section addresses the identification and evaluation of alternatives to address the problem statement. As indicated in the constraints section, alternatives that would require conveyance of the wastewater to another treatment facility or a new treatment facility have been screened out. The identified alternatives are generally focused on the specific project area. There may be numerous iterations that can be developed from different combinations of components (size, location, routing, etc.); however, for the purposes of this study, the identification of alternatives will be focused on dissimilar solutions and the preferred alternative will be optimized for implementation to mitigate identified impacts or risks.

5.1 Identification of Alternatives

With the identified problem being the flow restriction associated with the 300mm diameter temporary sanitary sewer installed from the intersection of Grey Road 21 and Highway 26, each of the solutions must be able to convey wastewater from the Craigleith collection system to the Craigleith WWTP.

We have identified the associated Class Environmental Assessment Schedule for each alternative as different alternatives may have different classifications within the EA process.

The general alternatives that have been reviewed are detailed in the following sections and are as follows:

- Alternative A – Do Nothing
- Alternative B – Expand Craigleith Sanitary Pumping Station and Collection System
- Alternative C – Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP
- Alternative D – Trunk Sewer to New Sanitary Pumping Station on Long Point Road

5.2 Alternative A – Do Nothing

Embarking on a Class EA project does not necessarily mean that the preferred solution is to do something. As such, the “Do Nothing” or null alternative is always an alternative that is reviewed to ensure that the project is in fact necessary. The “Do Nothing” scenario means that the Town continues to utilize the Craigleith SPS as the major point of transfer of sewage from the collection system to the Craigleith WWTP.

The limitation on this alternative is that growth capacity would be restricted based on the capacity of the inlet sewers to the system and the current firm pumping capacity of the Craigleith SPS. This would restrict the flow from the Grey Road 21 trunk sewer to the capacity of the 300mm diameter sanitary sewer from Grey Road 21 to the Craigleith SPS inlet sewer, which is 45 L/s. This will result in a capping of future developments including some that may be in progress.

There are identified upgrades required to this system from the 2022 Optimization Study that will need to be completed, but they are required for all scenarios including those that do not contribute any additional flow to the SPS. No capacity specific capital upgrades are proposed for this alternative.

5.3 Alternative B – Expand Craigleith Sewage Pumping Station and Collection System

This alternative was selected because it maintains the current operational approach and is essentially the upgrading of facilities to meet the increased capacity requirement. This alternative consists of expanding the capacity of the existing Craigleith SPS to meet the current and future demands for wastewater servicing in the community including increasing the capacity of the gravity sewer from Highway 26 and County Road 21 to the pumping station.

In addition, it was identified that the capacity of the twin forcemains from the Craigleith SPS is 218 L/s using both forcemains. This is less than the required 240 L/s and therefore, a third forcemain will be required for this alternative for both redundancy and capacity. The following is a description of the proposed alternative.

Trunk Sanitary Sewer

- Increase the 1,300m long sanitary sewer from the intersection of County Rd 21/Highway 26 to the Craigleith SPS from 300mm to 525mm to convey future peak flow equal to 240 L/s.

Sewage Pumping Station Upgrades

- Increase SPS Capacity from 180 L/s to 240 L/s to convey ultimate capacity of the upstream area. This would be completed incrementally over time with pump replacements as the demand requires it; however, the wet-well will need to be upgraded/twinned to provide adequate volume.
- Upgrade the facility with respect to odour control, back-up power and operational reliability.
- Install a new outdoor generator set to provide sufficient emergency back-up power to power the entire Pumping Station in the event of a utility power outage.
- The general footprint of the existing site would be expanded to address both storage and system components to meet current regulatory requirements.
- Sewage Pumping Station Upgrades

Sanitary Forcemain

- 2,200 m – 300 mm sanitary forcemain from the SPS to the Craigleith WWTP via Highway 26 and Long Point Road to a connection at the WWTP headworks.

5.4 Alternative C – New Sewage Pumping Station on Craigleith WWTP Site

This alternative was selected because it is a significantly shorter distance from the intersection of Grey Road 21 and Highway 26 to the Craigleith WWTP compared with extending sewers to the Craigleith SPS and then pumping it back to the WWTP. It also uses the existing site and consolidates wastewater components at the logical location of the WWTP.

This alternative consists of extending the gravity sanitary trunk sewer along Long Point Road north of Highway 26 to a new sewage pumping station located on the existing Craigleith WWTP Site. All of the works would be completed within the existing municipal right-of-way and the WWTP boundaries. Figure 5-1 shows the layout of the proposed option. The following is a detailed description of the proposed alternative:

Trunk Sanitary Sewer

- New 525m long - 525mm diameter sanitary sewer from the intersection of County Rd 21 and Highway 26 to the Craigleith WWTP along Long Point Road.

New Sewage Pumping Station

- New Sanitary Pumping Station with capacity of 240 L/s located on the WWTP Site in a separate building including the following components:
- Wet-well submersible pump well configured to allow for future pumps.
- Above grade electrical and control room.
- Back-up Power to be coordinated with WWTP generator upgrade to provide full power to the entire site.
- The pumping station building would be coordinated with the new septage receiving station to share servicing and design components.
- General site work upgrades and drainage improvements.

- Landscape revisions including vegetated buffer and berm to address odour and noise concerns.

Sanitary Forcemain

- 150 mm – 450 mm sanitary forcemain from the SPS to a connection at the WWTP headworks.

A preliminary review of the site indicates that the preferred location to reduce the risk of conflicting with future plant operations and expansions is to construct the pumping station structure in the southeast corner of the property opposite the main entrance to the treatment plant building.

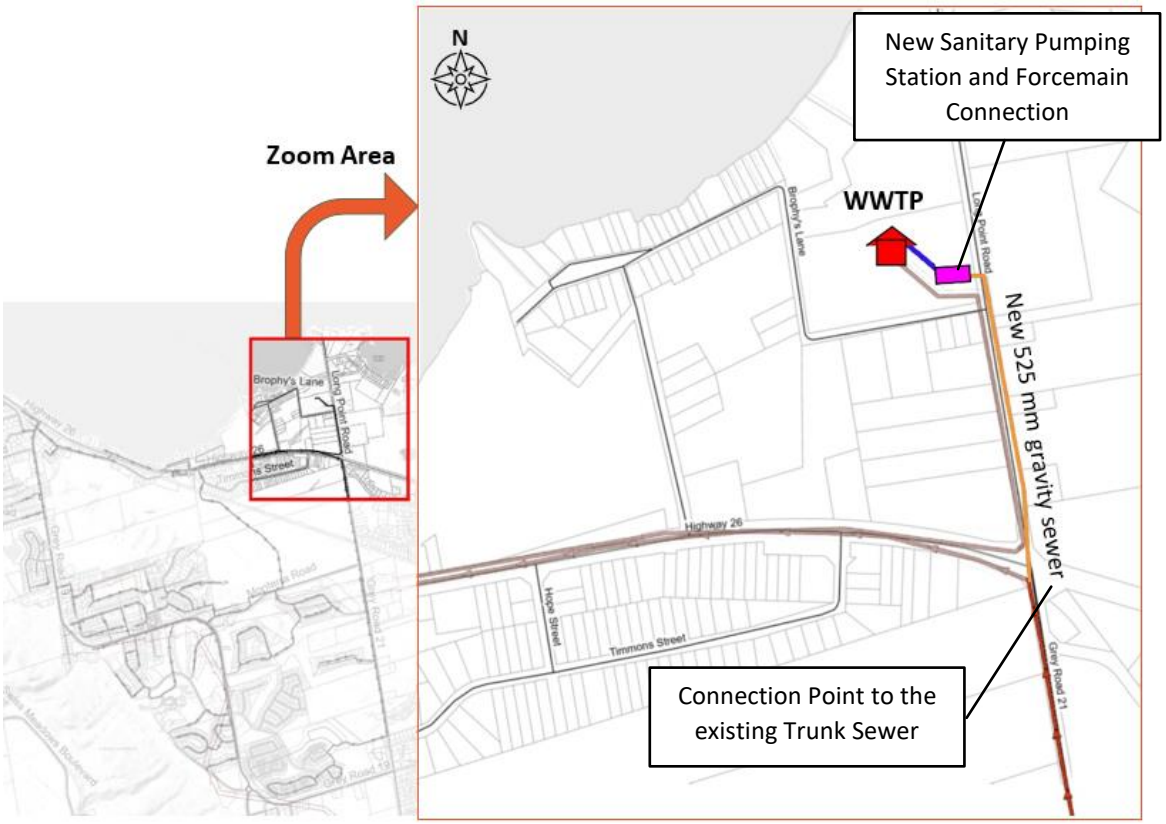


Figure 5-1: Alternative C – New Sewage Pumping Station on Craigleith WWTP Site

5.5 Alternative D – New Sewage Pumping Station between Highway 26 and Craigleith WWTP Site

This alternative was selected primarily to address the risk related to hydrogeological and geotechnical conditions at the existing WWTP. The existing treatment plant is built up above grade and there is a risk that a high groundwater table and permeable soils and/or bedrock would add unreasonable risk to the construction of a pumping station at the WWTP. Moving the pumping station location to the south, upgradient, may address those issues and allow for cost savings and risk reduction compared with the WWTP site (Alternative C) that may exceed the cost of land and servicing associated with this alternative.

This alternative would consist of extending the gravity sanitary trunk sewer along Long Point Road north of Highway 26 to a new sewage pumping station located on a new property between Highway 26 and the Craigleith WWTP site. A new property would be required for the new pumping station. The proposed trunk sewer and forcemain would be within the existing right-of-way.

Figure 5-2 shows the layout of the proposed option. The following is a detailed description of the proposed alternative.

