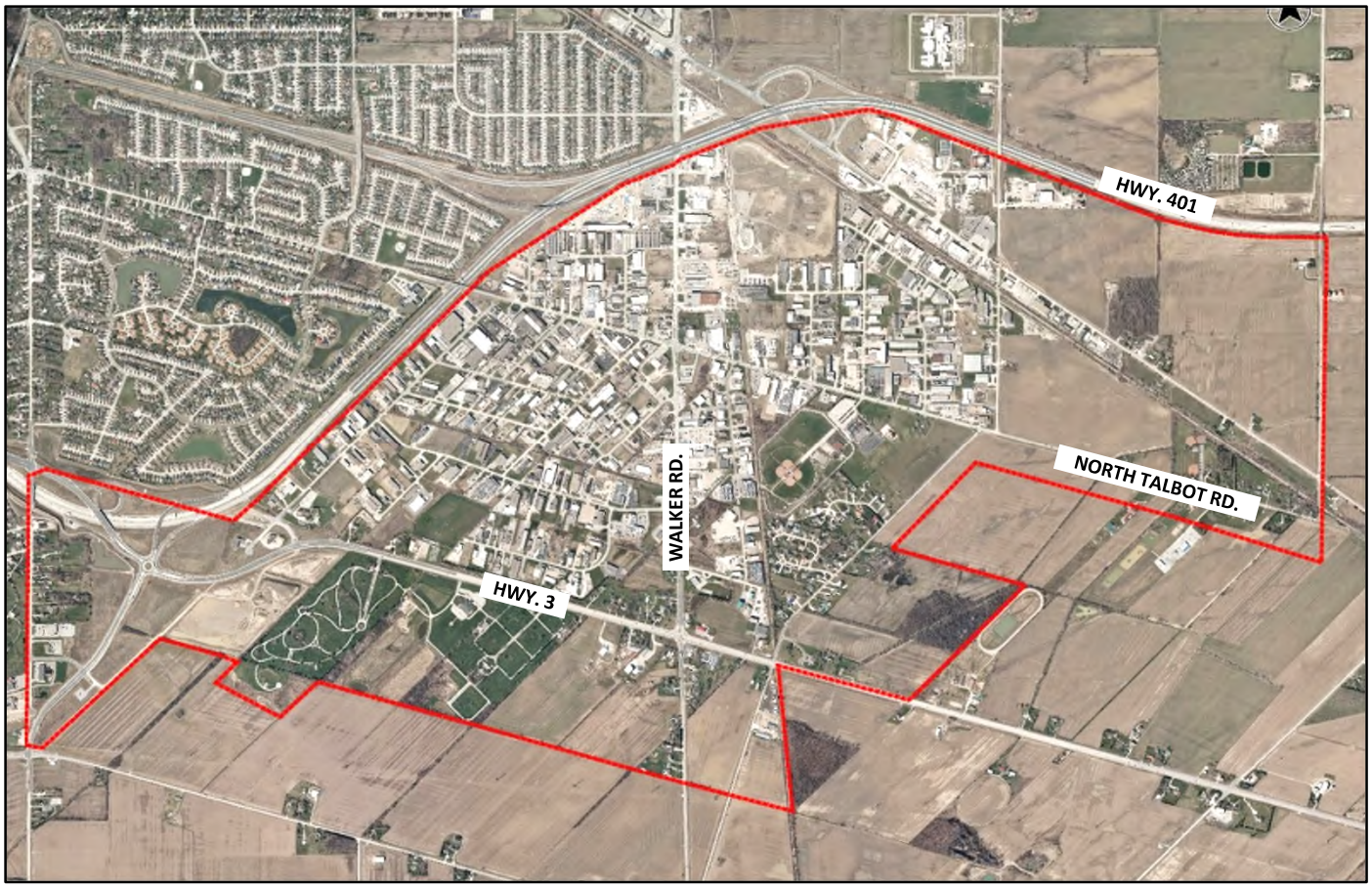
OLDCASTLE STORMWATER MASTER PLAN & CLASS ENVIRONMENTAL ASSESSMENT



Job Number: 19-010
Date: April 2022

Landmark Engineers Inc.

