



**TALBOTVILLE WASTEWATER
TREATMENT PLANT EA ADDENDUM**
Municipal Class Environmental Assessment

February 2024

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Township of Southwold

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165630253

Talbotville Wastewater Treatment Plant EA Addendum

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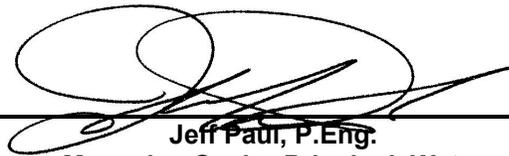
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1 Introduction and Study Background

1.1 Background

The Township of Southwold retained Stantec Consulting Ltd. to complete an Addendum to the Talbotville Wastewater Treatment Plant (WWTP) Schedule C EA Environmental Study Report (ESR) completed in 2016.

The objective of the 2016 EA was to identify a preferred WWTP plant location to service the community of Talbotville to accommodate future growth and development. The overall study area included the Township of Southwold lands within and immediately surrounding the community of Talbotville.

The purpose of this Addendum of the ESR is to revise the recommended solution for future servicing of Talbotville. Two alternative locations were identified in the ESR, a North Site and a South Site. The South Site (southwest of Highway 4) was selected and a WWTP was constructed. However, approval constraints limit the potential expansion of the WWTP and opportunities to service industrial lands have led the Municipality to consider a different location for the WWTP.

The Township intends to replace the existing WWTP and construct a New WWTP at the previously evaluated North Site, subject to completion of this EA Addendum and obtaining all permits, approvals and funding.

1.1.1 Relationship to the Master Servicing Plan

The *Talbotville & Ferndale Master Servicing Plan* (2015) considered water, wastewater, and stormwater management system needs within Talbotville and Ferndale in the Township of Southwold. The Master Servicing Plan was completed according to Master Plan Approach #2 within the MEA Municipal Class EA document (2000, as amended in 2007 and 2011). Approach #2 allows for the preparation of a Master Plan document at the conclusion of Phases 1 and 2 of the Municipal Class EA process where the level of investigation, consultation and documentation are sufficient to fulfill the requirements for Schedule B projects. Accordingly, the final public notice for the Master Servicing Plan became the Notice of Completion for the Schedule B projects within it.

No changes are required to the overall EA Alternative Solutions. **Section 3** describes the process to identify and evaluate the Alternative Solutions which resulted in the recommendation of a new wastewater treatment plant for Talbotville.

The *Talbotville Wastewater Treatment Plant Environmental Study Report* (2016) was completed to address the remaining Phases 3 and 4 of the Municipal Class Environmental Assessment, as specified in the Municipal Engineers Association (MEA) document (2000, as amended in 2007 and 2011).

The Alternative Designs are described in **Section 4**.



1.2 Purpose of the Addendum

Following the issuance of the Talbotville WWTP Schedule C ESR in 2016 the WWTP was constructed on the south site. However, opportunities for expansion or a replacement facility on the exiting site are limited by site environmental restrictions and constraints which are required by the Kettle Creek Conservation Authority.

The Township is seeking to proceed with the previously evaluated North Site as a replacement WWTP given that it had similar technical suitability to serve as a WWTP at the time of the EA. The replacement addresses the issues and the complexities associated with mitigation and obtaining permits and approvals associated with the current site (south of Sunset Road). The replacement WWTP also provides a better opportunity to service potential industrial growth east of Sunset Road.

1.3 Study Area

The 2016 EA included and evaluated two sites as part of the Alternative Design process. A study area map is provided in **Figure 1**. There are no changes to the footprint of the two sites.

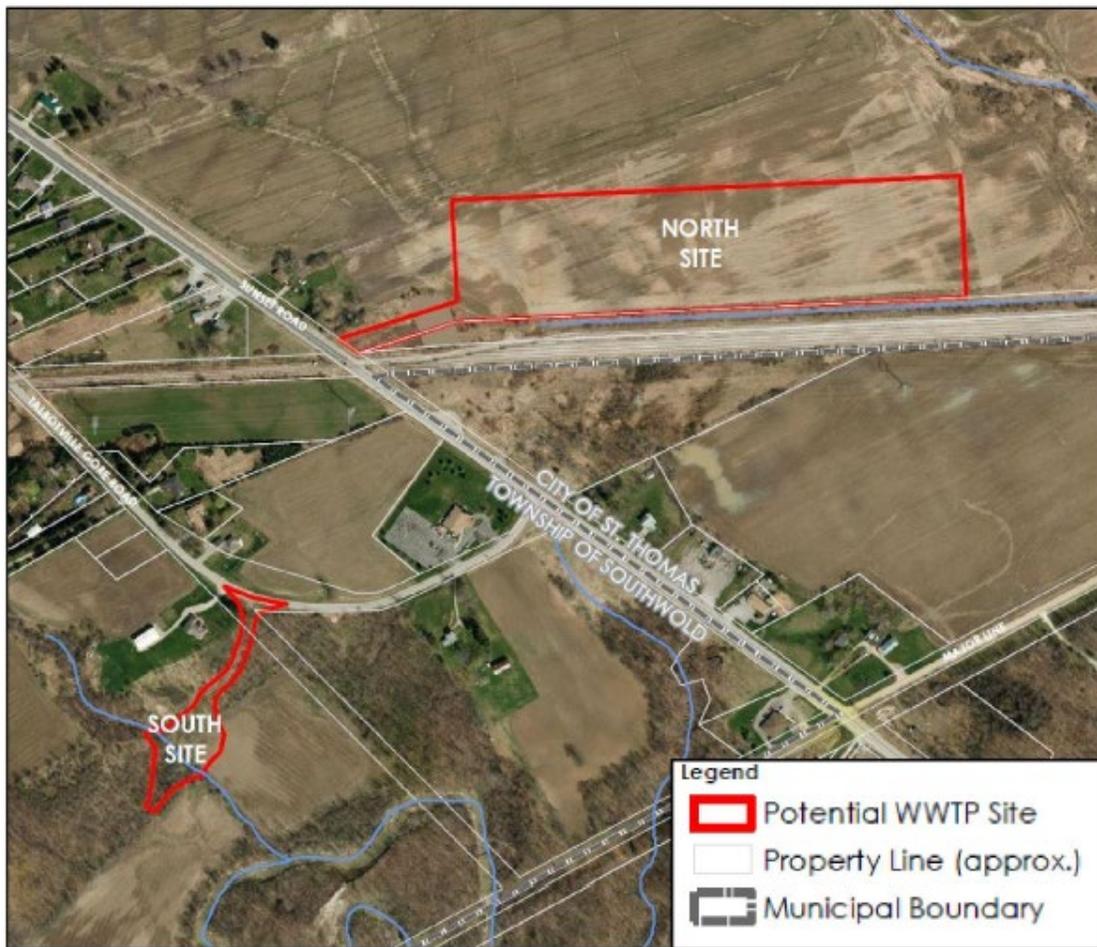


Figure 1: Study Area (Figure E.1, Potential WWTP Locations from the ESR)



1.4 Municipal Class Environmental Assessment Process

All municipalities in Ontario are subject to the provisions of the Environmental Assessment Act (EA Act) and its requirement to prepare an EA for applicable public works projects. The Ontario Municipal Engineers Association (MEA) “Municipal Class Environmental Assessment” document (October 2000 as amended) provides municipalities with a five-phase planning procedure approved under the EA Act to plan and undertake all municipal infrastructure projects in a manner that protects the environment as defined in the Act. The 2015 Master Servicing Plan was completed in May 2015 as an Approach 2 Master Plan. Approach 2 allows for the preparation of a Master Plan at the conclusion of Phases 1 and 2 of the MCEA where the level of investigation, consultation, and documentation and sufficient to fulfill the requirements for Schedule B projects. The Schedule C 2016 EA therefore followed the Municipal Class EA process as amended in 2011 by carrying forward the process started in the 2015 Master Plan.

The five phases are as described below:

- Phase 1: Review background planning and policy documents. Identify study area needs, problems, and opportunities.
- Phase 2: Prepare physical description of the study area and inventory of natural, social, and economic environments. Identify and evaluate all reasonable alternative solutions.
- Phase 3: Identify and evaluate alternative designs for the preferred solution.
- Phase 4: Document the process with an Environmental Study Report (ESR).
- Phase 5: Implement the project (detailed design and construction).

The Municipal Class EA process and associated documentation serves as a public statement of the decision-making process followed by municipalities for the planning and implementation of necessary infrastructure.

1.4.1 Project Planning Schedules

Since municipal infrastructure projects can vary in their potential for environmental effects, projects have been classified as Schedule A, Schedule A+, Schedule B, Schedule C. The types of projects and activities are intended to be categorized based on the magnitude of their anticipated environmental impact. In specific cases, however, a project may have a greater environmental impact than indicated by the Schedule. It is the responsibility of the proponent to identify the appropriate schedule for a given project, and to review the applicability of the chosen schedule at various stages throughout the project. Each of the schedules requires a different level of documentation and review to satisfy the requirements of the Class EA, and thus comply with the *EA Act* as noted below.

Schedule A projects are limited in scale, have minimal adverse impacts on the natural and social environments, and include the majority of municipal sewage, stormwater management, water operations, and maintenance activities. These projects are pre-approved and may be implemented without following the procedures outlined in the Class EA planning process. Examples of Schedule A projects include watermain and sewer extensions where all such facilities are located within the municipal road allowance



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or an existing utility corridor. As such, these projects are pre-approved and subsequently do not require any further planning and public consultation.

Schedule A+ projects are similarly pre-approved under the Municipal Class EA but require that potentially affected parties be notified prior to implementation. The public has a right to comment to municipal officials or their council on the project; however, considering that the projects are pre-approved, there is no appeal process to the Minister of the Environment, Conservation and Parks on these projects. It should be noted that amendments to the EA Act enacted through Bill 108 exempt Schedule A and A+ projects from the requirements of the EA Act.

Schedule B projects have the potential for some adverse environmental effects. Proponents are required, at a minimum, to complete phases one and two of the planning process. Schedule B requires mandatory consultation with Indigenous Communities, directly affected public and relevant review agencies, to ensure that they are aware of the project and that their concerns are identified and considered and documenting the assessment requirements in a Project File Report. Schedule B projects generally include improvements and minor expansions to existing facilities as well as new smaller scale projects.

Schedule C projects have the potential for significant environmental effects and must proceed through the full planning and documentation process. This includes mandatory consultation with Indigenous Communities, directly affected public and relevant review agencies, to ensure that they are aware of the project and that their concerns are identified and considered. An Environmental Study Report must be prepared and filed for review by Indigenous Communities, the public and review agencies. Schedule C projects generally include the construction of new facilities and major expansions to existing facilities.

The Municipal Class EA Document was updated in 2023, which reclassified the project schedules in the process to Eligible for Screening to Exempt, Schedule B, and Schedule C. Schedule A and Schedule A+ projects are now generally categorized as Eligible for Screening to Exempt, and do not require any further planning and public consultation.

1.5 Consultation Overview

Consultation is a vital part of the Class EA process. As part of the 2015 Master Plan, a stakeholder contact list was developed, which included relevant government agencies, affected landowners, local communities, general public and Indigenous communities to notify them of the Master Plan process and to solicit input. Notices were provided to agencies and all project contacts.

The consultation was carried forward into the Schedule C EA which included direct contact with the two property owners involved on both sites. Two Public Information Centres (PICs) were held during the Master Plan study and one PIC as part of the Talbotville WWTP Class EA on December 16, 2015.

The Notice of Study Commencement and the Notice of PIC 1 were published on the Township website and in the Weekly News on December 3, 2015 and December 10, 2015. The PIC for the Schedule C EA occurred as an open house on December 16, 2015 at the Keystone Community Complex in Shedden, Ontario. Notices were included on the Township website and the "Weekly News" newspaper. The Notice



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of Completion was issued in two separate issues of the Weekly News on February 25, 2016 and March 3, 2016.

Consultation also occurred with local landowners. The South Site was offered by the property owner to the Township for the purpose of the WWTP. The property owner for the North Site was also engaged directly about the availability of the land.

Indigenous community meetings were held through meetings with Caldwell First Nation, Walpole Island First Nation, and Chippewas of the Thames First Nation.

- Caldwell First Nation provided input with respect to remediation plans, requested planting Black Willows, and requested participation as a Stage 2 archaeological monitor.
- Chippewas of the Thames First Nation requested also serving as a Stage 2 Archaeological field monitor. Walpole Island First Nation reviewed the Assimilative Capacity Study. The community also requested the ability to serve as a Stage 2 field monitor.
- Walpole Island First Nation identified that the location of the south side was close to an area of floodplain. The community also expressed a preference for a vegetated buffer from the edge of the floodplain to address future impacts due to climate change or relocation of flood lines so they would not impact the treatment plant. Consideration should also be given during detailed design to maximize the distance between the floodplain and WWTP.

Pursuit of the North Site would avoid the floodplain which is present at the South Site. Indigenous monitor opportunities can be provided as part of the future Stage 2 archaeological assessment on the North Site, to be completed in Detailed Design.

Engagement with relevant approval agencies, Indigenous communities, and landowners to notify them about the EA addendum will occur as required.

1.5.1 Section 16 Order Process

Interested persons may provide written comments to the Township of Southwold for a response using the following contact information:

Aaron VanOorspronk, Director of Infrastructure & Development Services
Township of Southwold
35663 Fingal Line
Fingal, Ontario N0L 1K0
Email: development@southwold.ca
Tel. 519-769-2010
Cell: 519-280-3502

In addition, following the filing of the Notice of Completion a request may be made to the Minister of the Environment, Conservation and Parks under Section 16 of the *EA Act* requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent,



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mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

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

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

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

and

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

Requests should also be sent to the Township of Southwold.

2 Problem & Opportunity Statement

Since the project builds on the recommendations within the Master Servicing Plan, the Problem and Opportunity Statement from that project is included below:

The purpose of *the Talbotville & Ferndale Master Servicing Plan* is to provide an environmentally sensitive and sustainable framework for the provision of municipal services for both existing and future development within the Township. Specifically, the Master Servicing Plan is to address the provision of water, wastewater and stormwater management for existing and future growth areas for the Talbotville and Ferndale settlement areas as defined in the Township's Official Plan. The Master Servicing Plan is to identify which services are to be provided and where, the level or nature of the services that would be appropriate for each area and circumstance, and the mechanism or strategy for the provision or extension of services."



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To further define the problem and opportunities specific to the Talbotville WWTP Class EA, the following statement was developed during the 2016 EA and included in the letters and notices sent to agencies, the public, Indigenous communities, and other identified stakeholders during that project:

Currently, no municipal wastewater collection or treatment infrastructure exists within Talbotville. Existing development within the settlement area is serviced by private on-site septic systems. A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicing Plan. Through the completion of the Master Servicing Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative."