Trunk Sanitary Sewer

- New 300m (200-400m) long - 525mm diameter sanitary sewer from the intersection of County Rd 21/Highway 26 to the New Sewage Pumping Station property along Long Point Road.

New Sewage Pumping Station

- New Sanitary Pumping Station with capacity of 240 L/s located on the new SPS site located between Highway 26 and the Craigleith WWTP.
- Site work including new generator, access, fencing and yard piping.
- Land acquisition will be required for this alternative.

New Sanitary Forcemain

- New 300m (200-400m) long - 300 mm diameter sanitary forcemain from the new Sanitary Pumping Station location to the treatment plant inlet structure.

The exact location of the pumping station property would be sited based on available land and geotechnical conditions. If soil conditions were more favourable, then the pumping station will be located closer to the WWTP and if they were less favourable, the pumping station would be located closer to Highway 26. The location would also depend on the availability of land for acquisition.

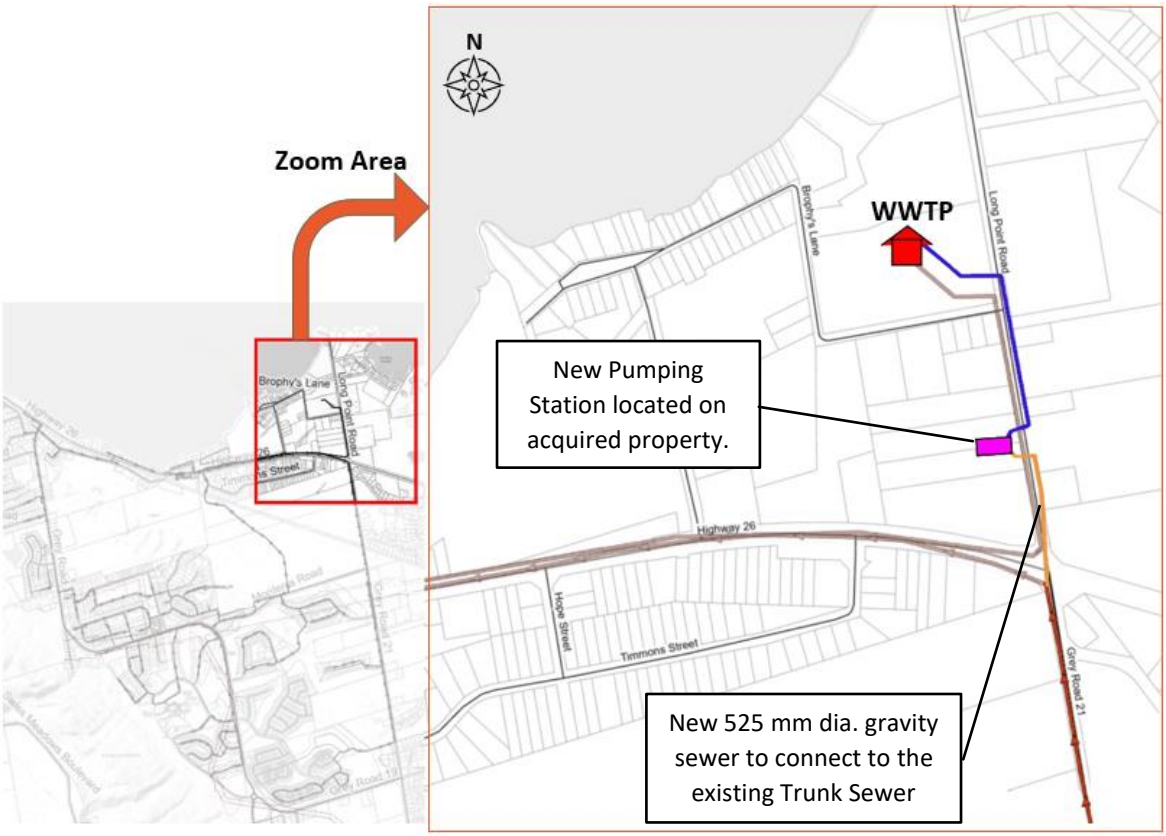


Figure 5-2 Alternative D – New Pumping Station between Hwy 26 and Craigleith WWTP Site

5.6 Identification of Alternatives – Septage and Leachate

Part of the scope of this project and Class EA is identifying the optimum location for the septage and leachate receiving station. As previously indicated, the existing facility is an exterior facility that is proximate to both existing residences and proposed development. Odour and traffic concerns have been raised about the operation in the current location at the Craigleith SPS.

As identified in Section 4.1, the receipt of septage and leachate into the system is a Schedule B project and as such, its solution will be documented and included in the Notice of Completion for this packaged environmental assessment.

The Town considered the following two alternative solutions to address septage and leachate receiving within the system:

1. Maintaining septage receiving at the existing Craigleith Sewage Pumping Station; or
2. Relocate septage receiving to the Craigleith WWTP.

There are other potential locations for this facility such as a new upstream connection to the sanitary sewer allowing septage/leachate to naturally mix with sanitary sewage from the community or at one of the smaller residential sanitary pumping stations. However, due to the malodourous nature of septage/leachate, these were screened out as they would result in the facility being brought closer to residences rather than centralizing the location to minimize off-site impacts.

5.7 Environmental Inventory

In order to evaluate the alternatives, inventories and general investigations were completed along the core alignments and areas to document the existing natural and social environments. The results of these studies are considered in the evaluation of alternatives.

5.7.1 Cultural Heritage Resources

Section 5.7.1 describes the cultural heritage component of the environment, which includes archaeological resources, built heritage resources and cultural heritage landscapes.

5.7.1.1 Archaeological Resources

A Stage 1 archaeological assessment (AA) (under Project Information Form number (PIF) P029-1094-2022) was undertaken on August 12, 2022, by Archeoworks Inc. for the study area. A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, 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. The Stage 1 AA report is included in **Appendix E**.

The following are the findings reported by the Stage 1 AA and presented in Figure 5-3 below:

- Background research established archaeological potential within the study area due to the proximity of documented pre-1900 Euro-Canadian settlement (historic transportation routes), a cultural heritage resource and water sources (Lake Huron, tributaries leading to Lake Huron, a pond and wetlands). Additionally, a portion of the study area that falls within the Township of Nottawasaga falls within areas identified as having archaeological potential in the County of Simcoe's AMP.
- To determine if the archaeological potential classification of the study area is relevant, a desktop review of ground conditions was undertaken using an air photograph and orthophotographs from the mid-20th century to the present. This review revealed areas of deep and extensive land alterations, physical features of low or no archaeological potential and areas that retain archaeological potential within the study area.

Considering the findings detailed in the succeeding sections, the following recommendations are presented:

- Parts of the study area that were identified as having archaeological potential removed (i.e., areas of deep and extensive disturbances) are exempt from requiring Stage 2 AA

(extents to be confirmed through a detailed on-site property inspection during a Stage 2 AA if to be impacted by construction activities tied to the preferred solution, as per Section 2.1.8 of the 2011 S&G. Construction activities include, but aren't limited to, grading, deep excavation, laydown, staging and stockpiling areas).

- Parts of the study area that were identified as having no or low archaeological potential (i.e., wetlands, watercourses and water bodies) are exempt from requiring Stage 2 AA (extents to be confirmed through a detailed on-site property inspection during a Stage 2 AA if to be impacted by construction activities tied to the preferred solution. Construction activities include, but aren't limited to, grading, deep excavation, laydown, staging and stockpiling areas).
- Parts of the study area that were identified as retaining archaeological potential must be subjected to a Stage 2 AA if to be impacted by construction activities tied to the preferred solution (construction activities include, but aren't limited to, grading, deep excavation, laydown, staging and stockpiling areas). These areas must be subjected to test pit survey at five-metre intervals in accordance with the standards set within Section 2.1.2 of the 2011 S&G.
- Should construction activities (grading, deep excavation, laydown, staging and stockpiling areas, etc.) extend beyond the assessed limits of the study area, further archaeological investigation will be required to assess the archaeological potential of these lands.

Further recommended assessment (e.g., Stage 2-4) will be completed as early as possible in the detailed design phase and prior to any ground disturbing activities.

Figure 5-3 - Stage 1 AA results of the study area

5.7.1.2 Built Heritage Resources and Cultural Heritage Landscapes

A Cultural Heritage Report: Existing Conditions and Preliminary Impact on August 3rd, 2023, by Archaeological Research Associates Ltd. (ARA) was undertaken to identify known (previously recognized) or potential built heritage resources and cultural heritage landscapes (BHR/CHLs) and

assess potential impacts of the preferred alternatives. Based on the report, it was determined that there are not known and potential BHR/CHL within the study area. Therefore, there are no concerns with respect to built heritage resources and cultural heritage landscapes related to the proposed Long Point Sanitary Sewer and Craigleith WWTP in the Town of the Blue Mountains.

The Cultural Heritage Report is included in **Appendix O**.

5.7.2 Natural Environment - Ecological Study

EnVision Consultants Ltd. was retained by WT Infrastructure Solutions Inc. to conduct a background review and a Species at Risk (SAR) Assessment at the Craigleith Wastewater Treatment Plant and within Long Point Road's right of way (ROW) from the Wastewater Treatment Plan south to the Highway 26.

The background review and SAR assessment is designed to assess the potential impact of proposed changes to terrestrial natural heritage features in accordance with The Provincial Policy Statement (PPS) (Ontario Ministry of Municipal Affairs and Housing (OMMAH, 2020), The Ontario Regulation 230/08 issued under the Endangered Species Act, 2007 (ESA, 2007), The Conservation Authorities Act. The purpose of this assessment is to:

- Document existing conditions of the site.
- Undertake SAR flora and fauna surveys.
- Locate, identify, delineate, and comment on SAR individuals, habitat, and habitat features.
- Identify and discuss the potential impacts of the proposed works in relation to the Endangered Species Act (ESA) (2007).