Section 1:
Project Information
and
Environmental Inventory

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1.0 Project Information and Environmental Inventory

This section of the Project File presents general project information including a project overview, a summary of the project's background, the problem/opportunity statement and a description of the project file and status. This section also summarizes the relevant background information and environmental inventory that was compiled and reviewed as part of the Municipal Class Environmental Assessment (MECA) process.

Funding for this study is being provided in part through the National Disaster Mitigation Program (NDMP) which is a federal program that provides funding support for flood mitigation projects. The Government of Canada administers the NDMP and provides NDMP funding to the Provincial and Territorial governments who may redistribute funding to eligible entities such as the Town of Tecumseh. In Ontario, the NDMP is administered by the Ministry of Municipal Affairs and Housing. (Note: Views expressed in this study are the views of the Town of Tecumseh and do not necessarily reflect those of the Province and the Government of Canada.)

1.1 Project Information

1.1.1 Project Overview

The Town of Tecumseh has undertaken a Stormwater Master Plan for the Oldcastle Hamlet. The project is intended to achieve several objectives, including the following:

- Review the capacity of the current stormwater management system;
- Identify the areas of concern;
- Review the stormwater management needs of future development;
- Identify and assess potential improvement alternatives; and,
- Create a strategy for implementing the proposed improvements.

Two Public Information Centers were conducted to present project-related information and was intended to solicit input from property owners, public and stakeholders. The first open house was conducted in October 2019; the second open house occurred in January 2020. A summary of the public consultation process is presented in Section 3 of this Project File.

1.1.2 Background

The Town of Tecumseh initiated a study of the Oldcastle Hamlet drainage area in the fall of 2018. This study was aimed at developing a Storm Water Master Plan (SWMP) including a capacity review of the existing storm sewer systems and drains with consideration to both current and future development. As part of the capacity review, the need for alterations to, improvements, and construction of new storm sewer system components (i.e. sewers, significant ditches, municipal drains, storm water management facilities) were also to be assessed.

1.1.3 Problem/Opportunity Statement

At the outset of the MCEA process, the following Problem / Opportunity statement was developed to guide and direct the study:

> *"This study intends to evaluate the current stormwater system capacity of the Oldcastle Hamlet, identify the capacity needed for existing and projected future demands and develop a strategy to implement proposed improvements."*

1.1.4 Project File

It was established that the SWMP was to be undertaken in accordance with the latest Municipal Engineers Association (MEA) Municipal Class Environmental Assessment (Class EA) document and fulfill both Phase's 1 & 2 requirements of the Class EA process following Approach 2.

Since this project encompasses all 'Schedule B' level activities under the Municipal Class Environmental Assessment, the Town of Tecumseh is required to compile and maintain an official Project File that will be made available to the public for review and comment. The balance of this document represents the Project File.

1.1.5 Project Status & Next Steps

The Class EA process has been completed and this Project File has been compiled.

The Notice of Completion 30-day review period expired on March 25, 2022. No Part II Orders were received as a result of the Notice,

The Town of Tecumseh may now proceed with the design and construction of the of the identified Projects within the Preferred Solution, if and when it is desired.

1.2 Environmental Inventory & Review of Background Information

A copy of the Environmental Inventory slides presented at the Public Information Centres has been included in this section of the Project File for ease of reference.

1.2.1 Physical Environment

Land Uses

The area of study is approximately 900 hectares in size and is comprised primarily of Business Park, Hamlet Development and Community Facility with very little Hamlet Residential, General Commercial and Recreational. See Environmental Inventory Land Use slide.

1.2.2 Natural Environment

Geotechnical Investigation

Due to the size of the study area, a geotechnical investigation was not undertaken as part of this study. Prior to proceeding with detailed design of the Preferred Solution proposed improvements, a geotechnical investigation may be required.

Any proposed improvements or activities that will involve the management of excess soils should be completed in accordance with O. Reg. 406/19 as well as MECP's current guidance document titled "Management of Excess Soils – A Guide for Best Management Practices" (2014).