The 2016 Problem Opportunity Statement is modified below to account for the existence of the already built site on the South Site:

A number of wastewater collection and treatment alternatives for Talbotville were developed as part of the Master Servicing Plan. Through the completion of the Master Servicing Plan, the construction of a new municipally owned and operated wastewater treatment plant in Talbotville to service both existing and future development was selected as the preferred alternative. The 2016 EA identified that both the North and South Sites can feasibly be utilized for the WWTP, and the South Site was recommended, however this was contingent on obtaining all required approvals and completion of an Environmental Impact Study (EIS), obtaining Environmental Compliance Approval (ECA), and a Kettle Creek Conservation Authority Section 29 Permit.

Since the EA, a municipal wastewater treatment infrastructure was constructed in Talbotville on the South Site, however the site has experienced operational and access issues, and has limited opportunity for expansion on the existing site. The Township is seeking to revisit the EA North Site to address these issues through this EA Addendum to construct a replacement WWTP.



3 Alternative Solutions

Alternative Solutions were identified and evaluated as part of the *Talbotville & Ferndale Master Servicing Plan* (2015). The Plan considered water, wastewater, and stormwater management system needs within Talbotville and Ferndale in the Township of Southwold. The Plan was completed as a Master Plan, which included Phases 1 and 2 of the Municipal Class Environmental Assessment Process under the Municipal Engineers Association (MEA) document (June 2000, revised 2007 and 2011).

The following wastewater collection and treatment alternatives for Talbotville were developed to address the Problem & Opportunity Statement:

- Alternative T1: Do Nothing
- Alternative T2: Limit Growth: This alternative involved limiting residential growth in the settlement area to only infilling and rounding out existing development. However, long-term growth and development identified the need for a means of conveyance. Limiting growth would also contradict the Township's Official Plan. This alternative does not satisfy the Problem & Opportunity statement.
- Alternative T3: St. Thomas Wastewater Treatment Plant via St. George Street Gravity Sewer: This alternative involved the conveyance of wastewater from Talbotville to the St. Thomas WWTP via the St. George Street Sewer. The EA found that future development in Talbotville (and potential industrial development) would be constrained.
- Alternative T4: St. Thomas Wastewater Treatment Plant via Alternate/New Trunk Sewer: This alternative would require a new sewer that would have quite a significant length. Due to topography, it was likely a forcemain or pumping station would also be required. Numerous water crossings were also noted.
- Alternative T5: New Wastewater Treatment Plant in Talbotville: This alternative would involve construction of a new municipally owned and operated wastewater treatment plant for the Talbotville settlement area to service both existing and future development.
- Alternative T6: Utilize Existing Ford Motor Company Wastewater Treatment Plant: wastewater flows would be conveyed to the existing WWTP that was non-operational at the time of the EA. Since the EA, the WWTP is anticipated to be in use by the Amazon Fulfillment Centre that has been built on the site of the former Ford Plant.

The recommended alternative for wastewater servicing in Talbotville identified within the Master Servicing Plan was the construction of a new wastewater treatment plant - a Schedule C project.



4 Alternative Designs

The 2016 ESR built on the recommendations of the Master Servicing Plan to complete the remaining Phases 3 and 4 of the Municipal Class EA planning process.

Design alternatives were developed to implement the preferred alternative identified within the Master Servicing Plan, which generally involved the selection of the location for the Talbotville WWTP. The magnitude of the net positive and negative effects of each alternative solution were also identified and evaluated. Based on this evaluation, a preliminary preferred option was selected and confirmed based on public, agency and Indigenous community consultation.

The Site Evaluation consisted of a comparative analysis provided for the North Site and South Site for each of the evaluation criteria. There are no changes to the evaluation criteria included in the ESR (Table 9.1, ESR, 2016).

The ESR found that both the North and South Sites could be chosen for the new Talbotville WWTP, provided that appropriate mitigation and compensation measures are implemented with regard to natural environment and minimum distance separation guidelines, and applicable permitting and approvals are received.

A presentation was given to the Township of Southwold's Council (December 14, 2015) which identified significantly lower costs associated with land acquisition and that the elevation of the site made a pumping station unnecessary. Council confirmed that the South Site was their preferred location. Based on the evaluation above and guidance from the Township of Southwold staff and Council, the South Site became the preferred WWTP location in the ESR.

However, this was contingent upon obtaining all required approvals, including but not limited to:

- Completion of an Environmental Impact Study (EIS) in accordance with the Township's Zoning Bylaw and Official Plan
- Environmental Compliance Approval (ECA) for the WWTP from the Ministry of the Environment and Climate Change (now MECP)
- Kettle Creek Conservation Authority Section 28 Permit – O. Reg. 181/06

All treatment options were identified to be technically feasible and provide reliable treatment, as such the appropriateness of each is to be determined in the design phase.

The ESR also provided comments on wastewater treatment technology alternatives. The ESR considered:

- Ability for logical and cost-effective plant expansion
- Ability to meet effluent limits and objectives
- Operational and Maintenance Costs



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- Life cycle costs
- Proven Technology, proof of successful installations within Canada and Southwestern Ontario (similar climate) within the last 10 years

Three technologies were included and described in Section 9.5 of the ESR: Extended Aeration (EA), Sequence Batch Reactor (SBR), and Membrane Bioreactor (MBR). All alternatives presented were identified to be technically feasible and provide reliable treatment and so, the appropriateness of each was to be determined in the preliminary design phase.

4.1 Revised Recommended Design

The Township of Southwold's current WWTP was constructed at the EA preferred location (the South Site in the report), however restrictions for expansion as described in **Section 1.2** limit the expansion potential to less than the EA's contemplated volumes.

The Township is seeking a solution since it is approaching the point where the plant needs to expand to stay ahead of demand, especially considering recent development news in the area, and increased industrial development interest in the Talbotville area.

The Township has concluded that with the current site constraints and potential new development, the North Site is identified as the preferred site. The Township is seeking to relocate the plant to the previously evaluated North Site. The existing WWTP will be transitioned to a sanitary pumping station where feasible or decommissioned once the new WWTP is operational.

A review of the ESR Evaluation Table was conducted (see **Table 1**), highlighting those issues relevant to effluent criteria and technical permitting to highlight those issues that may have changed from the existing.

Table 1: ESR Evaluation Table Changes

Criteria	Issue	Original Text	Revised Version
Social/Cultural	No changes	No changes	No changes
Natural Environment	Floodplain	<p>North Site: Entire site can be situated outside of floodplain areas. The ESR identified that confirmation is needed for floodplain mapping during Detailed Design.</p> <p>South Site: Future expansions may encroach on Regulated Floodplain, requiring approval and permitting from KCCA and potentially earthworks.</p>	<p>North Site: no change</p> <p>South Site: Future expansions encroach on Regulated Floodplain.</p> <p>Further approvals for work in the floodplain are constrained by significant KCCA permitting conditions. These constraints challenge the viability of further expansions at this site.</p>



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Criteria	Issue	Original Text	Revised Version
Technical	MOECC (now MECP) Design Guidelines for Sewage Works (2008)	Ensure that design guidelines are followed where practical. Any legislation or regulations take precedence over the design guidelines and must be adhered to.	No changes
	Ability to achieve current effluent limits	Effluent limits and objectives were the same for the discharge location on the North Site (Gilbert/Auckland Drains) as they were for the South Site (Dodd Creek).	Restrictions for expansion apply to the South Site. The restrictions limit the expansion potential to less than the EA's contemplated volumes. The North Site is preferable to the South Site since it is not within a Significant Groundwater Recharge Area (SGRA).
	MOECC (now MECP) Approvals	ECA must be obtained prior to commencement of construction activities. An approximate timeline for ECA approval is 6-12 months.	No changes
	Regulation Changes	Technology selected should be adaptable so that it is not constrained if future more stringent effluent limits are put in place.	No change – the effluent criteria are the same and are unchanged from the original EA so there are no changes required.



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Criteria	Issue	Original Text	Revised Version
Economic/ Financial	Construction/ Expansion of Plant is Accomplished Using Phased Modules	Should ensure that initial capital investigation is not a “throw away” cost if the next expansion phase deems components of it to be either redundant or undersized. Cost savings do exist to accurately size (or oversize) treatment works initially. Operating costs will increase when operating multiple smaller units in parallel. (both sites)	Should ensure that initial capital investigation is not a “throw away” cost if the next expansion phase deems components of it to be either redundant or undersized. Cost savings do exist to accurately size (or oversize) treatment works initially. Operating costs will increase when operating multiple smaller units in parallel. South Site: restrictions on the site footprint make the South Site difficult to construct multiple units on this site. North Site: This site has much less constraints than the South site and provides additional opportunities for placement of expansion units, if required

The revised Alternative and Preferred Solution will include the following revisions:

- Construct a WWTP at the North Site, subject to completion of an EIS, obtaining MECP approvals, and a Section 28 KCCA Permit under O. Reg. 181/06

The revised recommended solution for the Talbotville WWTP is outlined in **Figure 2**.





Figure 2: Revised Recommended Solution



5 Review of Existing Conditions, Environmental Impacts and Proposed Mitigation

There has not been a significant change to the background conditions presented in the 2015 Master Servicing Plan or the 2016 ESR. The following section identifies the policies and conditions that *have* changed since the previous Master Plan.

5.1 Planning Policy and Municipal Guidelines / Standards Review

5.1.1 Provincial Policy Statement

The *Provincial Policy Statement (PPS)* (2020), issued under Section 3 of the *Planning Act*, sets a policy foundation for regulating the development and use of land. It provides direction on matters of provincial interest and supports the enhancement of the quality of life for all citizens of Ontario, while still maintaining environmental integrity. In accordance with Section 3 of the *Planning Act*, decisions affecting planning matters shall have regard for the PPS. The PPS establishes a framework to build strong communities while ensuring development patterns are efficient and optimize the use of land, resources, and public investment in infrastructure.

Policies relevant to water and wastewater infrastructure include the requirement for infrastructure to be provided in a coordinated, efficient, and cost-effective manner that considers impacts from climate change while accommodating projected needs (Policy 1.6.1). These systems are meant to be sustainable, feasible, financially viable, in compliance with all regulatory requirements, and integrated with land use considerations across all stages of the planning process (Policy 1.6.6). The service shall promote the efficient use and optimization of existing services, ensure the systems are reliable, promote efficiency, and integrate land use considerations throughout the process.

A new PPS (2023) has been provided for review by the Government of Ontario, however it is not yet in affect. Information regarding the PPS is provided below.

The draft *Provincial Policy Statement (PPS 2023)* is anticipated to be issued under Section 3 of the *Planning Act*. Section 3 of the Act states decisions affecting planning matters “shall be consistent with” the PPS. The consistency of the proposed improvements (defined as “infrastructure” in the PPS) with the relevant *Sewage, Water and Stormwater* in Section 3.6 of the PPS is summarized as follows:

Planning for sewage and water services shall:

- a) accommodate forecasted growth in a manner that promotes the efficient use and optimization of existing: municipal sewage services and municipal water services; and existing private communal sewage services and private communal water services.



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- b) ensure that these systems are provided in a manner that:
 - 1. can be sustained by the water resources upon which such services rely,
 - 2. is feasible and financially viable over their lifecycle,
 - 3. protects human health and safety, and the natural environment including the quality and quantity of water; and
 - 4. comprehensive municipal planning for these services, where applicable
- c) promote water and energy conservation and water use efficiency;
- d) integrate servicing and land use considerations at all stages of the planning process; and
- e) be in accordance with the servicing hierarchy outlined through policies 3.6.2, 3.6.3, 3.6.4, and 3.6.5 of the PPS; and
- f) integrate with source protection planning

For clarity, where municipal sewage services and municipal water services are not available, planned or feasible, private communal systems are the preferred form of services for multi-unit/lots or development to support protection of the environment and minimize potential risks to human health and safety. Where those services are not available or private communal systems are not available planned or feasible, individual on-site sewage or water services may be used provided that site conditions are suitable for the long-term provision of such services with no negative impacts.

The preferred alternatives and supporting recommendations will meet the objectives of the PPS by providing for infrastructure that is appropriate to address lands designated for future development within identified settlement areas, protects the natural environment and protects public health and safety.

5.2 Natural Environment

As part of the Municipal Class EA process, a review of natural heritage features was undertaken in the 2016 EA, which built on the inventory of the natural environment in the Master Servicing Plan. The natural environment review characterized the significance and sensitivity of the natural features in the study area, identified potential environmental effects and recommended appropriate measures to avoid or minimize potential negative impacts on the surrounding environment.

The review was conducted through a desktop review of available federal and provincial databases and is intended to provide a general framework for future projects. The desktop review was also supplemented by site investigations on November 26, 2015 to confirm the presence and location of Natural Heritage Features, identify potential Species at Risk (SAR) habitat, and to identify additional constraints at the two potential sites.

Two floral SAR records were identified near the south site, while none were present at the North Site. Screening in 2015 identified no suitable SAR faunal habitat at the North Site with the exception of Barn Swallow. This species has since been down-listed and is no longer considered a SAR species.



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KCCA regulated areas and hazard lands are present at both sites. The existing conditions identified in the 2016 regulated areas and hazard lands remain unchanged (**Appendix B**). This was also confirmed through the 2021 Township of Southwold Official Plan Mapping currently in effect (Southwold Official Plan, Schedule 2 – Natural Heritage Features, Schedule 3 Natural Hazards, 2021), with the exception that the South Site now includes a WWTP. The North Site is an agricultural property within the Settlement Area and is also designed for Industrial Land Use (Southwold OP, Schedule 4a).

Section 7.5.7 of the ESR identified that additional field investigations were conducted in 2016 (Leonard and Associates in Landscape Architecture (LAI LA) in conjunction with the EIS for the adjacent residential development at 10065 Gore Road) which confirmed that none of the protected species noted in the ESR were likely to occur within the South Site.

Prior to construction, a field investigation is recommended at the North Site to confirm the presence of migratory birds, Species at Risk (SAR) or Significant Wildlife Habitat. Mitigation measures identified in the 2016 ESR, including but not limited to the use of timing windows to avoid periods where species may be present, would also be confirmed at that time. If proposed works may endanger SAR habitat or Significant Wildlife Habitat, a permit will be required under the *Species at Risk Act/Endangered Species Act*.

5.3 Fish and Fish Habitat

The ESR identified that the study area is within the Dodd Creek sub-watershed area, and that Dodd Creek is Kettle Creek's largest tributary. The North Site is located immediately to the north of the Gilbert Drain, which flows into the Auckland Drain immediately east of the site.

DFO Distribution of records of SAR did not identify SAR at the time of the report. The ESR recommended that additional review of updated information during the permitting process may require field investigations to determine the presence or absence of SAR species. A field investigation is recommended for the North Site to determine whether the construction or operation of the site would result in a Harmful Alteration, Disruption and Destruction of Fish Habitat (HADD).