A site visit was completed on April 30th, 2022, to confirm presence of natural heritage feature, general characteristics and confirm the presence of SAR species and/or habitat. Prior to commencing the site investigation, a review of background information and satellite imagery was conducted to identify the presence of Key Natural Heritage Features (KNHF)s on the Site.

During the site visit, field investigations carried out to provide detailed and reliable information on SAR presence or absence, suitable habitat, habitat features, and to ensure that proposed works do not contravene the ESA. Focus was placed upon searching for SAR individuals, habitat and habitat features such as, dens, burrows, snake thermoregulation areas, vernal pools, tree cavities and basking sites. Wildlife species were identified through direct observation, evidence such as tracks, scat, browse or vocalization. In particular:

- **Natural Heritage Areas** online mapping tool was reviewed for significant natural areas. There is a provincially significant wetland (PSW) Silver Creek Wetland Complex located east adjacent to Long Point Road across from the WWTP as well as 30 m northwest of the Site. Woodlands are located adjacent to Long Point Road and one small woodlot is located on the southeast side of the WWTP property. A small pond is located northeast side of the WWTP property. There is a small tributary that drains towards the pond.
- **High-level vegetation survey** was undertaken as vegetation emergence had not fully occurred; ground layer vegetation was not assessed due to the time of year. The small woodlot on the south side of the WWTP was identified as a Fresh-Moist Poplar Deciduous Forest dominated by Trembling Aspen (Populus tremuloides) with associations of Green Ash (Fraxinus pennsylvanica) and had rare occurrences of Silver Maple (Acer saccharinum), Eastern Red Cedar (Juniperus virginiana) and Scots Pine (Pinus sylvestris). The understory consisted of Red-osier Dogwood (Cornus sericea), Common Buckthorn (Rhamnus cathartica), Green Ash and Trembling Aspen. The south portion of the woodlot had been disturbed with soil and old landscape dumping. North of the woodlot is a small ephemeral tributary that exhibited low water levels at the time of the survey. This tributary was lined with cattails (Typha sp.) until it discharges

into a pond northeast of the WWTP property. The cattail community continues along the southern bank of the pond and then again continues into the tributary that flows downstream from the pond along the west side of Long Point Road. On the east side of Long Point Road across from the WWTP is the Silver Creek Wetland Complex. This area consists of a Deciduous Swamp and a larger woodland to the east. Along the west side of Long Point Road there is a mapped watercourse that flows north and crosses east under Long Point Road towards Georgian Bay.

- **Fauna and Wildlife:** A total of seven wildlife species were identified on Site and were identified through visual observation or vocalizations. Of the seven species, six were bird species and one mammal species.
- **A SAR bat maternity roost survey** was conducted using MNRF's Bat and Bat Habitat: Guidelines for Wind Power Projects (MNRF, 2011), Survey Protocol for Species at Risk Bats within Treed Habitats. Little Brown Myotis, Northern Myotis, and Tri-colored Bat (MNRF, 2017) and MECP's Bat Survey Standard Notes (MECP, 2021). The purpose of the bat maternity roost survey was to determine potential breeding habitat within the Site for Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis) and Tri-colored Bat (Perimyotis subflavus). A review of Ecological Land Classification (ELC) vegetation communities within the Site was also conducted to determine if there is potential SAR bat habitat.
- **A leaf-off survey** was conducted to determine possible maternity roost trees for Little Brown Myotis, Northern Myotis and Tri-colored Bat. A "snag" is considered to be "any standing live or dead tree, ≥25cm diameter at breast height (DBH) with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliatingbark" (MNRF, 2017).

To summarize, the SAR assessment field investigation reported that, although the tree species are suitable roosting habitat species, the overall roost quality of the trees is poor and therefore the Site does not provide suitable SAR bat maternity roosting habitat. However, to prevent a contravention of the ESA (2007) tree/vegetation removals can be undertaken between October 1st and March 31st, which is outside of the bat timing window (April 1st to September 30th).

Endangered, rare, or threatened species were not identified during the site investigation; however, the forested habitats found adjacent of the Site and the woodland on the south portion of the WWTP property provide moderate habitat potential for Canada Warbler, Eastern Wood-Pewee and Wood Thrush, all species of Special Concern on the Species at Risk in Ontario List. Per the Migratory Birds Convention Act (MBCA), tree/vegetation removals shall occur outside the active breeding bird period identified as April 1st to August 31st.

For additional details, the ecological report has been included in **Appendix F.**

5.7.3 Natural/Technical – Geotechnical/Hydrogeological Investigation

EnVision Consultants Ltd. was retained by WT Infrastructure Solutions Inc. to conduct geotechnical and hydrogeological investigation work in support of the preliminary design of the proposed study.

Preliminary investigations of the study area were carried out with respect to policy and regulatory settings, geology and hydrogeological settings, topography, and surface water features. Background research results are summarized as follow:

- **Policy and Regulatory settings:** The Source Protection Information Atlas indicates that the Site falls under the Grey Sauble source protection area. Although the Site does not fall under any wellhead protection areas, the area is considered a significant recharge area for groundwater and highly vulnerable aquifer with a score of 6. The area was also reviewed with respect to natural heritage features. There are several nearby evaluated and non-evaluated provincially significant wetlands as well as woodlots.
- **Geology settings:** Based on a review of the public geological mapping of the Study Area, the Site and Study area is situated across variable surficial deposits ranging from

raised beach sands of the post-Nipissing age, to mud and muck deposits along poorly drained low areas to sandy silt tills from the late-Wisconsinian age (Ministry of Northern Development, Mines and Forestry, 2013). Bedrock mapping of the Study Area identifies the bedrock as the Ottawa Group formation; a mix of limestone, dolostone, shale, arkose, and sandstone (Sharpe, 1980). An analysis of MECP well records (Ministry of Environment, Conservation and Parks, 2018) in the area indicates bedrock is expected as shallow as 7 meters below the ground surface.

- **Hydrogeological settings:** Based on a review of the online MECP Water Well Record (Ministry of Environment, Conservation and Parks, 2018) database, there are sixty-two (62) water wells in the Study Area. Of the well records returned in the search, six (6) of them were determined to be observation wells or abandoned wells and fifty-six (56) of them were classified as water supply wells. Of the water supply wells, fifty-two (52) of them are for domestic use and four (4) are used for commercial use.
- **Topography:** Based on a topographic survey completed by EnVision, the existing Site surface features a minor gradient dipping toward the north along Long Point Road towards Georgian Bay. Ground surface of the site ranges from 184 meters above sea level (m ASL) near the intersection of Long Point Road and Highway 26, to 179m ASL at the northern portion of the wastewater treatment facility. Stormwater runoff is controlled by drainage ditches that run along Long Point Road. At the wastewater treatment plant, stormwater is controlled by the topography and directed towards a small creek that runs east-west along the southern side of the facility up towards a drainage pond on the north side of the facility.
- **Surface Water Features:** There are no major surface water features located within the site area. There is, however, a small creek that feeds into a drainage pond on the north side of the wastewater treatment facility. Georgian Bay is also located approximately 275m from the wastewater treatment facility.

In addition to the aforementioned studies, field investigations were conducted to determine the subsurface soil and groundwater conditions within the project area. The EnVision geotechnical field investigation consisted of drilling five (5) boreholes to depths of 4.6m to 7.6m below the existing ground surface. Boreholes were drilled in the vicinity of the existing pumping station and along Long Point Road. The drilling work was completed between October and November of 2022. Three of the boreholes were converted to long-term groundwater monitoring wells to assess groundwater quality. Findings from field investigations are summarized as follow:

- **Craigleith WWTP area**
  - Subsurface conditions revealed in the boreholes consisted of pavement structure extended to a depth of 1.5m below ground surface. Below the pavement structure, an upper cohesionless deposit of silt was encountered which extended to a depth of 1.5m below existing ground surface. A layer of topsoil was encountered with thickness varying from approximately 150mm to 170mm, while the depth decreases to 70mm along the access road to the plant. Below topsoil, cohesive clay to clayey silt fill material extended to depth of 0.8m to 1.5m below ground surface, which in turn are underlain by very dense, stony, glacial till deposits of sandy silt to silty dabs.
  - Groundwater Level was found to be at 0.2m to 0.9m below the existing ground surface. To assess the general chemistry of the groundwater, a comprehensive sample of the groundwater was collected and compared to the Regional Municipality Sewer Use Bylaw and the Provincial Water Quality Objectives (PWQO). Results from the groundwater quality assessment indicate no exceedances for discharge to the sanitary sewer. However, groundwater quality results indicate three (3) exceedances when

compared to Provincial Water Quality Objectives (PWQO). The exceedances include boron, cobalt, and Iron.

- **Long Point Road area**
  - Subsurface conditions revealed in the boreholes consisted of pavement structure overlying cohesionless fill comprised of sand underlain by stony, glacial till deposits of sandy silt to silty sand texture. The fill material extended to depths ranging from 1.5m to 2.3m below the existing ground surface. Glacial deposits were encountered at depths ranging from 1.5m to 2.3m which extended to termination depths of 4.6m to 4.9m.
  - Groundwater level was found to be at 0.9m below the existing ground surface. Results from the groundwater quality assessment indicate no exceedances for discharge to the sanitary sewer. However, groundwater quality results indicate one (1) exceedance when compared to Provincial Water Quality Objectives (PWQO). The exceedances were noted for toluene.