Source Water Protection

The Project File was reviewed by the Essex Region Conservation Authority (ERCA) as it related to Source Water Protection in the Essex Region. It was identified that the study area falls within the Essex Region Source Water Protection Plan, and the drainage areas are identified as within the Event Based Area (EBR) and Intake Protection Zone (IPZ) 3. A copy of the letter from ERCA can be found in this section of the Project File.

Natural Heritage

MTE Consultants Inc. was retained to complete a Natural Heritage Constraint Assessment for the area of study for the Oldcastle Stormwater Master Plan. The objective of the assessment was to identify potential constrains within the study area associated with natural heritage components and regulatory aspects. A copy of the MTE Oldcastle Stormwater Master Plan Environmental Assessment Natural Heritage Constrain Assessment can be found in Section 7 of this Project File.

Climate Change

As part of the study, consideration has been given to Climate Change mitigation and adaption strategies. This was presented at PIC#2 and a copy of the information can be found in this section of the Project File.

Waste Disposal

All waste generated during construction must be disposed of in accordance with the Ministry of the Environment, Conservation and Park's requirements.

Noise and Vibration

The majority of the improvements proposed are within lands zoned as Business Park and Hamlet Development. The proposed Schedule B projects are all considered routine construction projects and no excess noise or vibration are anticipated beyond the typical construction disruptions.

1.2.3 Social / Economic Environment

Archaeological Potential (Land Based Assessment)

A Stage 1 Archaeological Background Assessment of the area of study for the Oldcastle Stormwater Master Plan was undertaken by AMICK Consultants Limited. A summary of the recommendations provided by AMICK and a copy of AMICK's report can be found in Section 6 of this Project File.

Built Heritage/Cultural Heritage

AECOM was retained to complete a desktop Cultural Heritage Screening Review for the purpose of identifying recognised and potential cultural heritage resources within the Master Plan Study Area

There are no listed or designated heritage buildings or properties within the area of study. However, AECOM has identified four potential built heritage resources. A summary of AECOM's recommendations, a list of the potential built heritage resources, and a copy AECOM's full report can be found in Section 6 of this Project File.

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17 March 2021
Liz Machaud, P.Eng
Landmark Engineering
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RE: Oldcastly Stormwater master plan Municipal Class EA

Dear Ms. Machaud,

Thank you for the opportunity to review the information related to the Town of Tecumseh's storm drainage master plan Municipal Class Environmental Assessment as it relates to Source Water Protection in the Essex Region. There are no Source Water related concerns about this project at this time. However, further information is provided below.

Significant Drinking Water Threats

The area where the proposed sewer expansion is to take place is within the Event Based Area (EBA) for the A.H. Week's Water Treatment Plant. In this area, the above grade handling and storage of liquid fuel in volumes greater than 15,000 L is identified as a Significant Drinking Water Threat (SDWT). Based on the information provided, it does not appear that fuel of this volume will be used or installed as a direct result of the proposed project. Should fuel of this volume be necessary during or as a result of the proposed project, a Risk Management Plan will be required.

Transport Pathways

Vulnerable Areas (IPZs and EBA) define the areas where certain activities may be identified as Significant Drinking Water Threats. They are delineated following the Director Technical Rules (DTR) of the Clean Water Act. For surface water intakes like those found in the Essex Region, vulnerable areas are delineated using the best available mapping of drains and other watercourses. In the study area, the IPZ3 and EBA are defined as a 120m setback from an open watercourse per the DTR. These delineations will need to be changed if the proposed project results in the creation, relocation or removal of drains and/or other open watercourses and sewers.

We ask that you notify the Essex Region Source Protection staff once the drainage works are complete and provide updated mapping of drainage features so that the delineation of vulnerable areas can be adjusted appropriately. Any changes to these delineations would need to be included in formal updates to the Source Protection Plan and Assessment Report using the provisions of the *Clean Water Act* (s.34 or s. 36) or its Regulations (s.51).