5.4 Assimilative Capacity Study

An Assimilative Capacity Study occurred for the Talbotville WWTP Class EA which included Fall 2014 sampling, and Spring and Summer Sampling in 2015 at the Auckland Drain (outlet associated with the North Site) and Dodd Creek (outlet associated with Dodd Creek). Results of the ACS are presented in Section 8.0 of the ESR.

Effluent limits and objectives were the same for the discharge location on the North Site (Gilbert/Auckland Drains) as they were for the South Site (Dodd Creek).

5.5 Drinking Water Source Protection Plan

Drinking Water Source Protection represents the first barrier in the protection of drinking water. Protecting surface and ground water from becoming contaminated or overused will ensure a sufficient supply of clean, safe drinking water. The *Clean Water Act 2006* (CWA) is intended to protect existing and future sources of drinking water as part of the government's overall commitment to protecting human health and



the environment. The CWA sets out a framework for source protection planning on a watershed basis with Source Protection Areas established based on the watershed boundaries of Ontario's 36 Conservation Authorities.

The Township of Southwold is located within the Kettle Creek Source Protection Plan area, within the Lake Erie Source Protection region. Areas within the Source Protection Region are subject to the policies under the Source Protection Plan that was enacted under the CWA.

Significant Groundwater Recharge Area (SGRAs) are areas considered significant in maintaining the water level within an aquifer through the infiltration of surface water (rain and snow). Highly Vulnerable Aquifers (HVAs) are aquifers that are considered easily affected by both human and natural processes.

The 2016 ESR identified an approximate SGRA that includes the South Site, with a vulnerability score of 2. No SGRA was present for the North Site. No SGRAs or other vulnerable areas are present on the Policy Map Viewer on the Lake Erie Source Protection Region mapping as of 2024.

Relocation of the WWTP to the North Site is anticipated to result in less potential impacts to groundwater than the existing as it avoids the approximate SGRA.

5.5.1 Vulnerable Areas Policies

Within vulnerable areas, policies under the *Clean Water Act* mandate the management and, in some cases, prohibit of certain land use activities, from fuel storage, pesticide use and storage, agricultural activities, creation/operation of municipal infrastructure, and many more. Municipalities and other levels of government are responsible for implementing policies of SPP through Official Plan and Zoning Bylaw updates, Risk Management Plans, through the appointment of a Risk Management Officer (RMO), and through prescribed instruments (such as an Environmental Compliance Approval (ECA) issued by the MECP for municipal infrastructure activities). RMOs are responsible for reviewing new development applications, planning, or building permits that may impact SWP areas, and for establishing legally binding Risk Management Plans with properties where activities identified as significant threat activities occur. The MECP implements the policies of the SPP by requiring supplementary source protection reporting and design and operational requirements as part of an ECA.

5.6 Cultural Environment

5.6.1 Archaeological Resources

A Stage 1 & 2 Archaeological Assessment was completed for the South Site as part of a neighbouring development (10065 Gore Road). The 2016 EA identified that if the North Site is chosen as the preferred site, a Stage 1 Archaeological Assessment (at minimum) will be required prior to detailed design based on proximity of the location of a water source (Dodd Creek/ Auckland Drain).

To meet the requirements of the EA by pursuing the North Site, a Stage 1 Archaeological Assessment was completed for the North Site. The report identified that there is archaeological potential within the North Site given the agricultural nature of the property and its proximity to a watercourse along the south



limits. A Stage 2 Archaeological Assessment was recommended which should occur during Detailed Design prior to construction.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with Ontario Regulation 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, 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.

5.6.2 Built Heritage Resources and Cultural Heritage Landscapes

The MCM Criteria for Evaluation of Built Heritage and Cultural Heritage Landscapes Checklist was completed as part of the 2016 ESR, and both locations were deemed to be of low potential for built heritage or cultural heritage landscapes. No change is required by selecting the North Site.

Where the potential for impact exists, recommendations for more detailed assessments will be identified during detailed design.

6 Project Implementation

The implementation of the recommended WWTP at the North Site in this EA Addendum will generally be triggered by the following:

- Infrastructure failure or works required immediately to address public health/safety risks
- Whether the WWTP is determined to be necessary as part of development applications to allow development to proceed
- The availability of municipal funding
- The ability to secure Provincial and/or Federal level funding (i.e., future infrastructure funding programs, Gas Tax programs, etc.)
- Permit Requirements
- Improvements that can be coordinated with required road maintenance or other capital projects



Talbotville Wastewater Treatment Plant EA Addendum

Approvals will be required prior to the construction of any WWTP which include completion of an EIS in accordance with the Township Official Plan and obtaining MECP approvals to operate the WWTP. This additional investigation should occur in Detailed Design for the terrestrial and aquatic environments at the North Site.

A Section 28 permit will also be required from the Kettle Creek Conservation Authority (under O. Reg. 181/06) for any modifications to existing outlets, or for the installation of new outlets within Conservation Authority regulated lands. Permitting and/or Registration will be required for any activities that have the potential for disruption to habitat for Endangered or Threatened Species under the *Endangered Species Act*, administered through MECP.

6.1 Proposed Environmental Mitigation

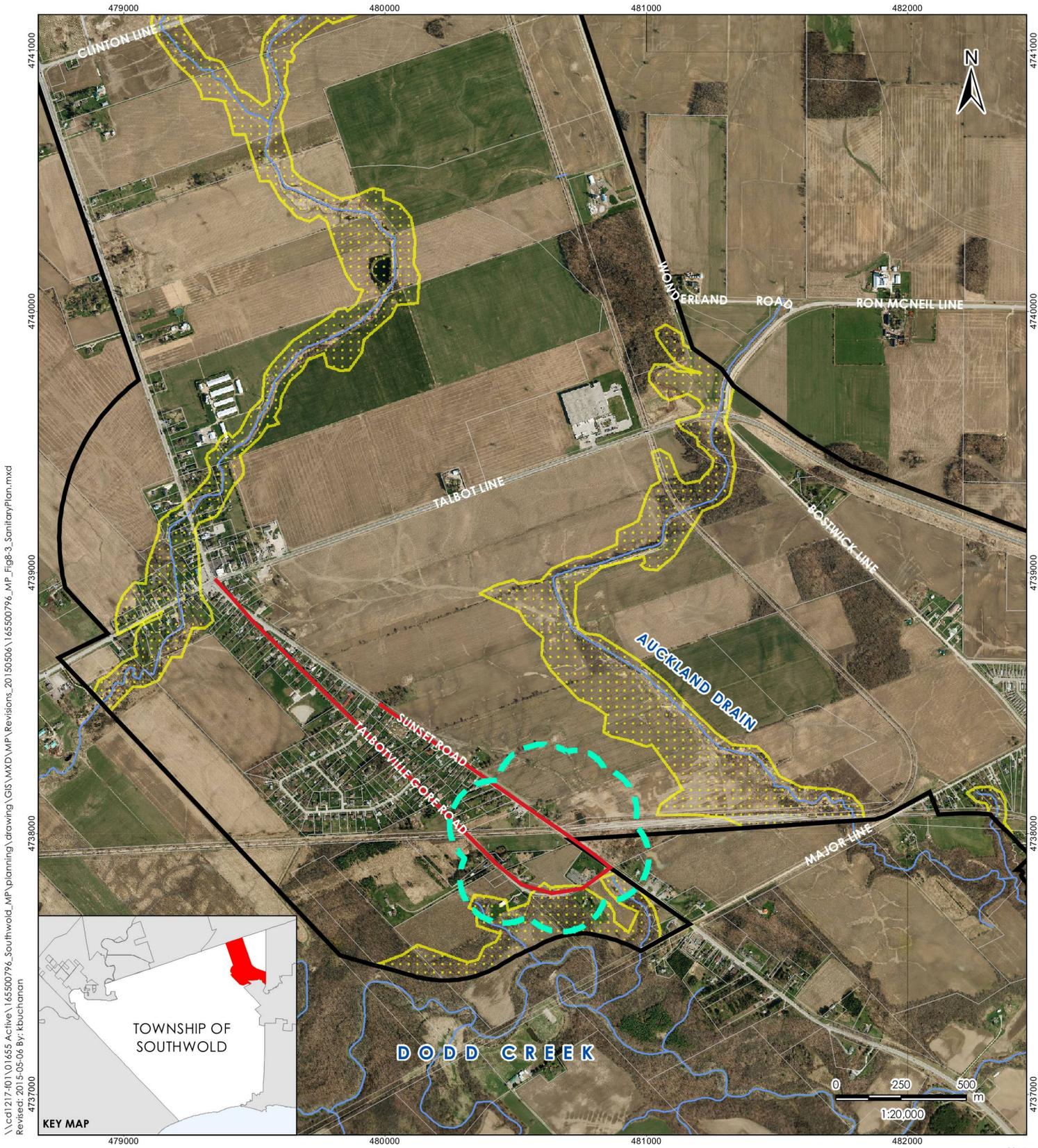
The Environmental Mitigation and Recommendations outlined in the 2016 ESR remain relevant to this Addendum (see **Appendix A**). References to MNRF with respect to SAR mitigation should instead be read as MECP as the latter is now the responsible agency for SAR policies. Assuming appropriate mitigation measures are followed, these impacts will be preventable or minimal to the surrounding environment.

7 Closing

Provided that all appropriate environmental and engineering permitting, and approvals are obtained, the Municipality may proceed with detailed design and implementation (Phase 5).



**Appendix A: Environmental Study Report Figures, Evaluation
and Mitigation, 2016**



\\cd\1217-401\01655 Active\165500796_Southwold_MP\planning\drawing\GIS\MXD\MP_Revisions_20150506\165500796_MP_Fig8-3_SanitaryPlan.mxd
 Revised: 2015-05-06 By: kbuchanan

May 2015
165500796



- Legend**
- Settlement Area/Study Area
 - Parcel
 - Approximate Regulated Area
 - Proposed WWTP Location
 - Proposed Gravity Sewer

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. 2010 orthoimagery © First Base Solutions, 2015.

Client/Project
 Township of Southwold
 Talbotville WWTP
 Class EA

Figure No.
1.2

Title
**General WWTP
 Location as Identified
 in the Master Servicing
 Plan**



December 2015
165500796



Legend

- Potential WWTP Site
- Property Line (approx.)
- Municipal Boundary

Client/Project

Township of Southwold
Talbotville WWTP
Class EA

Figure No.

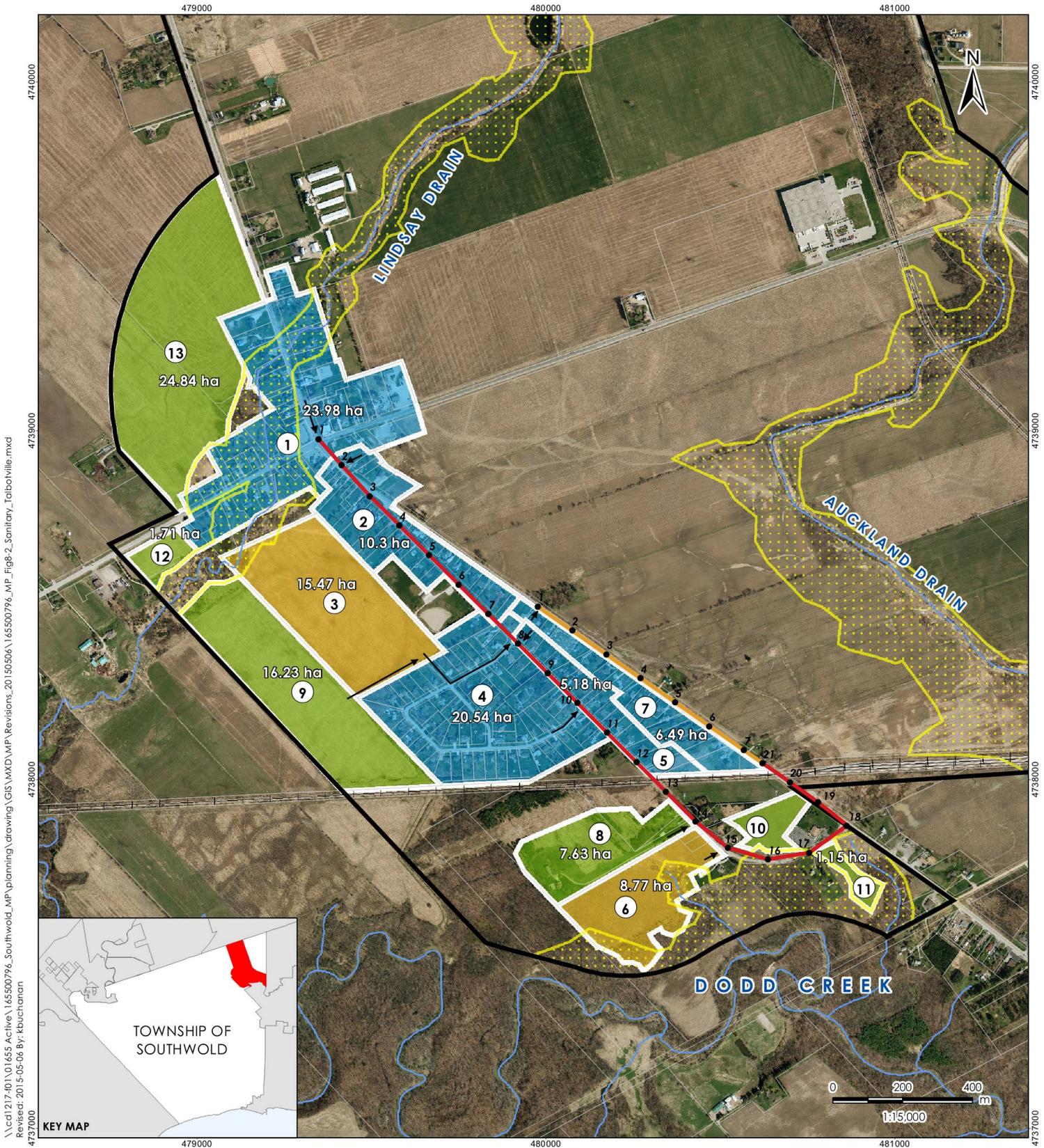
1.3

Title

**Study Area -
Proposed WWTP
Site Alternatives**

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. 2010 orthoimagery © First Base Solutions, 2015. The image has been edited to remove an agricultural pond which no longer exists.