For additional details, the ecological report has been included in **Appendix G.**

5.8 Evaluation of Alternatives

The evaluation of alternatives is intended to be an unbiased assessment of each alternative against the defined design criteria and the Class EA environmental components that will allow for the selection of the preferred alternative. The following is a brief explanation of each of the primary criteria:

1. **Technical –** This is a relative comparison of the technical effectiveness of each alternative in achieving the project goals. It is intended to address both feasibility and efficiency of the proposed alternatives. This criterion addresses the technical effectiveness in terms of the user experience, operational effectiveness, and general efficiency of approach.
2. **Natural Environment –** This is both a relative comparison and absolute assessment of impacts (positive and negative) of the proposed alternatives on the natural environment. Specifically, this is looking at the ecosystem impacts, sensitivity of the project area to change and other impacts including changes to geotechnical or hydrogeologic conditions. If the preferred alternative were to have significant absolute impacts that cannot be effectively mitigated that will impact the selection of the preferred alternative even if it is the least impactful of the actionable alternatives.
3. **Social and Cultural Heritage Environment**, which includes:
   a. **Archaeological Resources –** This is both a relative comparison and absolute assessment of impacts (positive and negative) of the proposed alternatives to the archaeological sites and areas of archaeological potential.
   b. **Built Heritage Resources and Cultural Heritage Landscapes –** This is an assessment of direct impacts to known or potential BHR/CHL (e.g., demolition, removal, or alteration) or Indirect impacts (e.g., alteration/obstruction of views, vibration, and isolation).
4. **Economic Environment** – This is both a relative comparison and absolute assessment of impacts (positive and negative) of the proposed alternative associated with the economic environment. This addresses the capital/operating (lifecycle) cost of the infrastructure required for each alternative as well as other economic impacts such as loss of land development potential, lost opportunities associated with land acquired for municipal infrastructure and potential economic loss due to changes in business opportunities. Furthermore, the factor of affordability is a consideration in terms of the cost vs benefit to the community and if the return on investment is reasonable.

5.8.1 Alternative Evaluation Ranking and Weighting

The approach to determining the preferred alternative is intended to be transparent and defensible. Our approach to is score each alternative against the same parameters and then rank the alternatives relatively. The objective of this approach is to compare apples to apples. It is acknowledged that there is some level of subjectivity to this type of analysis and the explanation to support the scoring is intended to provide justification for the assessment of each parameter.

The scoring criteria that are used and examples of what will constitute each scoring situation are included in Table 5-1.Table 5-1Minor variations between similar alternatives will be scored based on the comparative evaluation between each alternative. For example, two alternatives that both are feasible with limited restrictions, but relatively the limited restrictions are less significant on one alternative than the other, then the alternative with the least restrictions would score an 8 and the alternative with slightly more restrictions would score a 7.

Table 5-1: Scoring Criteria Examples

	Score				
	0-2	3-4	5-6	7-8	9-10
Relative Impact	**Critical**	**Significant**	**Potential**	**Minor**	**Negligible**
Technical	Does not provide a feasible solution.	Feasible with significant restrictions	Feasible with some restrictions	Feasible with limited restrictions	Feasible with no restrictions
Natural	Definite impacts to species at risk, permanent or irreversible impacts	High potential for impacts to species at risk or natural environment, permanent/semi permanent impacts	Potential for impacts to the natural environment that may have an impact on habitat or natural features, semi-permanent or temporary	Potential for minor impacts to natural environment that can be mitigated to minimize risk.	Limited or no impacts on the natural environment
Archaeological Resources	Critical permanent negative impacts to archaeologic al sites and areas of archaeological potential	Significant permanent or long-term to archaeologic al sites and areas of archaeological potential	Potential impacts to areas of archaeologic al potential	Minor permanent or temporary impacts to archaeologic al sites and areas of archaeological potential	No impact to archaeologic al resources or areas of archaeologic al potential
Built Heritage Resources and Cultural Heritage Landscapes	Critical direct or indirect Impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes	Significant direct or indirect Impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes	Potential direct or indirect impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes	Minor direct or indirect Impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes	No impact to known or potential Built Heritage Resources and Cultural Heritage Landscapes
Economic	Unaffordable, catastrophic	High cost, potential for	Relatively high cost, minor	Relatively low cost, potential	Lowest cost, defined positive

	adverse economic impact on proponent and/or public, return on investment is beyond lifespan of infrastructure	significant adverse economic impact, return on investment is a significant component of infrastructure lifespan	potential for adverse economic impact, return on investment is over 10 years.	for positive economic impact, return on investment is less than 5 years.	economic impact, shortest return on investment.

5.8.2 Technical Assessment

The technical assessment of alternatives addresses the functionality of the proposed alternatives relative to the design criteria and industry standards. The main objective of the technical assessment is to determine if the alternative is feasible or, in other words, will it work? Then the focus on the efficiency of the design in terms of operational considerations (simple vs. complex), energy efficient (primarily gravity vs. primarily mechanical pumping) and does it provide any other technical advantages such as does it open up other opportunities or is it a temporary solution that meets current needs but does not provide a long-term ultimate solution.

Table 5-2 illustrates the comparison and scoring of the technical evaluation criteria in order to rank the alternatives relative to each other as part of the identification of the preferred alternative.

Table 5-2: Technical Assessment Evaluation of Alternatives

Alternative	Technical Assessment	Score
A: Do Nothing	▪ Feasible ▪ Does not allow for growth. Limited to capacity of 300mm temporary sanitary sewer along Highway 26.	4
B – Expand Craigleith Sanitary Pumping Station and Collection System	▪ Feasible ▪ Does allow for growth to full build-out. ▪ Less efficient in comparison with Alternative C and D due to conveyance to Craigleith SPS and pumping to Craigleith WWTP rather than shorter direct route to Craigleith WWTP via Long Point Road. ▪ Does not allow for servicing of lands near WWTP.	7
C – Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP	▪ Feasible ▪ Does allow for growth to full build-out. ▪ Most efficient solution for maximizing gravity conveyance to WWTP. ▪ Allows for potential servicing of part of Brophy Lane and all of Long Point Road.	10
D – Trunk Sewer to New Sanitary Pumping Station on Long Point Road	▪ Feasible ▪ Does allow for growth to full build-out. ▪ Less efficient than Alternative C due to longer forcemain length. ▪ Allows for potential servicing of part Long Point Road.	9

From a technical perspective, the highest ranked alternative is Alternative C.

5.8.3 Natural Environment Assessment

The natural environmental assessment is intended to evaluate both temporary and permanent impacts on the natural environment, this may include species at risk, loss of habitat, impacts on natural features (waterways, etc.), impairment of soil, air, and water as a result of activities and changes to the natural environment as a whole. In general, for this assignment based on the review of the ecological assessment report, the site conditions are generally not unique and do not have identified species at risk or significant natural features that may be impacted.

This project may enable other independent works that may have natural environment impacts; however, they are not directly related to this project and there are other options available to either mitigate impacts associated with those works. Other works not related to this project are to be dealt with via separate environmental planning processes.

Table 5-3 illustrates the comparison and scoring of the natural environment evaluation criteria in order to rank the alternatives relative to each other as part of the identification of the preferred alternative.

Table 5-3: Natural Environment Assessment Evaluation of Alternatives

Alternative	Natural Environment Assessment	Score
A: Do Nothing	▪ No impacts since no work is proposed.	10
B – Expand Craigleith Sanitary Pumping Station and Collection System	▪ Limited clearing of treed areas around existing SPS for new construction. ▪ Erosion and sediment risks during construction of linear components. Approximately 3.5 km length of area impacted. Risk of off-site erosion and sediment impacts during construction to be reduced, but not eliminated with required erosion and sediment control measures. ▪ No identified Species at Risk in area or alignment. Majority of area is previously disturbed or actively occupied (road allowances). ▪ Timing of works can be coordinated to minimize risk to breeding birds and other species.	7
C – Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP	▪ Limited clearing of treed areas around existing WWTP for new construction. ▪ Erosion and sediment risks during construction of linear components. Approximately 500 m length of area impacted. Risk of off-site erosion and sediment impacts during construction to be reduced, but not eliminated with required erosion and sediment control measures. ▪ Expanded potential sanitary service area (Brophy's Lane and Long Point Road) will reduce the dependency on septic systems which can result in an improvement to natural environmental health due to lower nutrient loading on surficial groundwater and Nottawasaga Bay. ▪ No identified Species at Risk in area or alignment. Majority of area is previously disturbed or actively occupied (road allowances). ▪ Timing of works can be coordinated to minimize risk to breeding birds and other species. ▪ Proposed works for addressing noise and odour will reinstate vegetative buffer for habitat improvement.	8
D – Trunk Sewer to New Sanitary Pumping Station on Long Point Road	▪ New SPS site will need to be cleared. ▪ Erosion and sediment risks during construction of linear components. Approximately 500 m length of area impacted. Risk of off-site erosion and sediment impacts during construction to be reduced, but not eliminated with required erosion and sediment control measures. ▪ Expanded potential sanitary service area (portion of Long Point Road) will reduce the dependency on septic systems which can result in an improvement to natural environmental health due to lower nutrient loading on surficial groundwater and Nottawasaga Bay. ▪ No identified Species at Risk in area or alignment. Majority of area is previously disturbed or actively occupied (road allowances) with the exception of the new SPS, which depending on the site selected may be undisturbed lands and will need assessment if preferred. ▪ Timing of works can be coordinated to minimize risk to breeding birds and other species.	6

From a natural environmental impact perspective, the highest ranked alternative is Alternative A as there are no natural environment impacts associated with doing nothing.

5.8.4 Social/Cultural Heritage Environment Assessment

The Social and Cultural Heritage environment assessment is focused on the following key issues:

- Social – Impacts (positive or negative) on land use, enjoyment, nuisance, recreational impacts, safety, unreasonable change in conditions, etc.
- Cultural Heritage- Impacts (direct or indirect; positive or negative) on cultural heritage resources which include archaeological resources, built heritage resources and cultural heritage landscapes.