Drinking Water Issues

Microcystin, the toxin produced by the cyanobacteria present in the Harmful Algal Blooms (HABs) experienced in both Lake Erie and Lake St.Clair, was identified as a drinking water issue for all of the Essex Region's Lake Erie drinking water intakes. The intensity and severity of HABs are influenced by the contribution of nutrients (e.g. phosphorus and nitrogen) from the tributaries of Lake Erie, which includes the Detroit River. We encourage the developers on this project to consider contributions of phosphorus to receiving water bodies (i.e. Lake St. Clair and the Detroit River) that may be affected by changing overland or sanitary sewer drainage. This project is an excellent opportunity to incorporate Low Impact Develop tools that could help to reduce phosphorus inputs and, at a minimum, should be used to ensure that phosphorus inputs will not be increased as a result of this project.

Again, we thank you for the opportunity to provide comments on this project and look forward to hearing more as it progresses.

Sincerely,

Katie Stammler, PhD
Source Water Protection Project Manager

Social and Natural Environment

Natural Heritage Assessment

MTE Consultants Ltd. were retained to complete a Natural Heritage Constraint Assessment of the Study Area. The report details the natural heritage components protected under municipal, provincial and federal legislation, as well as areas and features that are subject to regulatory authority review. The following recommendations have been made for next steps:

- For areas of known constraints within a considered development area, relevant regulators (DFO, County of Essex, ERCA) should be engaged to determine if the proposed works could be supported through a permitting or approval process and to scope the extent of site specific investigation required.
- For areas where constraints are unknown, but potentially present, they should be confirmed through targeted field surveys and assessments.

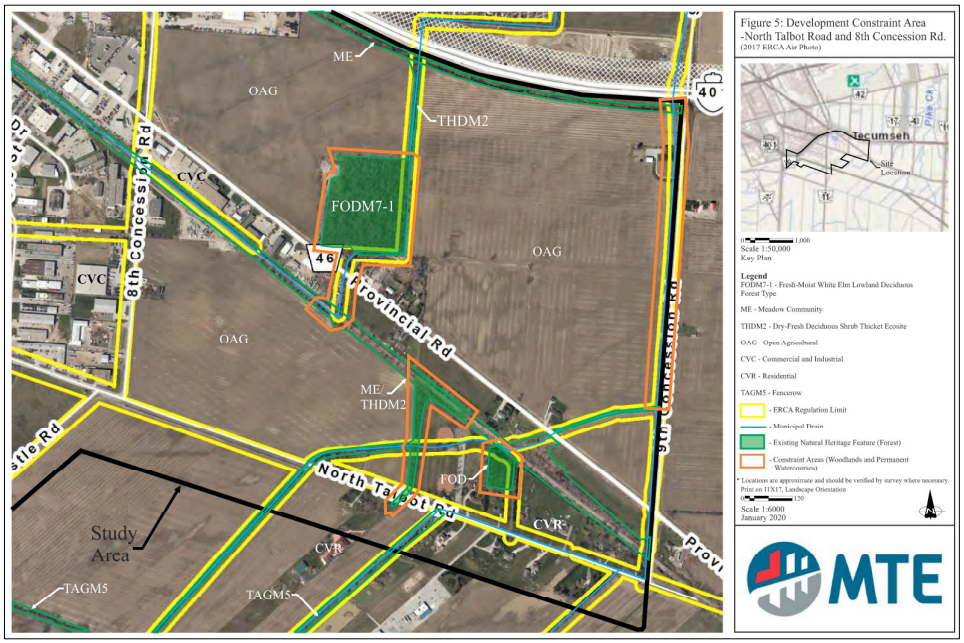


Figure 5 illustrates the typical Development Constraints that can be found within the Study Area.