\\cd\1217-40\01655 Active\165500796_Southwold_MP\planning_drawing_GIS\MXD\MP_Revisions_20150506\165500796_MP_Fig8-2_Sanitary_Talbotville.mxd
 Revised: 2015-05-06 By: kbuchanan

May 2015
 165500796



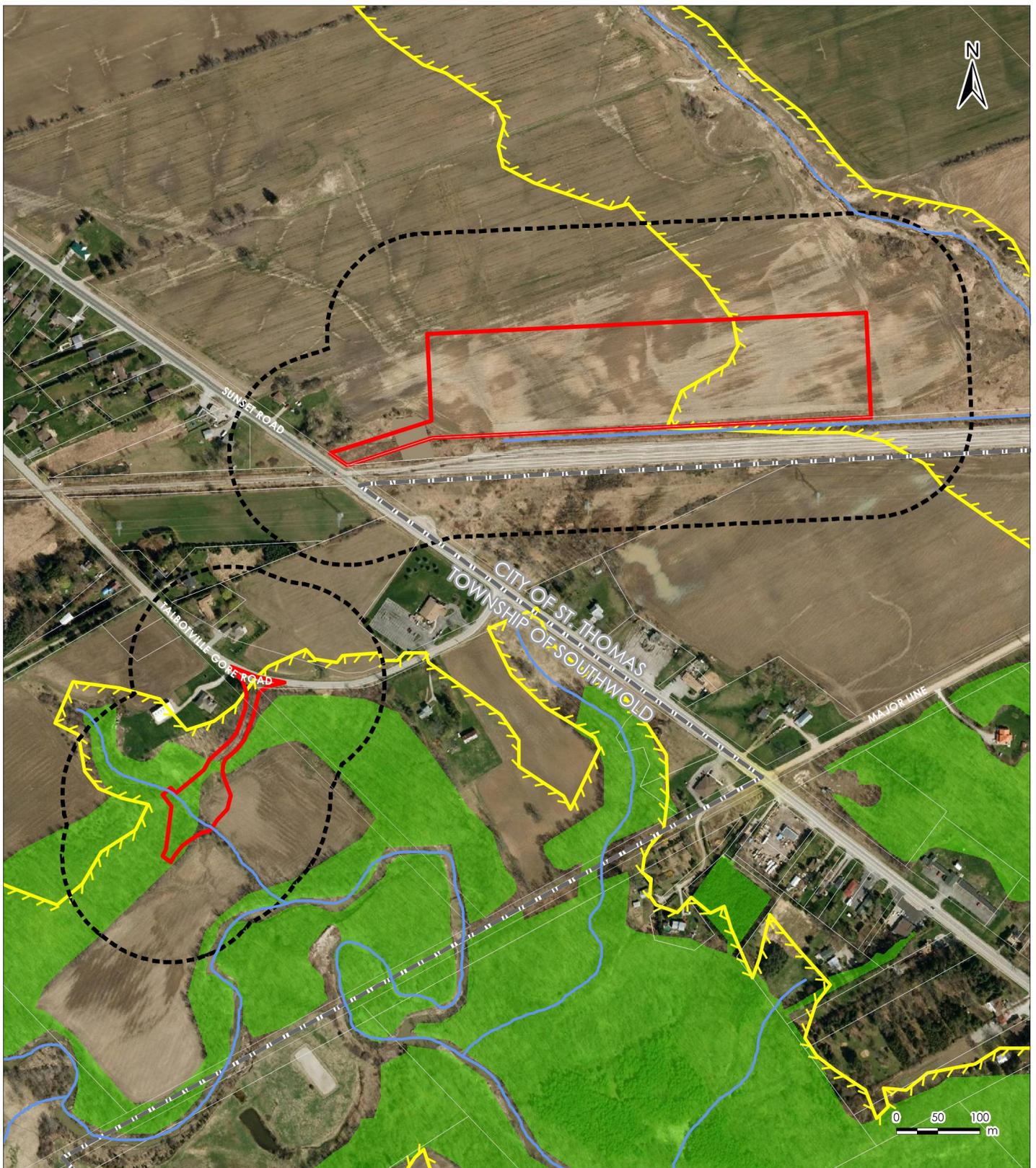
- Legend**
- Settlement Area/Study Area
 - Parcel
 - Approximate Regulated Area
 - Flow Arrow
 - Proposed Sanitary Manhole
- Proposed Sanitary Sewer**
- Sunset Rd. Trunk
 - Talbotville Gore Rd. Trunk
- Proposed Sanitary**
- Existing Development
 - Proposed Development
 - Future Development

Client/Project
 Township of Southwold
 Talbotville WWTP
 Class EA

Figure No.
3.1

Title
**Talbotville Sanitary
 Catchments**

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
 3. 2010 orthoimagery © First Base Solutions, 2015.



February 2016
165500796



Notes

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2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. 2010 orthoimagery © First Base Solutions, 2015. The image has been edited to remove an agricultural pond which no longer exists.

Legend

NOTE

- Potential WWTP Site
- 120 Metre Study Area
- Regulated Limit (approx.)
- Watercourse
- Wooded Area
- Property Line (approx.)
- Municipal Boundary

Client/Project

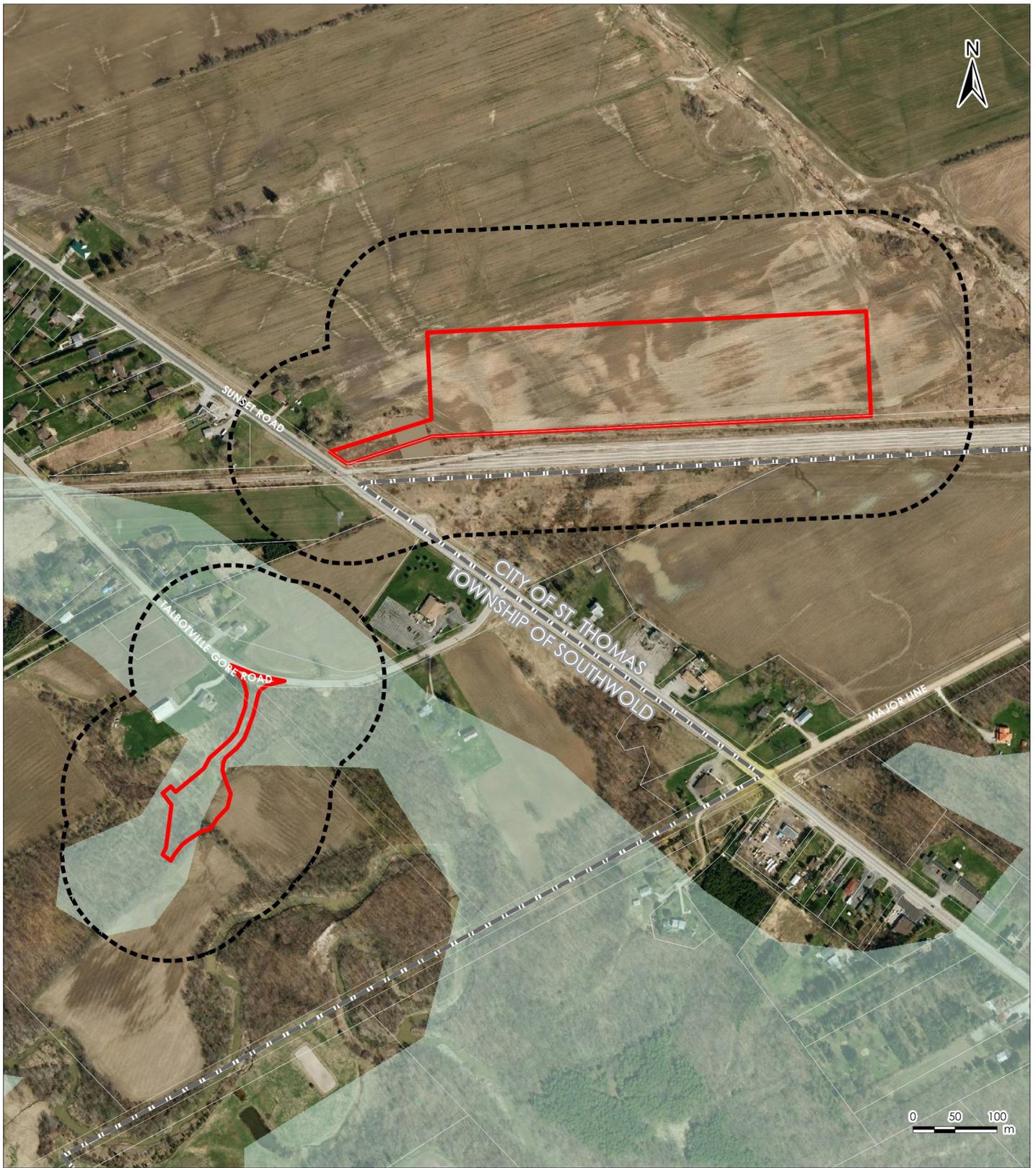
Township of Southwold
Talbotville WWTP
Class EA

Figure No.

7.1

Title

**Natural Heritage
Features**



February 2016
165500796



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. 2010 orthoimagery © First Base Solutions, 2015. The image has been edited to remove an agricultural pond which no longer exists.

Legend

NOTE

- Potential WWTP Site
- 120 Metre Study Area
- Watercourse
- Approximate Significant Groundwater Recharge Area
- Property Line (approx.)
- Municipal Boundary

Client/Project

Township of Southwold
Talbotville WWTP
Class EA

Figure No.

7.2

Title

**Drinking Water
Source Protection
Vulnerable Areas**

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

CRITERIA	ISSUE	RATIONALE
	Site Access	Proper access routes on site required for maintenance vehicles, chemical delivery, operations personnel, trucking of sludge (includes entry and exit from site)
	Topography	Ability to construct on site with minimal earth moving requirements or close stability issues
	Geotechnical	Ensure that bearing capacity of soil allows for construction of plant
	MOECC Approvals	Environmental Compliance Approval (ECA) Application
	KCCA Approvals	Construction with/adjacent to KCCA Regulated Lands
	Constructability	Ease of construction on site dependent on existing site conditions
ECONOMIC / FINANCIAL	Initial Capital Costs	Capital costs required to construct treatment plant
	Property Acquisition Costs	Costs associated with required property acquisitions, since no Municipally owned land is available
	Operation and Maintenance Costs	Operation and maintenance costs, including labour, power, chemicals, sludge disposal, equipment replacement
	Lifecycle Costs	Costs incurred by the Township to replace equipment dependent on age and condition
	Modular Plant Design	Costs associated with the expansion of plant accomplished using phased modules
	Regulation Changes	Costs associated with upgrades triggered by more stringent effluent quality criteria set by MOECC

9.2 EVALUATION OF ALTERNATIVES

The opportunities and constraints for each WWTP location were evaluated based on the criteria listed above. The identification of these opportunities and constraints are listed in Table 9.2, Table 9.3, Table 9.4, and Table 9.5 below.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Table 9.2: Site Evaluation Criteria (Economic)

Issue	Description	North Site	South Site
Capital Costs	Capital cost required to construct treatment plant.	Slight reduction in capital costs due to ease of constructability and minimal site constraints. Cost dependent on technology chosen and site layout.	Constructability issues and site constraints may increase construction costs dependent on technology chosen and site layout.
O & M	Operation and maintenance cost (includes labour, power, chemicals, sludge disposal, equipment replacement).	Operation and maintenance costs would be similar for both sites.	Operation and maintenance costs would be similar for both sites.
Property Acquisition	Property acquisition would be required as no municipally owned property is available.	Cost of property acquisition unknown as not yet discussed with landowner.	Subject property would be donated by the developer to the Township at no cost.
Lifecycle Costs	Costs incurred by the Township to replace equipment dependent on age and condition, higher quality equipment is preferred which may cost more upfront but will cost less to operate and maintain.	Type of treatment technology selected during predesign would determine life cycle costs.	Type of treatment technology selected during predesign would determine life cycle costs.
Modular Plant Design	Construction / expansion of plant is accomplished using phased modules.	Should ensure that initial capital investment is not a "throw away" cost if the next expansion phase deems components of it to be either redundant or undersized. Cost savings do exist to accurately size (or oversize) treatment works initially. Operating costs will increase when operating multiple smaller units in parallel.	Should ensure that initial capital investment is not a "throw away" cost if the next expansion phase deems components of it to be either redundant or undersized. Cost savings do exist to accurately size (or oversize) treatment works initially. Operating costs will increase when operating multiple smaller units in parallel.
Regulation Changes	More stringent effluent quality criteria would trigger upgrades and higher costs.	Technology selected should be adaptable so that it is not constrained if future more stringent effluent limits are put into place.	Technology selected should be adaptable so that it is not constrained if future more stringent effluent limits are put into place.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Table 9.3: Site Evaluation Criteria (Technical)

Issue	Description	North Site	South Site
Township Design Specifications	Design and Construction Standards for the Township of Southwold (2012).	Design and Construction Standards for the Township of Southwold shall be adhered to for the design and construction of the plant.	Design and Construction Standards for the Township of Southwold shall be adhered to for the design and construction of the plant.
MOECC Guidelines	MOECC Guideline D-2 (Compatibility between Sewage Treatment and Sensitive Land Use).	Site is currently zoned industrial and would be set back from existing or planned development, ensuring that an adequate separation distance exists >100 m.	Site is situated < 100 m from adjacent planned residential development. Township should ensure that odour and noise mitigation measures are in place that are acceptable to the MOECC.
MOECC Guidelines	MOECC Design Guidelines for Sewage Works (2008).	Ensure that design guidelines are followed where practical. Any legislation or regulations take precedence over the design guidelines and must be adhered to.	Ensure that design guidelines are followed where practical. Any legislation or regulations take precedence over the design guidelines and must be adhered to.
Modular Plant Design	Construction / expansion of plant is accomplished using phased modules.	Diversion (flow splitting) of flows from the inlet sewer to each module can create operational issues.	Diversion (flow splitting) of flows from the inlet sewer to each module can create operational issues.
Plant Expansion	Area required for logical and cost effective plant expansion.	Large, flat area to easily provide room for future plant expansion.	Limited space available for future plant expansion, constrained by steep wooded slopes to the north and KCCA regulated limit to south.
Effluent Parameters	Ability to achieve current effluent limits.	Effluent limits and objectives developed through the ACS were the same for the discharge location on the north site (Gilbert/Auckland) as they were for the south site.	Effluent limits and objectives developed through the ACS were the same for the discharge location on the south site (Dodd Creek) as they were for the north site.
Effluent Parameters	Ability to achieve current effluent limits.	Technology selected should be adaptable so that it is not constrained if future more stringent effluent limits are put into place.	Technology selected should be adaptable so that it is not constrained if future more stringent effluent limits are put into place.
Operator Requirements	Level of certification required by operators to meet plant	Ensure that operating authority or staff has the appropriate level of certification to	Ensure that operating authority or staff has the appropriate level of certification to