As indicated in the Stage 1 - Archaeological Assessment, there are no identified significant features associated with the proposed works and the majority of the alternatives are within currently disturbed right-of-way and existing municipal lands. Furthermore, with the exception of Alternative D, the proposed major works are located on a site that already has purpose-built wastewater infrastructure that is complementary to the proposed alternatives.

Table 5-4 illustrates the comparison and scoring of the social/cultural heritage environment evaluation criteria in order to rank the alternatives relative to each other as part of the identification of the preferred alternative.

Table 5-4: Social/Cultural Heritage Assessment of Alternatives

Alternative	Social/Cultural Heritage Assessment	Score
A: Do Nothing	▪ No impacts to known archaeological sites or areas of archaeological potential ▪ No impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes ▪ Existing issues associated with site such as traffic impacts and odour will remain. ▪ Limiting growth potential within collection system will adversely impact tax base and employment opportunities within sewer shed. ▪ Proposed independent upgrades to facility will address some of these issues.	5
B – Expand Craigleith Sanitary Pumping Station and Collection System	▪ Enabling growth will have positive impacts in terms of increased tax base to share in community costs and population growth. It will also have negative impacts in terms of traffic impacts, changes to landscape associated with development. ▪ Existing issues related to concerns related to basement flooding, noise and odour can be mitigated, but risk impact potential will be increased by conveying all wastewater to the Craigleith SPS in an area that will become increasingly residential area. ▪ Do not exhibit obvious extensively disturbed conditions ▪ No cultural heritage resources were identified within or adjacent to the study area. Therefore, there are no concerns with respect to built heritage resources and cultural heritage landscapes ▪ Traffic concerns related to noise, odour and safety associated with septage/leachate receiving station will remain.	7
C – Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP	▪ Enabling growth will have positive impacts in terms of increased tax base to share in community costs and population growth. It will also have negative impacts in terms of traffic impacts, changes to landscape associated with development. ▪ Centralizing wastewater related components at the WWTP mitigates impacts associated with new sanitary pumping station since the community is familiar with the operations of the necessary infrastructure and additional facilities will have a negligible impact. ▪ Disturbances documented within the area ▪ No cultural heritage resources were identified within or adjacent to the study area. Therefore, there are no concerns with respect to built heritage resources and cultural heritage landscapes ▪ Proposed solution can include enhance buffers between residential lots and WWTP site.	9
D – Trunk Sewer to New Sanitary Pumping Station on Long Point Road	▪ Enabling growth will have positive impacts in terms of increased tax base to share in community costs and population growth. It will also have negative impacts in terms of traffic impacts, changes to landscape associated with development. ▪ Construction of a new SPS on a newly acquired property will reduce available land for development and will have localized temporary construction impacts and minor long-term impacts on adjacent landowners.	8

	▪ Disturbances documented within the area. ▪ No cultural heritage resources were identified within or adjacent to the study area. Therefore, there are no concerns with respect to built heritage resources and cultural heritage landscapes ▪ New site will need to be assessed once selected. Therefore, the risk is low but higher than Alternative C. ▪ Proposed solution will add new potential area of odour generation outside of existing WWTP buffer areas which may have periodic impacts on adjacent landowners.	

From a social/cultural heritage impact perspective, the highest ranked alternative is Alternative C as it has the least inherent social/cultural heritage negative impacts due to the location on the WWTP site and allows for planned community growth which will benefit new residents and ratepayers by expanding the tax base and providing homes for community growth.

5.8.5 Economic Environment Assessment

The economic environmental assessment is more than simply the cost of the project. It is an assessment of the cost of the project as well as the economic impacts of proceeding (or not) with the proposed solution that meets the project objectives.

As many of the alternatives are similar and wastewater collection infrastructure is lower maintenance than treatment plants, the general variation between alternatives for operational cost is low.

Capital cost is a significant factor in the evaluation of alternatives as is the limitation and enabling of community growth. While there may be some opposition to community growth, that is beyond the scope and range of this project. The assessment of benefit for allowing development is based on the defined Official Plan and Zoning Allowances for existing lands and does not extend into areas that may be rezoned for development in the future. For the purposes of this assessment, we have looked exclusively at the short- and medium-term development potential as the majority of these lands are zoned for development and either have development plans approved or in progress.

Table 5-5 illustrates the comparison and scoring of the economic environment evaluation criteria in order to rank the alternatives relative to each other as part of the identification of the preferred alternative.

Table 5-5: Economic Environment Evaluation of Alternatives

Alternative	Economic Assessment	Score
A: Do Nothing	▪ Capital Cost: $0 ▪ Operating Cost Impact: No change from current operational cost. ▪ Limitation on growth will have an adverse economic impact on landowners that may be considering development, reduced supply of housing will increase cost of existing residences, reduced development will reduce Town tax revenue	6
B – Expand Craigleith Sanitary Pumping Station and Collection System	▪ Capital Cost: $16-19 million ▪ Operating Cost Impact: No significant change ▪ Cost per additional ERU serviced: $5,600 - $6,600 (medium term) ▪ Removing limitation on growth will allow for significant economic benefit in terms of tax base and economic development.	5
C – Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP	▪ Capital Cost: $8.1 million ▪ Operating Cost Impact: Increased cost relative to single SPS, but less than Alternative D due to the co-location of SPS on WWTP. ▪ Cost per additional ERU serviced: $2,800 (medium term) ▪ Removing limitation on growth will allow for significant economic benefit in terms of tax base and economic development.	8

D – Trunk Sewer to New Sanitary Pumping Station on Long Point Road	▪ Capital Cost: $9.5 million ▪ Operating Cost Impact: Highest relative operating cost. ▪ Cost per additional ERU serviced: $3,300 (medium term) ▪ Removing limitation on growth will allow for significant economic benefit in terms of tax base and economic development.	7

From an economic environment perspective, the highest ranked alternative is Alternative C as it has the lowest cost of solutions that are able to fully solve the defined problem by meeting community growth objectives.

5.8.6 Septage/Leachate Receiving Station Relocation Assessment

As indicated in Section 5.6, the alternatives for septage/leachate receiving are essentially to leave it where it is or move it to the WWTP. If the preferred alternative is to construct a new pumping station at the WWTP, then there are additional synergies with the relocation of the receiving station; however, for the purposes of the Class EA, they have been evaluated independently.

Table 5-6 illustrates the evaluation of both alternatives against the key Class EA environmental criteria to rank the preferred alternative.

Table 5-6: Septage/Leachate Receiving Station Evaluation of Alternatives

	Maintaining septage receiving at the existing Craigleith Sewage Pumping Station	Relocate septage receiving to the Craigleith WWTP
Technical	▪ Feasible ▪ Exterior upgrades to improve operational efficiency and reduce odours are required. ▪ Site does not allow for reconfiguration of truck traffic without major clearing of buffers to adjacent residences. ▪ Construction staging to maintain existing receiving station will be necessary. ▪ Access to unsignalized intersection to Highway 26 or to a signalized intersection via Lakeshore Road will remain a concern. ▪ SCORE: 7	▪ Feasible ▪ Coordinated with Alternative C pumping station will provide significant operational efficiencies. ▪ Site can be configured to provide safe vehicle transit through the site. ▪ Integration of inlet pumping station to the WWTP site will provide significant operational efficiencies and improved redundancy. ▪ Project can be implemented independently from the existing site allowing for simple transition between facilities. ▪ No traffic concerns at site, but intersection with Highway 26 in unsignalized and additional truck traffic may increase intersection delay times. ▪ SCORE: 9
Natural Environment	▪ No additional undisturbed areas to be encroached upon. ▪ SCORE: 10	▪ Redevelopment of existing disturbed areas with limited additional area required compared with Alternative C. ▪ SCORE: 10
Social/Cultural Heritage	▪ Continued noise/odour associated with facility use which will increase as development approaches the SPS site. ▪ Continued traffic issues. ▪ The area does not exhibit obvious extensively disturbed conditions of archaeological resources. ▪ No cultural heritage resources were identified within or adjacent to the ▪ SCORE: 6	▪ Noise and odour can be mitigated and will be more consistent with WWTP site. ▪ Additional traffic will increase delay at unsignalized intersection of Long Point Road and Highway 26. ▪ Potential disturbance of archaeological resources documented near to the WWTP site. ▪ No cultural heritage resources were identified within or adjacent to the ▪ SCORE: 8

Economic	▪ Capital Cost: $1.5M ▪ Operating Cost Impact: No change from current operational cost. ▪ SCORE: 10	▪ Capital Cost: $2.1M ▪ Operating Cost Impact: Anticipate lower cost as facility is co-located with WWTP and all staffing and equipment infrastructure is located there., ▪ SCORE: 9
Total	**32/40 (80%)**	**36/40 (90%) PREFERRED ALTERNATIVE**

The preferred alternative based on a ranking of each criterion is the relocation of the facility to the WWTP. This alternative centralizes all wastewater management components in a location where issues such as odour and noise can be addressed in a practical manner in a holistic manner for the facility.

5.8.7 Alternative Evaluation Summary

Based on the evaluation from the previous sections, the alternative assessment can be summarized in Table 5-7.