Cultural Heritage

AECOM Canada Ltd. were retained to complete a Cultural Heritage Assessment of the Study Area. The following is a summary of their findings and recommendations:

- A review of the Town of Tecumseh's Municipal Register of Cultural Heritage Properties indicates that there are no listed or designated properties located within the Study Area.
- Talbot Road (Highway 3) is a historical pioneer route, dating back to the early nineteenth-century. The road was surveyed to provide access to settlements along the north shore of Lake Erie. The 1877 Map of Essex shows there were once as many as twelve residences located along the north and south sides of Talbot Road within the Study Area.
- Contemporary mapping imagery indicates that few of the nineteenth-century structures have survived. Most structures in the Study Area appear to date from the mid-to-late twentieth century.
- Four private properties have been identified within the study area that may contain structures which possibly date to the nineteenth or early twentieth centuries. These structures may require further evaluation if they are likely to be impacted by the project.

Recommendations:

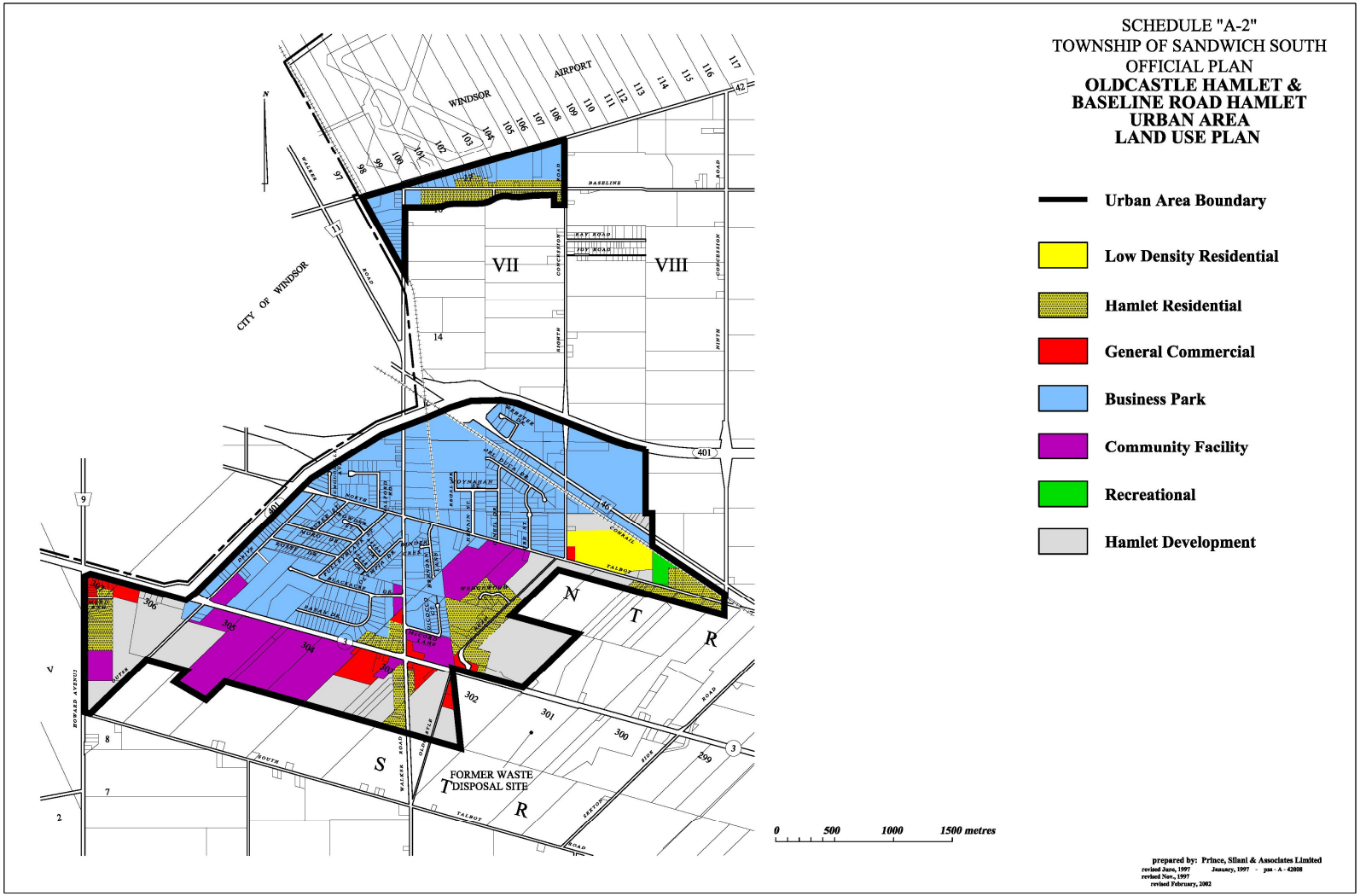
- The proposed project will not have anticipated impacts on cultural heritage resources, and thus, no mitigation measure are recommended at this time.