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Issue	Description	North Site	South Site
	classification.	operate plant.	operate plant.
Maintenance Requirements	Frequency and extent of maintenance activities.	Ensure that operating authority or staff complete maintenance as required to prolong the life of the treatment plant. Technology selected should require minimal maintenance.	Ensure that operating authority or staff complete maintenance as required to prolong the life of the treatment plant. Technology selected should require minimal maintenance.
Hydro	Power consumption and availability of hydro service.	Ensure that required hydro service is available to supply treatment plant with sufficient power. Treatment options should evaluate power consumption requirements to minimize cost to the Township.	Ensure that required hydro service is available to supply treatment plant with sufficient power. Treatment options should evaluate power consumption requirements to minimize cost to the Township.
Lifespan of Plant	Select technology which maximizes lifespan of plant to minimize costs to Township.	Materials and equipment should be evaluated such that the Township is not burdened by replacement costs prior to end of design life.	Materials and equipment should be evaluated such that the Township is not burdened by replacement costs prior to end of design life. Equipment and materials should be selected based on their performance and investment cost over the lifetime of the plant.
Additional Technology / Implementation Considerations	Determine which components are included for a certain technology and which are not. Proven technology, proof of successful installations within Canada and Southwestern Ontario in similar climatic and soil conditions. Length of warranties, service and support locations.	Township should ensure all equipment, materials, installation costs, etc. are accounted for during preliminary design. Technology should be selected during preliminary design which limits risk to Township. Ensure that technology selected has sufficient warranty period to protect the Township from defective equipment and nearby service and support locations.	Township should ensure all equipment, materials, installation costs, etc. are accounted for during preliminary design. Technology should be selected during preliminary design which limits risk to Township. Ensure that technology selected has sufficient warranty period to protect the Township from defective equipment and nearby service and support locations.
Gravity vs. Pumping	Requirement for pumping station and forcemain.	Trunk sanitary sewer could flow to site via gravity. Would require on-site pumping station to lift flow into headworks.	Trunk gravity sewer could flow to site via gravity. Pumping station not required.
Depth of Trunk Sewers	Depth of trunk sewer would increase cost of installation, could also impose pumping requirements at headworks of plant.	Longer trunk sewer length required would result in deeper depth of pipe.	Shorter trunk sewer length required would result in shallower depth of pipe.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Issue	Description	North Site	South Site
Outfall Location	Effluent discharge location.	Outfall to Gilbert Drain.	Outfall to Dodd Creek.
Site Access	Proper access routes on site required for maintenance vehicles, chemical delivery, operations personnel, trucking of sludge (includes entry and exit from site) and access for future expansion works.	No apparent issues with access to site.	Site layout must ensure that access roads are designed with adequate width and do not exceed maximum slope. Layout must allow for truck access and maneuvering and consider future expansion needs.
Topography / Constructability	Ability to construct on site with minimal earth moving requirements or slope stability issues.	No apparent issues with ability to construct on site.	Large variation in topography across site. Earth works and/or retaining wall may be required.
Geotechnical	Ensure that bearing capacity of soil allows for construction of plant.	Geotechnical investigation would need to be undertaken for this site.	Geotechnical investigation report should be referenced. Additional boreholes may be necessary depending on site layout.
MOECC Approvals	Environmental Compliance Approval (ECA) Application.	ECA must be obtained prior to commencement of construction activities. Approximate timeline for ECA approval is 6-12 months.	ECA must be obtained prior to commencement of construction activities. Approximate timeline for ECA approval is 6-12 months.
KCCA Approvals	Construction of a wastewater plant should not be located within the regulatory flood hazard limit.	Construction will not impact regulatory flood hazard limits.	Permission should be obtained from KCCA for minor alterations to the regulatory flood hazard limit to allow for the construction of the plant to extend into the current floodplain. This would allow for greater flexibility to locate treatment works on site. Approval will be required prior to issuance of ECA.
Constructability	Ease of construction on site dependent on existing site conditions.	Minimal constraints to constructability on site.	Moderate constraints (topography, regulated limits, etc.) exist on site, design of site must consider and mitigate these constraints.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Table 9.4: Site Evaluation Criteria (Natural Environment)

Issue	Description	North Site	South Site
Floodplain Impact / Policy	Impacts to surrounding floodplain areas.	Entire site can be situated outside of floodplain (confirmation needed for floodplain mapping).	Future expansions may encroach on Regulated Floodplain, requiring approval and permitting from KCCA and potential earthworks.
Erosion and Sedimentation Impacts	Impacts and mitigation measures for erosion and sedimentation downstream.	Minimal erosion concerns.	Erosion mitigation measures required since site is situated adjacent to Dodd Creek floodplain.
Aquatic Habitats	Reduction or deterioration of habitat including potential SAR habitat. Effects on contamination on aquatic life.	No anticipated impacts to aquatic habitats or species at risk.	No anticipated impacts to aquatic habitats or species at risk.
Terrestrial Habitats	Reduction or deterioration of habitat including potential SAR habitat.	No anticipated impacts to terrestrial habitats (field currently utilized for row corn) or species at risk.	Some tree clearing/vegetation removal required. Potential for habitats for species at risk and plant species at risk requiring additional investigation/surveys and mitigation/compensation measures.
Migratory/Other Birds	Impacts to seasonal concentration areas or breeding bird habitat.	Area not currently treed. No impacts to bird habitat.	Some tree clearing required. Additional investigation needed to determine impact to potential bird habitats/seasonal concentration areas.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Phase 3 – Design Alternatives

Table 9.5: Site Evaluation Criteria (Social / Cultural)

Issue	Description	North Site	South Site
Impact to Adjacent Land Uses / Public Health and Wellbeing	Potential impacts to adjacent land uses, including requirements for minimum distance separation for sensitive land uses (MOECC Guideline D-2). Potential nuisance impacts including noise from operating equipment, odour, etc.	Site is located within Industrial land designation, no anticipated impacts to adjacent land uses. Appropriate noise and odour mitigation measures to be implemented.	Site is less than the recommended 100 m from residential land uses. MOECC must be consulted to determine required separation distance/additional mitigation measures.
Cultural Heritage / Archaeological Resources	Disruption of site having significant historical, architectural, or archaeological value.	Site within disturbed area (agricultural/rail line). Low potential for disruption to archaeological/cultural heritage resources.	Low potential for disruption to archaeological/cultural heritage resources.
Planning Policies – Official Plan and Provincial Policy Statement	Conforms to the Township's Official Plan - OP, and Provincial Policy Statement – PPS (2014).	Located within Industrial Land Use Designation (Schedule A-1): eastern portion of site may touch upon Hazard Lands (Schedule B-1). Development must conform to policies within Section 2.3 of the Official Plan, which may include the implementation of flood proofing measures to the satisfaction of KCCA. No significant natural heritage features are identified on Schedule B. In compliance with PPS.	Located within Residential Land Use Designation (Schedule A-1), and Hazard Lands (Schedule B-1). Development must conform to policies within Section 2.3 of the Official Plan, which may include the implementation of flood proofing measures to the satisfaction of KCCA. Woodlands above and below 4 hectares are identified on Schedule B and is subject to an Environmental Impact Statement (EIS). Significance of natural features to be determined by EIS for compliance with PPS.
Planning Policies – Zoning Bylaw	Conforms to the Township's Zoning Bylaw.	Zoned as CM1 –Commercial Industrial. May be subject to a zoning amendment.	Zoned as Residential and Natural Area and Adjacent Lands. Subject to an EIS, and Zoning Bylaw amendment.
Concerns from Aboriginal Communities	Land Claims / Treaty Rights.	No concerns expressed to-date, will continue consultation throughout project.	No concerns expressed to-date, will continue consultation throughout project.



POSITION AND LAYOUT TO BE DETERMINED

TOWNSHIP OF SOUTHWOLD
CITY OF ST. THOMAS

SUNSET ROAD

TALBOTVILLE GORE ROAD



December 2015
165500796



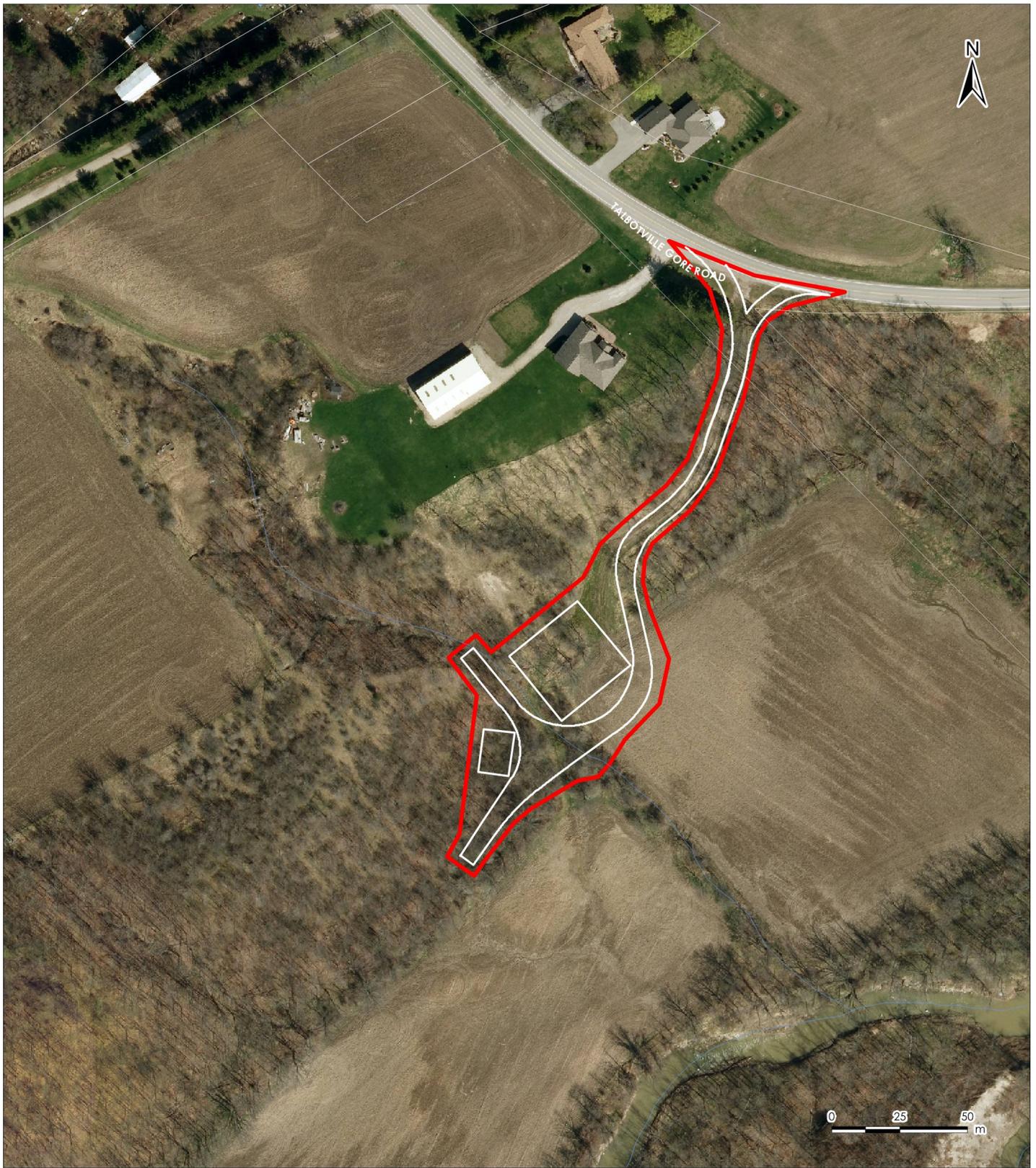
- Legend**
- Potential WWTP Site
 - Watercourse
 - Property Line (approx.)
 - Municipal Boundary

- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
 3. 2010 orthoimagery © First Base Solutions, 2015. The image has been edited to remove an agricultural pond which no longer exists.

Client/Project
Township of Southwold
Talbotville WWTP
Class EA

Figure No.
9.1

Title
North Site - Possible WWTP Configuration



December 2015
165500796



Legend

- Potential WWTP Site
- Watercourse
- Property Line (approx.)
- Municipal Boundary

Client/Project

Township of Southwold
Talbotville WWTP
Class EA

Figure No.

9.2

Title

**South Site -
Possible WWTP
Configuration**

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. WWTF layout from Ricor Engineering Ltd. (November 2015).
3. Base Features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2015.
4. 2010 orthoimagery © First Base Solutions, 2015.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Summary of Cost Opinions

Table 10.2: Recommended Mitigation and Enhancement Measures

Potential Impact	Typical Recommended Mitigation and Enhancement Measures
Aquatic Habitat, Fisheries and Water Quality	
Direct loss, alteration, or disruption of fish habitat	<ul style="list-style-type: none"> • Ensure sufficient fish passage is provided through all in-water works. • Restore vegetation and aquatic habitat (substrate) to pre-construction condition (or better), ensuring that any habitat features (pools, riffles, structure) are restored or enhanced. • Any Harmful Alteration, Disruption or Destruction (HADD) of fish habitat that may result from construction of the proposed WWTP will require prior authorization from DFO. A compensation plan will be required for review and approval and should be discussed with KCCA staff on behalf of DFO. • Opportunities to enhance riparian vegetation through the planting of other hanging grasses, shrubs and trees will improve stream cover, reduce temperature impacts, and provide allochthonous inputs (food source for various fish species).
Increased turbidity and siltation in downstream areas resulting in "smothered" plants and animals due to the deposition of silt and increased turbidity of surface watercourses	<ul style="list-style-type: none"> • Ensure enhanced erosion control measures are installed and maintained throughout all phases of construction to protect exposed surfaces, control run-off and minimize the deposition of silt or suspended sediments within downstream habitats. • Worksite isolation and dewatering plans should be prepared to identify appropriate isolation methods, siltation controls and dewatering measures to be implemented. • Any pumped water resulting from dewatering activities should be discharged to settling areas or through filter media before entering the surface water bodies. • Utilize suitable backfill material along banks and footings. • Stage construction activity to minimize the frequency and duration of any in-water work, as much as feasible. • Re-vegetate all disturbed areas as soon as possible following disturbance to stabilize the area and minimize erosion potential. • Effective monitoring and reporting is required.
Impacts on species at risk	<ul style="list-style-type: none"> • There is low potential for impacts to aquatic species at risk during construction; however, the following measures should be