Table 5-7: Alternative Evaluation Scoring and Selection Summary

	Alternative A: Do Nothing	Alternative B: Upgrade Craigleith SPS	Alternative C: New SPS at Craigleith WWTP	Alternative D: New SPS on Long Point Road.
Technical	SCORE: 4 RANK: 4th	SCORE: 7 RANK: 3rd	SCORE: 10 RANK: 1st	SCORE: 9 RANK: 2nd
Natural	SCORE: 10 RANK: 1st	SCORE: 7 RANK: 3rd	SCORE: 8 RANK: 2nd	SCORE: 6 RANK: 4th
Social/Cultural Heritage	SCORE: 5 RANK: 4th	SCORE: 7 RANK: 3rd	SCORE: 9 RANK: 1st	SCORE: 8 RANK: 2nd
Economic	SCORE: 6 RANK: 3rd	SCORE: 5 RANK: 4th	SCORE: 8 RANK: 1st	SCORE: 7 RANK: 2nd
Final Score & Ranking	SCORE: 25 (62.5%) RANK: 4th	SCORE: 26 (65%) RANK: 3rd	SCORE: 35 (87.5%) RANK: 1st	SCORE: 30 (75%) RANK: 2nd

Therefore, the preferred alternative is Alternative C: Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP with the relocated Septage/Leachate Receiving Station to be co-located with the new pumping station.

6 Preferred Sanitary Servicing Solution

6.1 Selection of Preferred Alternative

The evaluation process for the alternative solutions includes the assessment of the alternative solutions in comparison to criteria established by the Project Team. The evaluation process will include an overall review of the alternative solutions, including technical performance of each alternative solution as well as positive and negative impacts on the natural environment, social environment, economic environment, and technical parameters identified by the Project Team.

As detailed in the previous section, the preferred alternative is Alternative C: Trunk Sewer to New Sanitary Pumping Station at Craigleith WWTP with the relocated Septage/Leachate Receiving Station to be co-located with the new pumping station.

A review of the Municipal Class EA Schedules confirms that the project components are a best fit within requirements of a Schedule B Class EA. The consultation and review process that has been undertaken complies with or exceeds the requirements of a Schedule B Class EA and therefore, the preferred alternative can be advanced directly to implementation.

6.2 Description of Preferred Alternative

The following sections provide a more detailed description of the proposed alternative for the development of the preliminary and detailed design.

6.2.1 Service Area

At this time, the project service area is limited by the land's contributory to the extent that the Grey Road 21 trunk sewer is built to the south within the Town. This project is intended to avoid limiting potential upstream extension of the service area by providing adequately sized infrastructure to match the capacity of the Grey Road 21 Trunk Sanitary Sewer. The type, scale and location of upstream developments are beyond the control and scope of this project.

The design of the gravity infrastructure must avoid causing a bottleneck in the system, while the sanitary pumping station components, many of which have shorter lifecycles must be designed for the reasonable lifecycle of each component with the ability to expand to the ultimate capacity in an efficient manner.

6.2.2 Sanitary Trunk Sewer

Long Point Road is a boundary road between the Town of Collingwood and the Town of the Blue Mountains. The proposed trunk sanitary sewer along Long Point Road from the connection to the Grey Road 21 Trunk Sanitary Sewer on the southwest corner of Grey Road 21 and Highway 26 to the entrance to the wastewater treatment plant will be located on the west side of the centre of the road. The key information regarding the trunk sanitary sewer are as follows:

- Length – Approximately 525 m
- Depth – Varies, but the topography of the area slopes towards the Bay and the sanitary sewer will be approximately 3 m below grade to facilitate servicing of residents along the alignment.
- Size – 525-600 mm at 0.4% slope (to be confirmed in preliminary design)
- Capacity - 345 L/s - 80% pipe capacity
- Standards – Design to comply with MECP Guidelines and Town of the Blue Mountains Engineering Standards.

Appendix H illustrates the preliminary plan and profile of the proposed sanitary sewer.

6.2.3 Sanitary Pumping Station and Forcemain

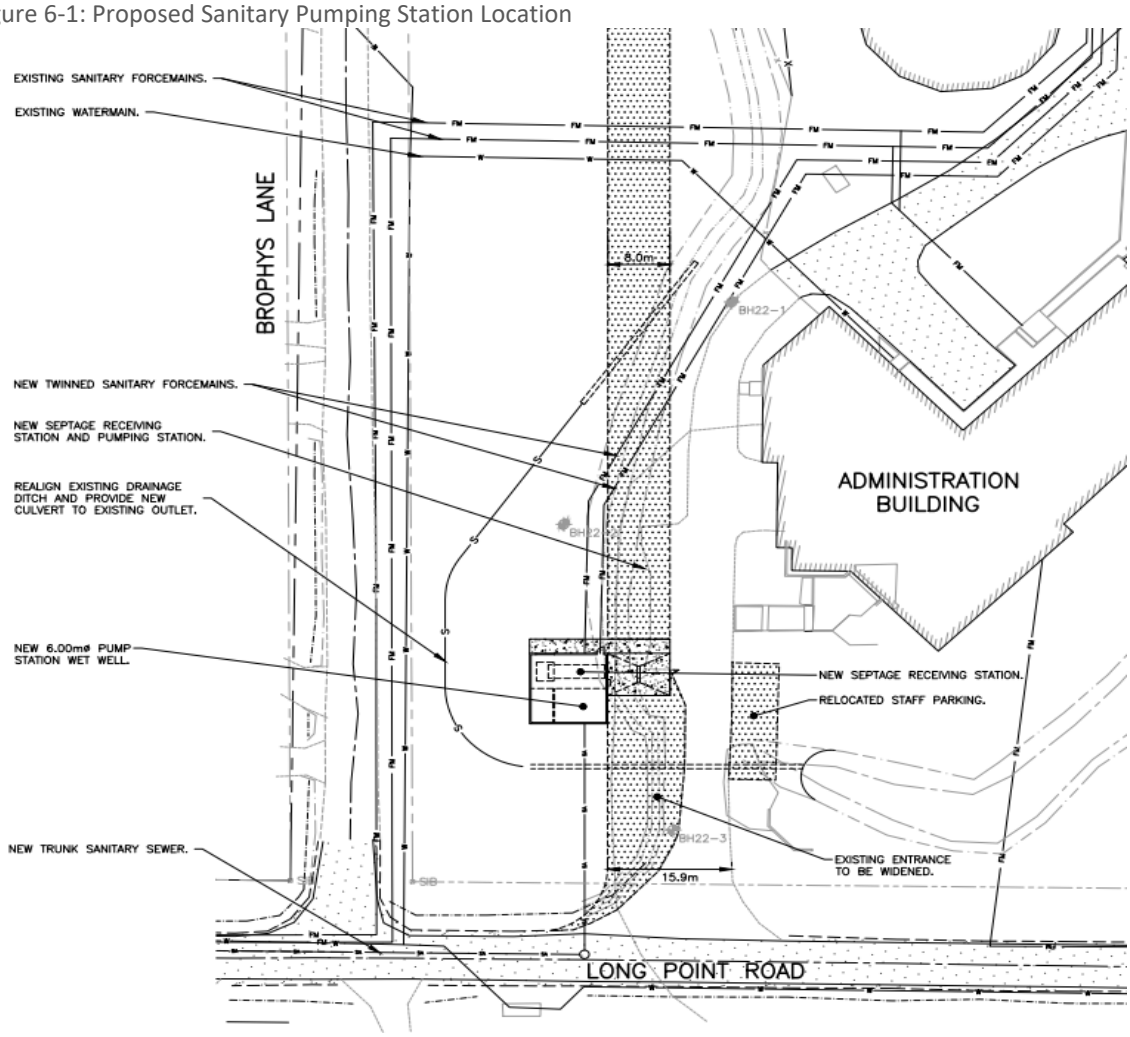
The sanitary pumping station will be located on the Craigleith WWTP opposite the existing entrance to the administration building as illustrated in Figure 6-1.

The proposed pumping station configuration will be optimized as part of the preliminary design development; however, in general, the following components will be included:

- Wet-well design for ultimate build-out, but only initially instrumented for the short-term (10 year) capacity of the system to best correspond with the lifespan of the pump components.
- Pumping systems will be sized for short-term with modular design capacity to allow for the addition of new pumps to raise the firm capacity of the system.
- The wet-well and pumping will be designed to minimize the risk of dead zones and the associated sediment/rags build-up in the wet-well causing additional operation and maintenance costs.
- Electrical, instrumentation and controls and mechanical equipment will be located in a building adjacent to the wet-well configured to minimize the amount of National Fire Protection Association (NFPA) rated spaces to reduce risk and cost. This equipment space will be shared with the proposed septage/leachate receiving station.

- The forcemain from the pumping station to the inlet works for the WWTP will be twinned and sized for both initial and ultimate capacity of the system.
- Back-up power for the pumping station will be coordinated with the main WWTP supply to ensure that facility operation can be maintained through both short and long term outages.

Figure 6-1: Proposed Sanitary Pumping Station Location



6.2.4 Septage and Leachate Receiving

The recommended solution includes the relocation of septage and leachate to the Craigleith WWTP which provides the following advantages:

- Reduces truck traffic and unsafe vehicle movements proximate to the Craigleith Sewage Pumping Station.
- Reduces the potential for the creation of odours at the Craigleith Sewage Pumping Station that may impact adjacent downwind residential areas.
- Reduces maintenance requirements on the pumps located at the Craigleith Sewage Pumping Station.
- There are operational and logistical opportunities associated with centralizing all treatment in one location; and
- A redesigned system can improve revenue generation and integrate the high strength waste (septage and leachate) into the Craigleith WWTP.

The proposed configuration of the system including the access to the site will be optimized in the preliminary design, but in general will include the following components:

- Repurpose existing access roadway (used for biosolids hauling) for access to the site from Brophy's Lane in order to allow haulers to drive straight through the site for unloading in order to avoid backing up for both noise and safety purposes. The existing roadway will be improved to minimize dust and provide a four season access to the site.