Geotechnical Investigation

Due to the size of the Study Area, it was determined that it would not be feasible to undertake soil testing for the entire Study Area. Once areas for potential improvements are proposed, the Project Team will determine where geotechnical investigations are required (if warranted). As well, some improvements have been recommended on private properties. The Town would not be able to conduct testing on the property at this time.

Land Uses

This display presents the zoned land uses for the Study Area. As illustrated by the map below, the area is comprised primarily of Business Park, Hamlet Development and Community Facility with very little Hamlet Residential, General Commercial and Recreational.



ERCA Regulated Areas

This display presents the locations and extents of ERCA (Essex Region Conservation Authority) regulated drainage corridors. As illustrated in the diagram below, stormwater runoff from within the area of Oldcastle contributes to three different watersheds. These drains and watersheds are listed below.

Downstream Receiving Watersheds

- Little River
- Turkey Creek
- River Canard

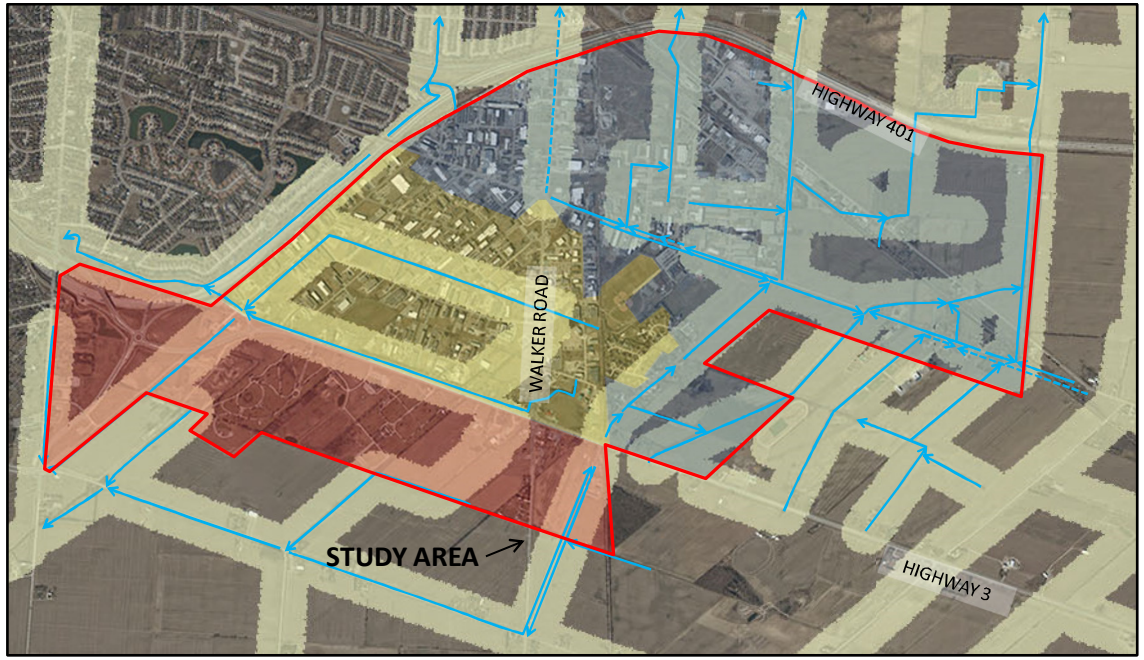
ERCA Regulated Drainage Corridors

- Burke Drain
- Collins Drain
- Shreve Drain
- Wolfe Drain
- Wellwood Drain
- Robinson Drain
- Downing Drain
- Washbrook Drain
- 6th Concession Drains
- 7th Street Drain
- Shuttleworth Drain
- Hurley Drain
- Delmonte Drain
- South Talbot Road Drain
- Oldcastle Road Drain

Source Water Protection (Clean Water Act)

The study area falls within ERCA's Source Water Protection Plan. The drainage areas are also identified as within the Event Based Area and the Intake Protection Zone (Zone 3).