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Summary of Cost Opinions

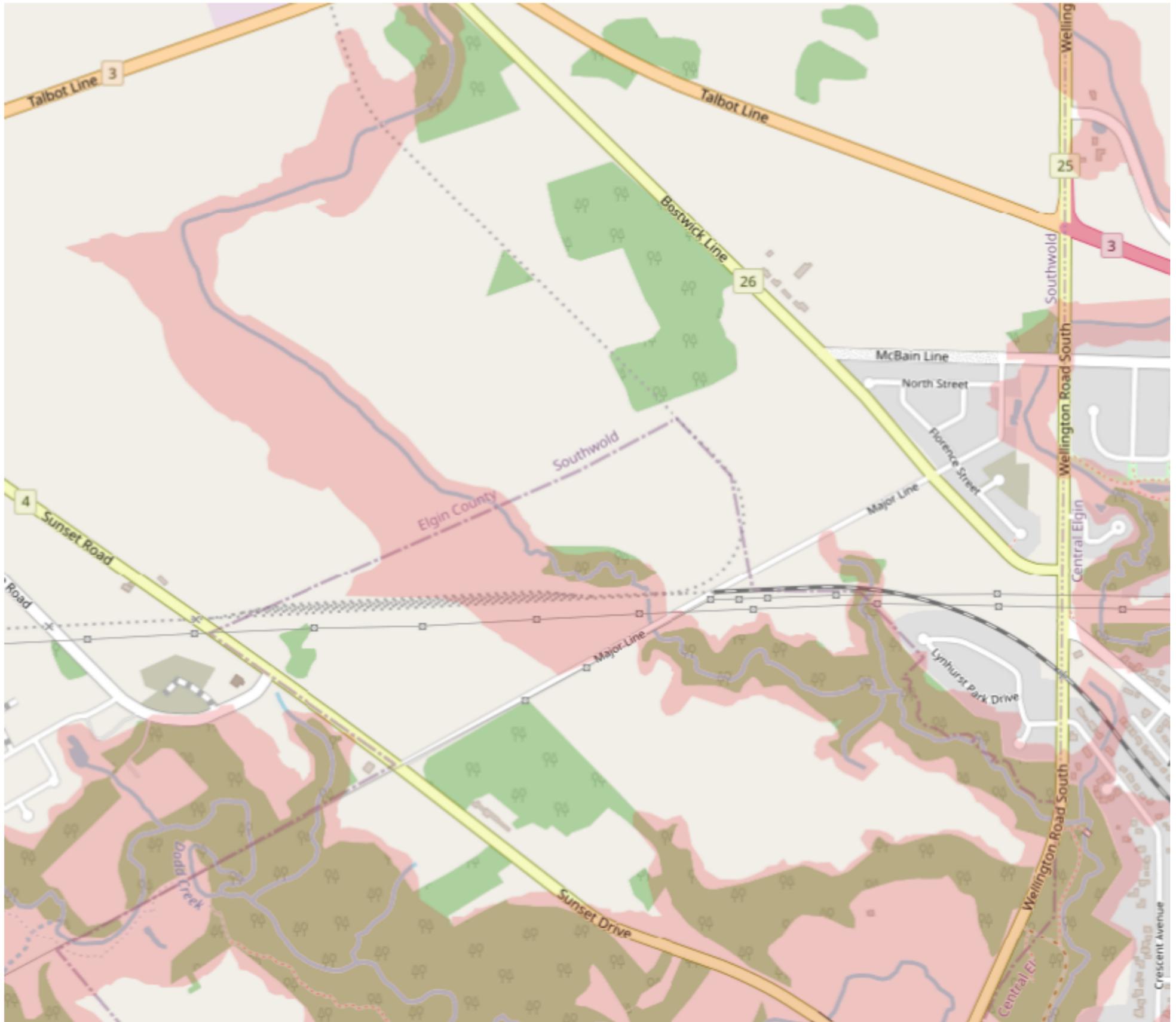
Potential Impact	Typical Recommended Mitigation and Enhancement Measures
	<p>considered in protecting potential habitats.</p> <ul style="list-style-type: none"> • Improve water quality by incorporating enhanced erosion control. • Restore riparian vegetation cover through the planting of overhanging grasses, forbs and shrubs, to provide cover, shade and a source of food (insects). • Any work along or in the watercourse margins should be timed/scheduled to minimize impacts to fish and mussel species. A review of the particular activity by the MNRF may assist in negotiating the timing window.
Stress on fish communities	<ul style="list-style-type: none"> • Any fish that may occur within isolated work areas should be captured and released in accordance with appropriate MNRF protocols.
Terrestrial Habitat and Species	
Impacts on species at risk	<ul style="list-style-type: none"> • Consultation with MNRF during detailed design is recommended in order to identify additional habitat/species surveys and requirements under the ESA.
Removal or disturbance of significant trees or ground flora	<ul style="list-style-type: none"> • Relocate or replant any significant species in a timely manner following construction. • Minimize tree removal during construction. • Stabilize all disturbed areas upon completion of any grading works through re-vegetation of the disturbed areas utilizing native plant species (i.e., seed and mulch, compost mix, tree and shrub planting).
Migratory Birds	<ul style="list-style-type: none"> • Avoidance of construction during the recommended May 1 to July 31 nesting period for southern Ontario. If construction is necessary, nest searches must be completed within three days of clearing.
Stress on biological communities	<ul style="list-style-type: none"> • Avoid construction impacts during sensitive wildlife periods, such as breeding seasons for various bird species.
Introduction of invasive species through disturbance and material removal	<ul style="list-style-type: none"> • Restore disturbed areas as soon as possible. • Use only native species for all re-vegetation work.

TALBOTVILLE WWTP SCHEDULE C CLASS EA

Summary of Cost Opinions

Potential Impact	Typical Recommended Mitigation and Enhancement Measures
	<ul style="list-style-type: none">• Monitoring plans should include invasive species.• All soils removed from the project site containing invasive species material to be dealt with in a manner to prevent spreading to a new area.
Interference with ecological corridors and linkages	<ul style="list-style-type: none">• Minimize vegetation disturbance in grassland areas to ensure habitat protection.

Appendix B: Official Plan Mapping, Post-2016 EA



<p>Legend:</p> <p>■ KCCA Regulation Limit</p>	<p>Disclaimer: The KCCA disclaims explicitly any warranty, representation or guarantee as to the content, sequence, accuracy, timeliness, fitness for a particular purpose, merchantability, or completeness of any of the data depicted and provided herein. The KCCA assumes no liability for any errors, omissions or inaccuracies in the information provided herein and further assumes no liability for any decisions made or actions taken or not taken by any person in reliance upon the information and data furnished hereunder.</p> <p>Made available through the Open Government License – Ontario. CRS: NAD83 / UTM zone 17N (EPSG:26917) Contact: jessica@kettlecreekconservation.on.ca Copyright: Kettle Creek Conservation Authority 2023</p>	<p>Ontario Regulation 181/06</p> <p>Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.</p>
	<p>Imagery: Open Street Maps</p>	<p>Date: December 22, 2023</p>
		 <p>Kettle Creek Conservation Authority</p>

Appendix C: Stage 1 Archaeological Assessment Report



**STAGE 1 ARCHAEOLOGICAL
ASSESSMENT: TALBOTVILLE
WASTEWATER TREATMENT PLANT,
PROPOSED NORTH SITE**

Part of Lot D, Southeast of Talbot Road North
Branch, Township of Southwold, Elgin
County, Ontario

January 30, 2024

Prepared for:
Township of Southwold
Infrastructure & Development Services
35663 Fingal Line
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Prepared by:
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Project Number:
165630253

Licensee: Parker Dickson, MA
License Number: P256
Project Information Form Number:
P256-0785-2024

ORIGINAL REPORT

Stage 1 Archaeological Assessment: Talbotville Wastewater Treatment Plant, Proposed North Site



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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by the Township of Southwold to complete Stage 1 archaeological assessment for the Talbotville Wastewater Treatment Plant, proposed North Site (the Project), near Talbotville, Ontario. The study area for the Stage 1 archaeological assessment of the Project is in part of Lot D, Southeast of Talbot Road North Branch, Township of Southwold, Elgin County, Ontario. Overall, the study area is approximately 6.82 hectares. The Stage 1 archaeological assessment conducted by Stantec was triggered by an Addendum to the *Talbotville Wastewater Treatment Plant Schedule C Class Environmental Assessment, Environmental Study Report* (Stantec 2016). The archaeological assessment was completed in accordance with the requirements of the *Ontario Environmental Assessment Act* (Government of Ontario 1990a).

The Stage 1 archaeological assessment was conducted in accordance with the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), governed by the Ministry of Citizenship and Multiculturalism (the Ministry) under archaeological Project Information Form number P256-0785-2024 issued to Parker Dickson, MA, by the Ministry. A property inspection was not completed as part of the Stage 1 archaeological assessment.

The Stage 1 archaeological assessment determined that the study area retains archaeological potential. In accordance with Section 1.3.1 and Section 7.7.4 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for the study area.** Full and detailed recommendations are provided in the body of the report.

The Ministry is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.



Project Personnel

Project Manager:	Jeff Paul, P.Eng.
Licensed Archaeologist:	Parker Dickson, MA (P256)
Licensed Field Director:	Parker Dickson, MA (P256)
Report Writer:	Parker Dickson, MA (P256)
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Independent Review:	Tracie Carmichael, BA, B.Ed.

Acknowledgments

Township of Southwold:	Aaron VanOorspronk, Director of Infrastructure & Development Services
Ministry of Citizenship and Multiculturalism:	Robert von Bitter, Archaeological Data Coordinator



1 Project Context

1 Project Context

1.1 Development Context

Stantec Consulting Ltd. (Stantec) was retained by the Township of Southwold (the Client) to complete Stage 1 archaeological assessment for the Talbotville Wastewater Treatment Plant, proposed North Site (the Project), near Talbotville, Ontario. The study area for the Stage 1 archaeological assessment of the Project is in part of Lot D, Southeast of Talbot Road North Branch, Township of Southwold, Elgin County, Ontario (Figure 1). The study area is approximately 6.82 hectares (Figure 2).

The Stage 1 archaeological assessment conducted by Stantec was triggered by an Addendum to the *Talbotville Wastewater Treatment Plant Schedule C Class Environmental Assessment, Environmental Study Report* (Stantec 2016), as required by the *Ontario Environmental Assessment Act* (Government of Ontario 1990a).

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out by the Ministry of Citizenship and Multiculturalism (the Ministry) in the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), the objectives of the Stage 1 archaeological assessment are to:

- Provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.
- Evaluate the study area's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property.
- Recommend appropriate strategies for Stage 2 survey.

To meet these objectives, Stantec archaeologists:

- Reviewed relevant archaeological, historical, and environmental literature pertaining to the study area.
- Reviewed land use history pertaining to the study area, including pertinent historical maps.
- Examined the Ministry's *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.
- Queried the Ministry's *Ontario Public Register of Archaeological Reports* to identify previous archaeological assessments within 50 metres of the study area.

No property inspection was completed as part of this archaeological assessment; thus, no permission to enter the study area was required.

1.2 Historical Context

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. There is no definitive moment of contact and the understanding of when Indigenous and European communities first began to influence one another is evolving with new study of archaeological and historical evidence, and from



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Indigenous oral tradition. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

1.2.1 Pre-Contact Indigenous Resources

This portion of southwestern Ontario has been occupied by Indigenous peoples since the retreat of the Wisconsin glacier approximately 11,000 years ago. Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based on observed changes in formal lithic tools, and separated into the Early Paleo, Late Paleo, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. Table 1 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system: Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology Associated with the Study Area

Period	Characteristics	Time Period	Comments
Early Paleo	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland/caribou hunters
Late Paleo	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like points	6000 – 2500 BCE	Environment similar to present
Late Archaic	Lamoka (narrow points)	2500 – 1800 BCE	Increasing site size
	Broad Points	1800 – 1500 BCE	Large chipped lithic tools
	Small Points	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 - 950 BCE	Emergence of true cemeteries
Early Woodland	Meadowood Points	950 - 400 BCE	Introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 BCE – 500 CE	Increased sedentism
	Princess Point	550 – 900 CE	Introduction of corn
Late Woodland	Early Late Woodland	900 – 1300 CE	Emergence of agricultural villages
	Middle Late Woodland	1300 – 1400 CE	Long longhouses (100+ metres)
	Late Late Woodland	1400 – 1650 CE	Tribal warfare and displacement



1 Project Context

Local environmental conditions during the Paleo period were significantly different from what they are today. Ontario's first peoples would have crossed the landscape in small groups in search of food, particularly migratory game species. In this area, caribou may have been a Paleo diet staple, supplemented by wild plants, small game, birds, and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo sites are small and ephemeral. They are sometimes identified by the presence of fluted points. Sites are frequently located adjacent to the shorelines of large glacial lakes. Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method to maintain social ties between distant groups was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

Archaeological records indicate subsistence changes around 8000 BCE at the start of the Archaic Period in southwestern Ontario. Since the large mammal species that formed the basis of the Paleo diet became extinct or moved north with the warming of the climate, Archaic populations had a more varied diet, exploiting a range of plants and bird, mammal, and fish species. Reliance on specific food resources like fish, deer, and several nut species became more noticeable through the Archaic Period and the presence of warmer, more hospitable environs led to expansion of group and family sizes. In the archaeological record, this is evident in the presence of larger sites.

By approximately 8000 BCE, evidence exists and becomes more common for the production of ground-stone tools such as axes, chisels, and adzes. These tools themselves are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and arguably craft specialization. This latter statement is also supported by evidence, dating to approximately 7000 BCE of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in social organization which permitted individuals to devote time and effort to craft specialization. Since 8000 BCE, the Great Lakes basin experienced a low-water phase, with shorelines significantly below modern lake levels (Stewart 2013: Figure 1.1.C). It is presumed that most human settlements would have been focused along these former shorelines. At approximately 6500 BCE the climate had warmed considerably since the recession of the glaciers and the environment had grown more like the present day. By approximately 4500 BCE, evidence exists from southern Ontario for the utilization of native copper, i.e., naturally occurring pure copper metal (Ellis 2013:42). The recorded origin of this material along the north shore of Lake Superior indicates the existence of extensive exchange networks across the Great Lakes basin.

The coniferous forests of earlier times were replaced by stands of mixed coniferous and deciduous trees by about 4000 BCE. The transition to more productive environmental circumstances led to a rise in population density. As a result, Archaic sites become more abundant over time. Artifacts typical of these occupations include a variety of stemmed and notched projectile points; chipped stone scrapers; ground stone tools (i.e., celts and adzes) and ornaments (i.e., bannerstones and gorgets); bifaces or tool blanks; animal bone; and chert waste flakes, a by-product of the tool making process (Ellis *et al.* 1990).



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At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French River and Mattawa River valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis *et al.* 1990: Figure 4.1). However, the construction of fishing weirs could have occurred as early as 6650 BCE (Stevens 2004). Regardless, construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by further population increase and by 1500 BCE evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 950 BCE, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to seasonally exploit natural resources. This advent of ceramic technology correlated, however, with the intensive exploitation of seed foods such as goosefoot and knotweed as well as mast such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage as well as in the cooking of food and changes in diet. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).

By approximately 550 CE, evidence emerges for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous peoples' diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies and by approximately 900 CE permanent communities emerge which are primarily focused on agriculture and the storage of crops, with satellite locations oriented toward the procurement of other resources via hunting, fishing, and foraging. By approximately 1250 CE, evidence exists for the common cultivation of Indigenous cultigens, including maize, beans, squash, sunflower, and tobacco. The extant archaeological record demonstrates many cultural traits similar to those noted for historical Indigenous nations (Williamson 2013:55).