- Covered unloading area with spill collection and washdown capacity to minimize odours associated with operation.
- Automated unloading facility with CCTV cameras to allow for revenue tracking and monitoring in order to maximize revenue and accountability.
- Automated septage/leachate receiving station to separate rocks, floatables from the septage/leachate located inside a negatively pressure space designed for odour management.
- Septage/leachate holding tank and flow balancing system to allow for effective dilution of high strength waste entering the facility to minimize shock loading on the WWTP. This would be located under the receiving station equipment.
- Integrated instrumentation and electrical components with the proposed new pumping station.

6.2.5 Capital Cost Estimate (Class "D" +/- 20%)

The Class EA process uses high level estimates to provide order of magnitude comparison of costs. At the preferred alternative stage, the estimates are refined to a Class "D" (+/-20%) stage due to the opportunity to optimize and understand the design further. Table 6-1 illustrates the cost estimate for the preferred alternative.

Table 6-1: Preferred Alternative Capital Cost Estimate (Class "D")

Component	Description	Quantity	Unit Cost	Subtotal
Sanitary Trunk Sewer:				**$1.3M**
Connection to Existing Sanitary Sewer	Cored connection to the existing sanitary sewer and/or new MH with allowance for diversion to original outlet.	1	$25,000	$25,000
Sanitary Sewer – Trenchless	Jack and Bore crossing of Highway 26 through MTO ROW.	30	$5,000	$150,000
Sanitary Sewer – Open-cut	Open cut along centreline of Long Point Road including repaving of disturbed areas (full road width)	495	$2,000	$990,000
Maintenance Holes	3-5 m deep maintenance holes installed including all appurtenances	6	$20,000	$120,000
Connection to Sanitary Pumping Station	Cast-in place connection to pumping station wet-well	1	$20,000	$20,000
Sanitary Pumping Station:				**$2.35M**
SPS Site Work	Realignment of drainage around site	1	$100,000	$100,000
Wet-well	6-8-metre-deep concrete wet well configured to minimize sediment build-up and allow for future expansion within the existing well.	8 VM	$75,000	$600,000
Pumping System	Pumping system and piping/appurtenances designed for initial 50-75 L/s capacity with expansion capacity to 240 L/s.	1	$250,000	$250,000
Building Construction	Building sized for electrical and control systems (SPS components only)	1	$150,000	$150,000
Instrumentation and Controls	Integration of pumping system information with WWTP SCADA system including flow meters, level sensors and fault alarms.	1	$150,000	$150,000

Mechanical/Electrical Systems	Building servicing, main service entrance, MCC and mechanical systems (HVAC)	1	$200,000	$200,000
Back-up Generator (cost-shared component allowance)	Allowance for portion of overall generator that will be applicable to this site.	1	$200,000	$200,000
Sanitary Forcemain	Twin forcemains – 300mm from SPS to inlet works. Increased cost due to potential conflicts with existing infrastructure.	300 LM	$500	$150,000
Connection to WWTP Headworks	Connection to existing piping at inlet to WWTP headworks	1	$50,000	$50,000
Geotechnical Allowance	Rock Excavation and Dewatering allowance for potential risk.	1	$500,000	$500,000
Septage Receiving Station:				**$2.1M**
Access Road and Drainage	Upgrades to Brophy's Lane, access road, fencing and drainage	355 LM	$2,500	$887,500
Building Construction	Room within SPS for septage receiving station components including separate access and overhead door for septage screenings removal.	1	$50,000	$50,000
Exterior Works	Covered truck unloading area, concrete pad, spill collection system.	1	$100,000	$100,000
Septage Receiving Equipment	Septage Receiving Station Equipment including instrumentation and controls	1	$750,000	$750,000
Payment Control System	Payment control system with keypad and fob operation for automated billing.	1	$50,000	$50,000
Odour Control and Ventilation	Explosion proof equipment in septage receiving station including odour control system.	1	$100,000	$100,000
Storage Tank and Controls	Approx. 100 m^3 storage for mixing and dilution including control valves and mixing system.	1	$100,000	$100,000
Landscape Buffer (Berm and Trees)	Landscaping and tree planting along full length of access and expansion of buffer around new SPS.	1	$50,000	$50,000
Subtotal:				**$5.75M**
Engineering	Rounded up		15%	$0.90M
Contingency	Rounded up		20%	$1.35M
Total:				**$8.0M**

Please note that the estimate above varies from the estimate used in the evaluation of alternatives as the review of the preferred alternative advanced after those estimates were presented. As the preliminary design is developed, the general contingency will be reduced, and the accuracy of the estimate will be increased. At this stage, the reasonable range for cost for this project is between $6M – $10M.

6.3 Value Added Opportunities

Upon selection of the preferred alternative based on the independent assessment of the reviewed alternatives, there is the opportunity to review the preferred alternative and determine if there are additional value-added opportunities that may be considered as a direct consequence of the selection of a preferred alternative. In this case, the review of the septage/leachate receiving system may not have been undertaken if the other project were not contemplated.

The additional value-added opportunities that may be considered as part of the implementation of the preferred alternative are as follows:

- **System Redundancy** – The existing sanitary sewer from Grey Road 21 to the Craigleith SPS via Highway 26 will no longer be required once the Long Point Trunk Sewer is constructed; however, in the event of a failure or maintenance requirement at the new Craigleith WWTP SPS, the system could be configured to allow for overflow to the Craigleith SPS for emergency conditions. This will reduce the risk of back-up in the system provided that there is instrumentation to monitor the level at the overflow point to ensure that the flow is not exceeding the capacity of the existing sewer (e.g., this would be a solution for average day flow or less). A minor change to the piping configuration to allow for the manual or automatic redirection of wastewater to either sewer plus a level sensor with appropriate alarm annunciation will be necessary; however, this is a significant savings over potentially abandoning the existing sewer.
- **Long Point Road Sanitary Servicing** – The sanitary sewer along Long Point Road will be set at an elevation where abutting properties could connect to the sanitary sewer upon approval of the Town. This provides a value added benefit to both residents and the Town in terms of maximizing revenue generation. No additional action is required to implement this value added option.
- **Brophy's Lane Sanitary Servicing** – A sanitary sewer of adequate depth at the corner of Long Point Road and Brophy's Lane will provide an opportunity to extend sanitary servicing along Brophy's Lane. With the proposed minimum depth required for conveying the Grey Road 21 Trunk Sewer, the additional service area will be limited; however, dropping the sanitary sewer at Brophy's Lane and increasing the depth of the pumping station wet-well will allow for this. The increased cost associated with the work necessary to service the wider area can be recovered from future cost sharing for connected lands. The decision related to this will need to be made prior to implementation of the sanitary pumping station.
- **Collingwood Resident Servicing** – The addition of this sewer and the associated capacity will provide the potential to service unserviced properties outside of the Town in Collingwood both on Long Point Road and upstream along Grey Road 21. This will need to be accounted for in the capacity accounting for the overall system and should only be considered where available capacity allocation exists.

6.4 Proposed Implementation

The proposed implementation for the proposed works would be relatively straightforward once design and approvals are secured:

1. **Pumping Station and Forcemain to Headworks** – The existing Craigleith SPS would maintain current operations without any changes until the new system was constructed and commissioned.
2. **Trunk Sewer** – The Long Point Sanitary Sewer would be constructed concurrently with the pumping station such that the pumping station would be able to transition to wastewater operations following clean water testing and commissioning. A reasonable approach would be to construct the upstream connection such that it could be diverted to either

Craigleith SPS or the WWTP SPS during testing to provide the flexibility to the contractor to address any deficiencies without having a live sewer connection feeding the system.

3. **Septage/Leachate Receiving Station** – This component of the system will most likely be constructed concurrently with the pumping station; however, components could be deferred to after the commissioning of the main pumping station as the existing facility can remain in operation indefinitely until the new system is online. Once the new system is online, then the existing receiving station can be either demolished or decommissioned/repurposed.

6.5 Environmental Impact Mitigation Measures

As part of the Class EA process, the potential for impacts to the natural and social environment were identified for the preferred alternative. With those impacts, the preferred alternative can still proceed; however, the Class EA process intent is that any impacts that can be reasonably mitigated should be addressed in the detailed design.

Table 6-2 illustrates the anticipated impacts and associated proposed mitigation measures to be undertaken to reduce impacts to reasonable levels.

Table 6-2: Proposed Impact Mitigation Measures

Identified Impact	Description	Proposed Mitigation	Trigger Point
Traffic associated with septage receiving	Site traffic and intersection congestion at Highway 26	▪ Complete traffic study and risk assessment at Highway 26 intersection. ▪ Implement recommendations of traffic study. ▪ Provide traffic routing recommendations to haulers.	Preliminary Design
Noise and Odour at WWTP Site	Noise and odour associated with pumping station and septage receiving station operations.	▪ Implement noise management in design of SPS (entrances and working areas on opposite side of building from potential receivers. ▪ Pumping station and septage receiving station ventilation system and treatment system to address odour production areas. ▪ Use of excess soil to build a noise berm combined with enhancing the existing vegetative buffer to reduce off-site impacts.	Preliminary Design
Removal of Vegetation	Removal of vegetation for entrance from Brophy's Lane, drainage improvements and pump station site.	▪ Replace removed vegetation with more dense species including coniferous species to reduce off-site noise and odours year-round.	Design and Construction
Hydrogeologic Conditions	High groundwater table may cause dewatering challenges during construction.	▪ Design of dewatering system and construction method appropriate for areas with high groundwater to mitigate risk.	Design and Construction
Archaeological resources	Impacts to archaeological resources and areas of archaeological potential	▪ A Stage 2 AA and any further recommended AA (e.g., Stage 3 and 4) be undertaken by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities. ▪ Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section	Design and Construction

		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, 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.	
Built Heritage Resources and Cultural Heritage Landscapes	Impacts to known or potential Built Heritage Resources and Cultural Heritage Landscapes	▪ No cultural heritage resources were identified within or adjacent to the study area. Therefore, no proposed mitigation measures have been reported.	No Action Required

7 Public and Agency Consultation

Public consultation is an integral component of the environmental assessment process, allowing the public and various governmental agencies an opportunity to provide input into the selection of a preferred solution for the Long Point Road Sanitary Sewer and Craigleith Wastewater Treatment Plant Upgrades.

7.1 Notice of Commencement

Upon the onset of the project a list of entities was developed and is provided in **Appendix I**. On April 5th, 2022, a Notice of Study Commencement was issued to the agency contacts and advertised on the Town's website. The Notice of Commencement have been included in **Appendix J**.

Feedback from the issuance of the Notice of Study Commencement were collected and amended to this report.

7.2 Public Information Centre No. 1

The Public Information Centre was held as a virtual meeting on April 28th, 2022, from the times of 5:00pm to 7:00pm. A formal presentation was provided.

Boards presenting the project information were presented and representatives from the project team and Town staff were available to answer questions during the PIC. A total of 24 individuals attended the meeting. The PIC including the Q&A was recorded and is available on the Town's project website.

The attendance list, presentation materials, and comments sheets are included in **Appendix K.**

7.3 Public Information Centre No. 2

The Public Information Centre was held as a virtual meeting on January 26th, 2023, from the times of 5:00pm to 7:00pm. A formal presentation was provided.

Boards presenting the project information were presented and representatives from the project team and Town staff were available to answer questions during the PIC. A total of 35 individuals attended the meeting. The PIC including the Q&A was recorded and is available on the Town's project website.

The attendance list, presentation materials, and received comments are included in **Appendix L**.

7.4 Public Stakeholder Comments

Table 7-1 below provides a summary of public consultation questions, comments and answers received to date. Refer to **Appendix M** for written correspondence received from the public.

Table 7-1 Public Stakeholder Comments and Consultation

Stakeholder	Comment	Action
Public Commenter No. 1	Concerns related to local impacts including increased traffic and the possibility of increased odours on Long Point Road and Brophy's Lane	Informed that the Town would be planning to pave and improve the road structure of Brophy's Lane between Long Point Road and the entrance to the CWWTP through this project to reduce traffic issues. There would be no additional odours expected for surrounding residents with the construction of a Pumping station on the CWWTP property, however relocating the septage receiving station to the WWTP site would have the potential for bringing increased odours. Construction options to minimize the impacts to surrounding properties would be considered.
Public Commenter No. 2	Concerns related to the cost of the project and how it would be funded. Specifically, regarding the potential impacts of Bill 23 on the Town's ability to collect the Development Charges that are to fund the construction.	Informed that Bill 23 - also known as the "More Homes Built Faster Act" - will impact how the Town collects Development Charges, and how the Town is able to fund growth-related infrastructure expansion and replacement. The Town has not yet received complete details on the specific regulations around Development Charges that will be implemented through Bill 23.
Public Commenter No. 3	Concerns regarding this project's relation to the Castle Glen Development Area	Informed that through the Town's Official Plan, the Castle Glen area is designated for resort development and includes special policy considerations envisioning 1,600 units, 300 hotel or commercial accommodation units, a maximum of 5,000 square metres of commercial uses, plus golf course(s) and other recreational uses and facilities. Such development or site alteration cannot occur until such time as further studies are completed. At this time, the Town does not have an active development application making it difficult to refine estimates for growth in the area beyond what is noted it in the Official Plan.
Public Commenter No. 4	Possibility of sanitary sewer servicing on un-serviced streets in the area around the Craigleith Wastewater Treatment Plant	Informed that this project is not intended to directly result in extensions of sanitary servicing, but it may permit the future extension of services and that the standard approach is to coordinate with the Town to proceed to request a sewer extension for Council that would then be paid by the residents benefiting provided it meets the affordability criteria

Public Commenter No. 5	Potential for inclusion of failsafe measures to prevent sewage backups	Informed that the Town understands the issues with the current Pumping station, and this project would be an excellent opportunity to build a facility that be designed to prevent current issues.
Public Commenter No. 6	Likelihood of increased odours caused by proposed projects.	Informed that the area surrounding the existing Craigleith Main Pumping Station is periodically exposed to increased odour levels during septage and leachate receiving as the unloading zone is not in an enclosed facility. If the facility is moved to the CWWTP, the unloading zone could be moved to an enclosed location to minimize the amount of odour that could travel to the surrounding area. An enclosed facility would also allow for more odour-control measures to be put in place.
Public Commenter No. 7	Possibility of redirecting the flow from the sanitary sewer that goes through the Timmons Easement to the sanitary sewer on Grey Road 21 and abandon the Timmons easement sewer.	Informed that this option was considered, however the elevation of the sewer pipe invert at the southern end of the Timmons easement is too low (182.2 meters) in comparison to the pipe invert of the sanitary sewer on Grey Road 21 (184 meters). Additionally, the sanitary sewer on Grey Road 21 is not sized to handle the volume of the flow that would be directed towards it.
Public Commenter No. 8	Concerns related to the relocation of the leachate/septage receiving station due to future potential noise, odour complaints, and traffic near Brophy's Lane. Clarifications were also requested for financial impacts of potential sewer connections for the residents of Brophy's Lane.	Informed about the following: ▪ Odour concerns: the preliminary design will use the prevailing wind to design for dispersion for odour control and, it will also assume that the wind may come from another direction. Moreover, the new system will have a sealed below grade tank that will include odour management mechanisms to minimize odours. Also, balancing flow (wastewater and septage) mechanism will be used to move the septage/leachate into the plant as quickly as possible while maintaining a dilution ration that will not cause any shock to the treatment process of the plant and minimize odour production. Additional buffer features (e.g., vegetation) between the wastewater treatment plant and Brophy's Lane will be included in the design. The final goal will be to minimize existing odours and make it such that the addition of the septage receiving station does not make any existing odours worse. ▪ Traffic concerns: the preferred approach is to have a drive through design that eliminates requiring vehicles to back-up (causing noise with their warning signals). Moreover, a traffic study at Highway 26 is proposed to address that intersection and improve safety. ▪ Service Connection to Brophy's Lane: Future service connections along Brophy's lane are not a direct outcome of this project, but the proposed design will be able to facilitate these connections. These issues will be addressed during preliminary design to ensure that they are included in the implemented solution.

7.5 Public Agency Comments

Table 7-2 below provides a summary of public consultation questions, comments and answers received to date by Public Agency. Refer to **Appendix M** for written correspondence received from the public.

Table 7-2 Public Agency Comments and Consultation

Stakeholder	Comment	Action
Ministry of Citizenship and Multiculturalism	The MCM recommended to: ▪ Extend the Indigenous community engagment to additional three Indegenous communties. ▪ Addressing the archeological potential features present on site with the following: ○ Undertaking a Stage 2AA and any further recommended AA (e.g., Stage 3 and 4) as early as possible during detailed design and prior to any ground disturbing activities. ○ Undertaking a Cultural Heritage Reports to identify potential built heritage resources and/or cultural heritage landscapes within the study area and whether those resources could be impacted by the proposed undertaking.	▪ WT issued the notice of commencement and all relevant communication to each of these communities with an explanation of what had occurred. ▪ Archaeological Research Associates Ltd. (ARA) was retained by WT Infrastructure Solutions Inc. to conduct a Cultural Heritage Assessment of the lands involved in the Long Point Sanitary Sewer and Craigleith Wastewater Treatment Plan (WWTP) and no concerns were identified with respect to built heritage resources and cultural heritage landscapes related the work proposed for the Long Point Sanitary Sewer and Craigleith WWTP in the Town of the Blue Mountains. ▪ A Stage 2AA will be undertaken prior of detailed design.

7.6 Public Indigenous Comments

Table 7-3 below provides a summary of public consultation questions, comments and answers received to date by Indigenous Community. Refer to **Appendix M** for written correspondence received from the public.

Table 7-3 Public Indigenous Comments and Consultation

Stakeholder	Comment	Action
Dominic Ste-Marie Indigenous Community	Dominic Ste-Marie requested to be informed about the project and requested by e-mail to review the stage 1 archeological assessment report.	WT sent the stage 1 archeological assessment report by e-mail. Dominic Ste-Marie reviewed the Stage 1 archaeological assessment report and found everything satisfactory.

7.7 Notice of Completion

On January 22nd, 2024, a Notice of Study Commencement was issued to the agency contacts and advertised on the Town's website. The Notice of Completion have been included in **Appendix N**.

8 NEXT STEPS

The following are the proposed next steps in the development of the project towards implementation:

- Upon issuance of the Notice of Completion, agencies, stakeholders, and the general public will have a thirty (30) day period to review the Project File (this report) and the work completed to date and provide comments. If anyone feels that the project requires a higher level of study or that additional conditions be proposed on the implementation of the project, they may request to the Minister of the Environment, Conservation and Parks to issue an order regarding the project. If that has not been received following the completion of the review period, then the project may proceed to implementation.

- Subject to the clearance of the Class EA review period, the preliminary design of the proposed components can be advanced to reduce the risk associated with design changes and unknowns.
- A Stage 2 archaeological assessment (AA) and any further recommended AA (e.g., Stage 3 and 4) must be undertaken at the early stage of detailed design and prior to any ground disturbing activities in order to document the actual condition of the site and to confirm that no archaeological potential are present on-site.
- The Town can use the budgetary information from the preliminary design to put this project into a design and construction capital budget for implementation within two to five years depending on the pace of growth in the upstream drainage area.

9 CLOSURE

This Project File represents the completion of the Phase 1 and 2 of the Class EA process for this project and subject to comments will allow the project to proceed to implementation.

WT Infrastructure Solutions appreciates the opportunity to work on this project and we look forward to the opportunity to address any comments or concerns identified during the public review period.