1.2.2 Post-Contact Indigenous Resources

The post-Contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Konrad 1981; Rogers 1978; Schmalz 1991). From the mid-16th century until the turn of the 17th century, the region of the study area was within the extended political territory of Iroquoian populations who were probably ancestral to those historically described as the *Neutre* (by the French), *Neutral* (by the



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English), or the *Atawandaron* (by the Huron-Wendat); their autonym is not conclusively known (Birch 2015).

In the winter of 1626-1627, Recollet Father Daillon travelled through the region of the study area along the north shore of Lake Erie and encountered numerous villages occupied by the Neutral, also called Attikadaron, Atiouandaronk, or Attiwondaronk, who cultivated fields of maize, tobacco, and squash, in addition to hunting and fishing (Coyne 1895). In 1641-1642, the Jesuit missionaries Brebeuf and Chaumonot passed through 28 Neutral villages and gave some of them Christian names, which appear on Sanson's 1656 map of New France (Sanson 1656). The village of St. Alexis appears to be located near what may be Kettle Creek in Elgin County, but the rivers and creeks are not named on the map and their depicted locations are not entirely accurate, and therefore the exact location of the village cannot be determined. Population estimates of the Neutral, compiled by the Jesuits, range from 12,000 to 30,000 people (Coyne 1895:10). In 1650, the Iroquois Confederacy declared war on the Neutral and they were expelled from their villages and lands (Reville 1920:20). Once the Iroquois moved further into southern Ontario, the Ojibway moved into the Bruce Peninsula and the surrounding area (Schmalz 1991).

By the 1680s, Mississauga people had begun to re-enter the lower Great Lakes basin (Konrad 1981). In southwestern Ontario, members of the Three Fires Confederacy (Chippewa, Ottawa, and Potawatomi) were immigrating from Ohio and Michigan in the late 1700s (Feest and Feest 1978:778-779).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century the progeny of these marriages began to identify with neither their paternal nor maternal cultures, but instead as Métis. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however, Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2024; Stone and Chaput 1978:607-608).

Despite the differentiation among Indigenous groups in Euro-Canadian sources, there was a considerably different view by Indigenous groups concerning their self-identification during the first few centuries of European contact. These peoples relied upon kinship ties that cut across European notions of nation identity (Bohaker 2006:277-283). Many of the British-imposed names, such as Chippewa, Ottawa, Potawatomi, or Mississauga, artificially separated how self-identified Anishinaabeg classified themselves (Bohaker 2006:1-8) and, as a result, a number of these groups were culturally and socially more alike than contemporary European documentation might indicate.

Since contact with European explorers and immigrants, and, later, with the establishment of provincial and federal governments (the Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. Based on Morris (1943), the study area is in part of Treaty Number 2, also known as the McKee Purchase, a parcel of land given to the Odawa, Chippewa, Pottawatomi, and Huron by the Crown on May 19, 1790. Treaty Number 2 comprises:



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...a certain Tract of land beginning at the mouth of Catfish Creek, commonly called Rivière au Chaudière on the North Side of Lake Erie being the Western extremity of a Tract purchased by His said Majesty from the Messesagey Indians in the year One Thousand Seven Hundred and Eighty Four and from thence running Westward along the border of Lake Erie and up the Streight to the mouth of a river known by the name of Channail Ecarté to the first fork on the south side, then due east line until it intersects the Rivière à la Tranche, and up the said Rivière à la Tranche to the Thousand Seven Hundred and Eighty Four, then following the Western boundary of said tract being a due South direction until it strikes the mouth of said Catfish Creek or otherwise Rivière au Chaudière being the first offset...

(Government of Canada 2024)

While it is difficult to exactly delineate treaty boundaries today, Figure 3 provides an approximate outline of Treaty Number 2 (identified by the letter “C”). The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon their territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity...of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources which show continuity with past peoples, even if they have not been recorded in Euro-Canadian documentation.

1.2.3 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament (Craig 1963:17). At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain’s (Coyne 1895). The change was affected at the behest of United Empire Loyalists who wished to live under the British laws and customs they were familiar with in Great Britain and the former 13 Colonies (Craig 1963:10-11). Simcoe had ambitious plans to create a model British society in North America, stating a desire to “inculcate British customs, manners, and principles in the most trivial, as well as most serious matters” in Upper Canada (Craig 1963:21). At its inception, Upper Canada was only sparsely settled and its land had not been officially surveyed to any great extent. Thus, there was an urgency by Simcoe to survey this new and relatively barren province for establishing military roads and for preventing settlers from clearing and settling land not legally belonging to them. In 1792, Upper Canada was divided into 19 counties consisting of previously settled lands, new lands being opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west to Glengarry in the east.

Elgin County was initially located in both the Home District and Western District. As the population of Upper Canada increased, more districts were created, including London District in 1800, which included the counties of Middlesex, Oxford, Norfolk, Elgin, Huron, Perth, and Bruce (Elgin County Archives 2018). Elgin County was named after Lord Elgin, Governor General of Canada, at the time.



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The area was first surveyed by Colonel Talbot in 1803, but European settlers did not begin to arrive until 1809, following the construction of a grist mill. At this time, residents of Elgin County had to travel to London for court proceedings or to register a deed, but in 1852, Elgin County was designated as a county following the establishment of a courthouse and jail in St. Thomas (the county town) (Elgin County Archives 2018). Elgin County comprised the townships of Aldborough, Dunwich, Southwold, Yarmouth, South Dorchester, Malahide, and Bayham, which were surveyed and named between 1797 and 1810 (Elgin County Archives 2018).

The Township of Southwold was named in 1792 after Southwold in Suffolk, England. The township was opened for settlement in 1792, but Euro-Canadian settlers did not arrive until 1809 (Middleton 1927). By 1817, the population of Southwold Township increased to 900, which quickly grew to 2,890 people by 1842 (Smith 1846; Smith 1850). The Canada Southern Railway was founded in 1868 and passed through Southwold Township. By 1872, the population of Southwold Township was 5,559, and by 1878 the township was considered by local residents to be fully settled (Armstrong and Co. 1872:75; Department of Agriculture 1880). The population of Southwold Township began to decrease in the late 19th and 20th century, with 4,501 people noted in 1980 (Carter 1984:1118).

Figure 4 illustrates a portion of the 1864 *Historical County Map of Elgin County* (Tremaine 1864). Generally, the 1864 map illustrates that much of the township had been settled, predominantly in rural settings, but with higher concentrations of settlers in early communities such as Talbotville, to the northwest of the study area, and St. Thomas, to the southeast of the study area. Based on the 1864 map (Tremaine 1864), Lot D, Southeast of Talbot Road North Branch, had been split into four, roughly, equal parcels. Table 2 summarizes the landowner information associated with the study area.

Table 2: Associated Landowner Information for the Study Area from the 1864 Map of Elgin County

Lot	Concession	Parcel	Landowner	Notations
D	Southeast of Talbot Road North Branch	North	Sam ^l Mitchel	No historical features illustrated.
		Central (north)	Jn ^o Mitchel	No historical features illustrated.
		Central (south)	Rob ^t Mitchel	No historical features illustrated.
		South	Jn ^o Heard	No historical features illustrated.

Figure 5 illustrates a portion of the Southwold Township map from the 1877 *Illustrated Historical Atlas of Elgin County* (Page & Co. 1877). The 1877 map illustrates the expansion of the community of Talbotville and depicts a portion of the Great Western Railway running through Lot D, Southeast of Talbot Road North Branch (Note: the 1877 map refers incorrectly to the lot as “Lot A”). Additional parcelling of Lot D has occurred since 1864. Table 3 summarizes the landowner information associated with the study area.



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Table 3: Associated Landowner Information for the Study Area from the 1877 Map of Southwold Township

Lot	Concession	Parcel	Landowner	Notations
D	Southeast of Talbot Road North Branch	Northwest	T.O. Marro	Structure illustrated northwest of the study area, fronting historical road (now Sunset Road/ Highway 4).
		Northeast	H. Hill	Structure illustrated east of the study area, fronting historical road (now Ford Road).
		Central (northwest)	J. Leakey	Structure illustrated southwest of the study area, fronting historical road (now Sunset Road/ Highway 4). Portion of railway within parcel.
		Central (southwest)	Geo. Bennett	No structures illustrated, but portion of railway depicted within parcel.
		South	J.H. Heard	Structure illustrated south of the study area, fronting historical road (now Sunset Road/ Highway 4). Portion of railway within parcel.
		Southeast	J. Lagg	Structure illustrated east of the study area, fronting historical road (now Ford Road).

It should be remembered that historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). In general, review of historical mapping has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in “fixed” locations over time (e.g., road intersections, road alignments, watercourses, shorelines, etc.), errors/difficulties of scale and the relative idealism of the historical cartography, historical maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review. Nonetheless, Figures 4 and 5 provide a general idea of the study area as it would have appeared in the mid-to-late 19th century and illustrates the degree to which the surrounding area had been developed and settled by European immigrants.

1.3 Archaeological Context

1.3.1 The Natural Environment

The study area is situated within the Ekfrid Clay Plain, as defined by Chapman and Putnam (1984). This region includes a large area of fine textured, water deposited sands laid down as part of the delta of the glacial Grand River (Chapman and Putnam 1984). Moreover, the



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... surface is nearly level except where cut by gullies... Here and there, knolls or low smooth ridges of sand and gravel are superimposed on the clay... the silty sediments give rise to particularly good soil, being fairly pervious and easy to till. Slow drainage is the main limitation ... common dark-surfaced clay loam is a good soil when tile drained... More than half the land is in corn, soybeans, and wheat... the plain is highly cleared with only 7% of the land taken up by woodlots.

(Chapman and Putnam 1984:146-147)

The soil within the study area comprises imperfectly drained Conover clay loam (Schut 1992). Though not ideal, this soil type would have been suitable for early agricultural practices.

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to water is one of the most used variables for predictive modeling of archaeological site location in Ontario. An unnamed tributary of Dodd Creek is located approximately 175 metres east of the study area, and Dodd Creek is located approximately 450 metres south of the study area.

1.3.2 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the Ministry who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AeHh.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The Ministry will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the *Ontario Archaeological Sites Database* has shown that there are 18 registered archaeological sites located within a one-kilometre radius of the study area (Government Ontario 2024a). Table 4 summarizes the registered archaeological sites within one kilometre of the study area; none are located within 50 metres of the study area.



Stage 1 Archaeological Assessment: Talbotville Wastewater Treatment Plant, Proposed North Site

1 Project Context

Table 4: Registered Archaeological Sites near the Study Area

Borden Number	Site Name	Site Type	Cultural Affiliation
AeHh-45	Not applicable (n/a)	Scatter	Euro-Canadian
AeHh-46	n/a	Findspot	Indigenous
AeHh-53	Talbotville 1	Scatter	Indigenous
AeHh-54	n/a	Camp	Indigenous
AeHh-55	Talbotville 3	Findspot	Indigenous
AeHh-58	Talbotville 6	Findspot	Indigenous
AeHh-59	Talbotville 7	Scatter	Indigenous
AeHh-104	Lynhurst North	Camp	Indigenous
AeHh-116	Greenway	Camp	Indigenous
AeHh-153	n/a	Findspot	Indigenous
AeHh-154	n/a	Camp	Indigenous
AeHh-155	n/a	Scatter	Indigenous
AeHh-156	n/a	Camp	Indigenous
AeHh-157	n/a	Findspot	Indigenous
AeHh-158	n/a	Camp	Indigenous
AeHh-159	n/a	Findspot	Indigenous
AeHh-160	n/a	Scatter	Euro-Canadian
AeHh-176	tbp_loc-15	Findspot	Indigenous

A query of the *Ontario Public Register of Archaeological Reports* was completed to identify previous archeological assessments completed within, or adjacent to, the study area. Based on the query, no archaeological assessments have been completed within or within approximately 50 metres of the study area (Government of Ontario 2024b). However, a previous archaeological assessment was completed as part of the original *Talbotville Wastewater Treatment Plant Schedule C Class Environmental Assessment*. Mayer Archaeological Consultants (MAC) completed Stage 1 and 2 archaeological assessment for a proposed draft plan application for the property at 10065 Gore Road, Talbotville, Ontario (MAC 2013). Two archaeological locations were identified by MAC during the Stage 2 survey; both were isolated findspots and neither were recommended for Stage 3 assessment (MAC 2013). The original *Talbotville Wastewater Treatment Plant Schedule C Class Environmental Assessment* identified a proposed South Site for the new wastewater treatment plant within the area previously assessed by MAC (2013). Plans to construct the proposed new wastewater treatment plant at the South Site were abandoned in favour of the North Site (this report).



1 Project Context

1.4 Existing Conditions

The Stage 1 archaeological assessment for the study area was conducted under Project Information Form (PIF) number P256-0785-2024 issued to Parker Dickson, MA, by the Ministry. The study area for the archaeological assessment is approximately 6.82 hectares and comprises active agricultural field and scrubland in part of Lot D, Southeast of Talbot Road North Branch, Township of Southwold, Elgin County, Ontario.



2 Field Methods

2 Field Methods

Initial background research compiled information concerning registered and/or potential archaeological resources within the study area. A property inspection was not conducted for the Stage 1 archaeological assessment and therefore there are no field methods to describe.



3 Analysis and Conclusions

3 Analysis and Conclusions

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by the Ministry (Government of Ontario 2011) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The Ministry categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, and creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, and shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, and sandbars stretching into marsh.

The closest sources of extant potable water are an unnamed tributary of Dodd Creek, located approximately 175 metres east of the study area, and Dodd Creek, located approximately 450 metres south of the study area. Ancient and/or relic tributaries of Dodd Creek, and other primary water sources, may have existed but are not identifiable today and are not indicated on historical mapping. Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. As indicated previously, the soil within the study area is imperfectly drained and, while not always ideal, would have been suitable for early agricultural practices. A query of the *Ontario Archaeological Sites Database* identified 18 registered archaeological sites within one kilometre of the study area (Government of Ontario 2024a).

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990c) or property that local histories or informants have identified with possible historical events. Based on a review of historical mapping (see Figures 4 and 5), no historical structures are illustrated within the study area, but structures and early roadways and railways are near or adjacent to the study area.

When the above-listed criteria are collectively applied, the entirety of the study area retains archaeological potential (Figure 6).



4 Recommendations

4 Recommendations

The Stage 1 archaeological assessment of the study area for the Project determined that the entirety of the study area retains archaeological potential. In accordance with Section 1.3.1 and Section 7.7.4 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for the study area (Figure 6).**

The objective of Stage 2 archaeological assessment is to document archaeological resources within the study area and to determine whether these archaeological resources require further assessment. As a portion of the study area comprises agricultural field, the Stage 2 archaeological assessment will include the systematic walking of open ploughed fields as outlined in Section 2.1.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Ministry's standards require that agricultural land, both active and inactive, and any accessible land, be recently ploughed and sufficiently weathered to improve the visibility of archaeological resources. Ploughing must be deep enough to provide total topsoil exposure, but not deeper than previous ploughing, and must provide at least 80% ground surface visibility.

For portions of the study area that are inaccessible for ploughing, the Stage 2 archaeological assessment will include a test pit survey as outlined in Section 2.1.2 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). The Ministry's standards require that each test pit be at least 30 centimetres in diameter, excavated to at least five centimetres into sterile subsoil, and have excavated soil screened through six-millimetre hardware cloth to facilitate the recovery of any cultural material that may be present. Prior to backfilling, each test pit will be examined for stratigraphy, cultural features, or evidence of fill.

If the archaeological field team determines any lands to be low and wet, steeply sloped, or disturbed during the Stage 2 fieldwork, those areas will not require survey, but will be photographically documented in accordance with Section 2.1 of the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

The Ministry is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.



5 Advice on Compliance with Legislation

5 Advice on Compliance with Legislation

In accordance with Section 7.5.9 of the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011), the following standard statements are a required component of archaeological reporting and are provided from the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18 (Government of Ontario 1990c). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the study area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990c) for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the *Ontario Public Register of Archaeological Reports* referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990c)

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990c) The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990c)

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Funeral, Burial and Cremation Services Act and Manager of Burials Unit at the Ministry of Public and Business Service Delivery also be immediately notified.

Archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990c) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.



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6 Bibliography and Sources

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Stage 1 Archaeological Assessment: Talbotville Wastewater Treatment Plant, Proposed North Site

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Stage 1 Archaeological Assessment: Talbotville Wastewater Treatment Plant, Proposed North Site

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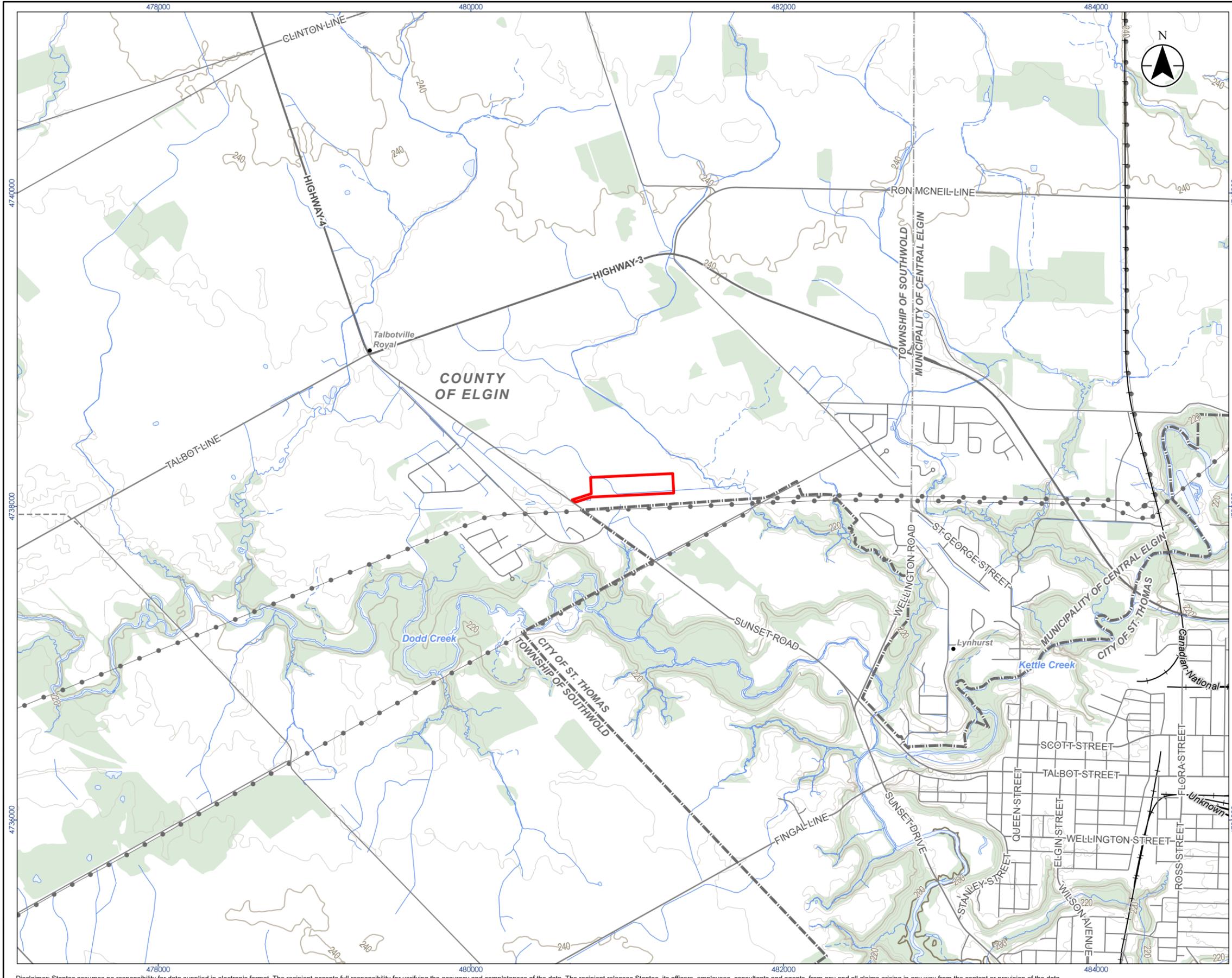


7 Maps

7 Maps

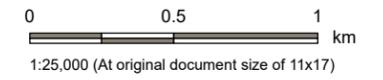
General maps of the study area and archaeological assessment follow on succeeding pages.



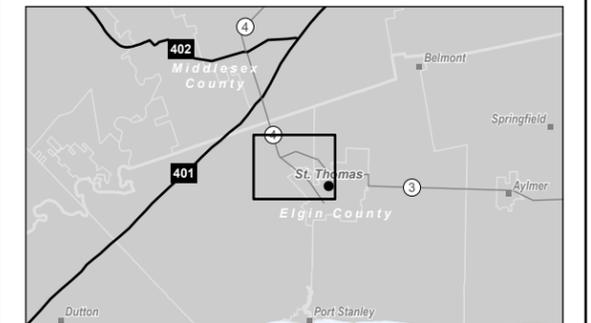


Legend

- Study Area
- Highway
- Major Road
- Minor Road
- Railway
- Hydro Line
- Unknown Transmission Line
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain
- Waterbody
- Wooded Area
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.



Project Location: Township of Southwold
 Prepared by: jsa on 2024-01-18
 Reference Number: 165630253

Client/Project: TOWNSHIP OF SOUTHWOLD
 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No. **1**

Title: **Location of the Study Area**

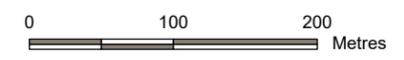
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Legend

- Study Area
- Hydro Line
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier



1:5,000 (At original document size of 11x17)

Notes

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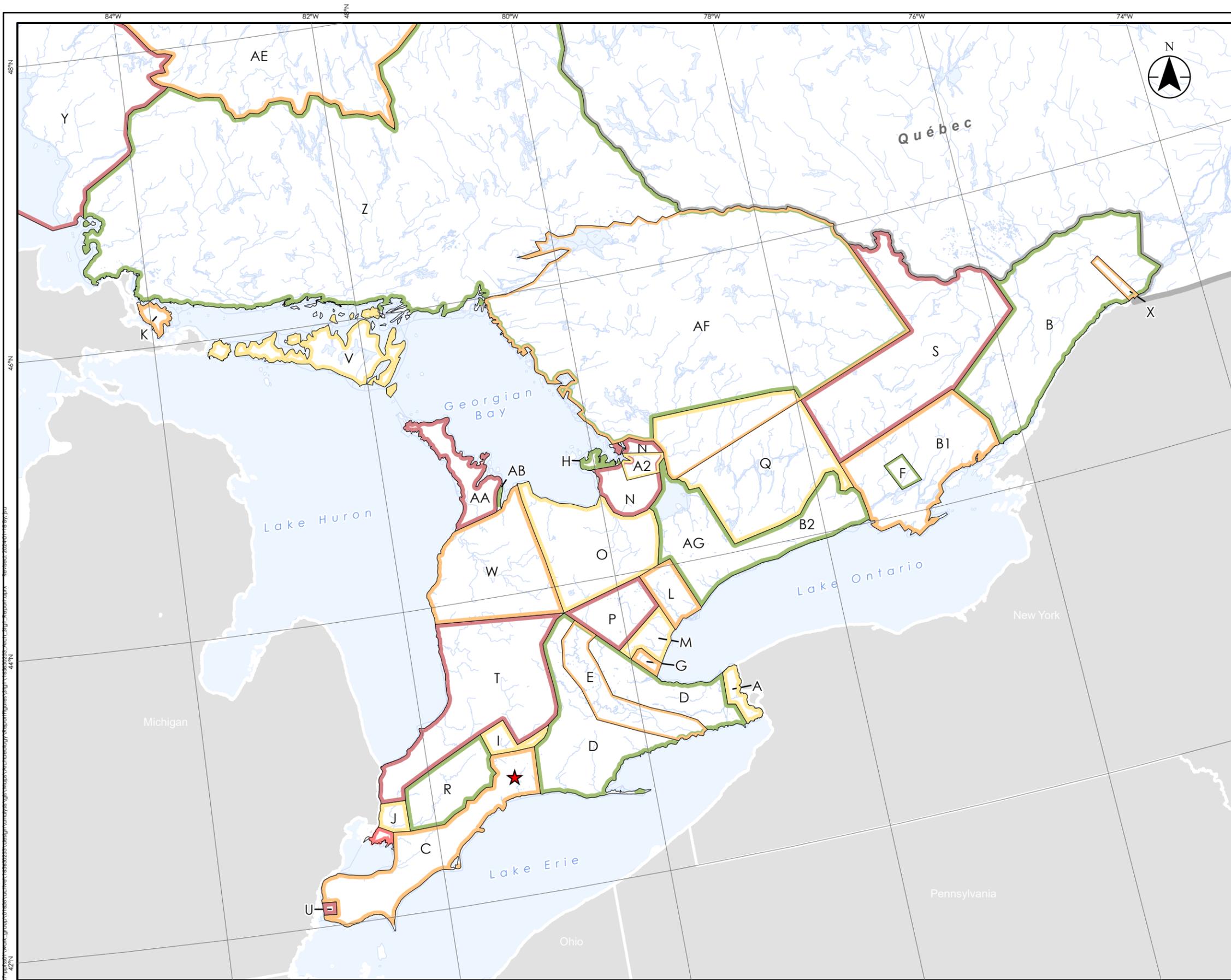
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 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.: **2**

Title: **Detailed Location of the Study Area**

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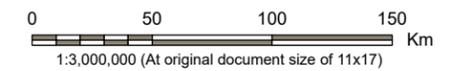
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Legend

- ★ Study Area
- Waterbody

- A** Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- AA** Treaty No. 72, October 30th, 1854 (Chippewa)
- AB** Treaty No. 82, February 9th, 1857 (Chippewa)
- AE** Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AF** Williams Treaty, October 31st and November 15th, 1923 (Chippewa and Mississauga)
- AG** Williams Treaty, October 31st, 1923 (Chippewa)
- A2** John Collins' Purchase, 1785 (Chippewa)
- B** Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1** Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2** Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C** Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomie, and Huron)
- D** Treaty No. 3, December 2nd, 1792 (Mississauga)
- E** Haldimand Tract: from the Crown to the Mohawk, 1793
- F** Tyendingaga: from the Crown to the Mohawk, 1793
- G** Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th, 1795
- H** Treaty No. 5, May 22nd, 1798 (Chippewa)
- I** Treaty No. 6, September 7th, 1796 (Chippewa)
- J** Treaty No. 7, September 7th, 1796 (Chippewa)
- K** Treaty No. 11, June 30th, 1798 (Chippewa)
- L** Treaty No. 13, August 1st, 1805 (Mississauga)
- M** Treaty No. 13A, August 2nd, 1805 (Mississauga)
- N** Treaty No. 16, November 18th, 1815 (Chippewa)
- O** Treaty No. 18, October 17th, 1818 (Chippewa)
- P** Treaty No. 19, October 28th 1818 (Chippewa)
- Q** Treaty No. 20, November 5th, 1818 (Chippewa)
- R** Treaty No. 21, March 9th, 1819 (Chippewa)
- S** Treaty No. 27, May 31st, 1819 (Mississauga)
- T** Treaty No. 27 1/2, April 25th, 1825 (Ojibwa and Chippewa)
- U** Treaty No. 35, August 13th, 1833 (Wyandot or Huron)
- V** Treaty No. 45, August 9th, 1836 (Chippewa and Odawa, "For All Indians To Reside Thereon")
- W** Treaty No. 45 1/2, August 9th, 1836 (Saugeen)
- X** Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y** Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z** Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)



- Notes**
1. Coordinate System: NAD 1983 Statistics Canada Lambert
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 3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

Project Location: Township of Southwold
 Prepared by jsa on 2024-01-18

Client/Project: TOWNSHIP OF SOUTHWOLD
 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.: **3**

Title: **Treaties and Purchases (Adapted from Morris 1943)**



Legend

Study Area - Approximate Location

Notes
 1. Historical information not to scale
 2. Reference: Tremaine, George R. 1864. *Map of the County of Elgin, Upper Canada*. St. Thomas: George R. Tremaine.

Project Location	165630253
Township of Southwold	Prepared by jsa on 2024-01-18

Client/Project
 TOWNSHIP OF SOUTHWOLD
 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.

4

Title

Portion of the 1864 Map of Elgin County



Legend

Study Area - Approximate Location

Notes
 1. Historical information not to scale
 2. Reference: Page, H. R., and Co. 1877. *Illustrated Historical Atlas of Elgin County*, Toronto: H.R. Page and Co.

Project Location: Township of Southwold
 Prepared by jsa on 2024-01-18
 165630253

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 TOWNSHIP OF SOUTHWOLD
 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
5

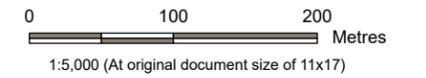
Title
Portion of the 1877 Map of Southwold Township

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Legend

- Study Area
- Hydro Line
- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain
- Municipal Boundary, Upper Tier
- Municipal Boundary, Lower Tier
- Stage 1 Archaeological Assessment Results**
- Retains Archaeological Potential, Further Work Recommended (Stage 2 Assessment)



- Notes**
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 3. Imagery source: Maxar

Project Location: Township of Southwold
 Prepared by jsa on 2024-01-18

Client/Project: TOWNSHIP OF SOUTHWOLD
 TALBOTVILLE WWTP, PROPOSED NORTH SITE
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

Figure No.
6

Title
Archaeological Potential

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8 Closure

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Quality Review _____
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Colin Varley – Senior Associate, Senior Archaeologist

Independent Review _____
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Tracie Carmichael – Managing Principal, Environmental Services