All of the improvements proposed within the Study Area will be sent to ERCA to review for any potential impacts to the vulnerable areas. Given the type of improvements proposed, we do not anticipate any significant impacts. The project team will work with ERCA to satisfy any requirements as deemed necessary.



ERCA Regulated Drains

LEGEND

- ERCA Regulated Municipal Drains - Open
- ERCA Regulated Municipal Drains – Closed/Tiled
- Limits of Study Area
- Event Based Area (IPZ – Zone 3)
- Turkey Creek – Receiving Watershed
- Little River – Receiving Watershed
- River Canard – Receiving Watershed

Note: 1. Depicted drain locations are approximate.
2. Only drains within the study area have been illustrated.

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Climate Change - Mitigation / Adaptation Strategies

As part of our study, consideration has been given to Climate Change mitigation and adaptation strategies. Below is a general summary of these considerations.

How have projected Climate Change impacts been incorporated into project planning / what anticipated impacts has Climate Change had on project design and planning?

- Design has taken into account:
  - Extreme rainfall event statistics
  - The need for stormwater storage
  - Stormwater management standards developed in the Windsor/Essex Regional Stormwater Management Standards Manual
- Consideration of resiliency and vulnerability of stormwater infrastructure due to extreme rain events

What are the impacts and mitigating measures of this project on Climate Change?

Item	Environmental Impact(s)	Mitigating Measure(s)
Construction of the works	• The construction activities have the potential to create greenhouse gases.	• Local Contractors will be used to limit the distance that machinery needs to be transported. • Local suppliers of materials will be chosen (when possible). • The ponds will be landscaped with trees which will improve air quality and add carbon sinks.
Downstream Outlet	Potential to increase flows downstream.	• Stormwater ponds will store runoff and control the release of water to receiving watercourses.
Increased Volumes due to Climate Change	The volume of water that is anticipated may increase due to Climate Change.	• The increase in volume due to Climate Change has been considered while designing the ponds, flood storage areas, overland flow routes and floodproofing elevations.
Drain Improvements	Works may cause harm to Species at Risk or Species at Risk habitat.	• All work must comply with the 'Species at Risk Mitigation Plan for Drainage Works' for the Town of Tecumseh. • During detailed design, a plan will be prepared at the outset that will determine timing windows for construction and any permits required.

Anticipated Impacts and Related Studies

The purpose of the Study is to identify improvements that are required to improve drainage within the Study Area. While doing so, due consideration has been given to mitigating any adverse impacts to the downstream drainage systems. Drainage from the study area does not follow municipal boundaries. The study area outlets to drains in Windsor and LaSalle. The project team has been coordinating with these Municipalities to ensure that the proposed improvements consider the overall drainage scheme, which extends far beyond the boundaries of the study area. To this end, the Project Team has also reviewed the following related studies to ensure that the stormwater plan will coordinate with their findings, recommendations and conclusions:

Upper Little River Master EA
(www.citywindsor.ca/residents/Construction/Environmental-Assessments-Master-Plans/Pages/Upper-Little-River-EA.aspx)

The Upper Little River Watershed Master Drainage and Stormwater Management Plan *(ULRMP)* serves to ensure that urbanization of the Upper Little River Watershed can occur in a fashion that will not lead to negative impacts on the receiving stormwater systems, and would allow for future enhancements. The study area encompasses the portion of the Oldcastle study which drains to Little River. The ULRMP recommended *Alternative 6 – Grouped Off-line SWM Controls* to be distributed along SWM corridors as illustrated on this slide.

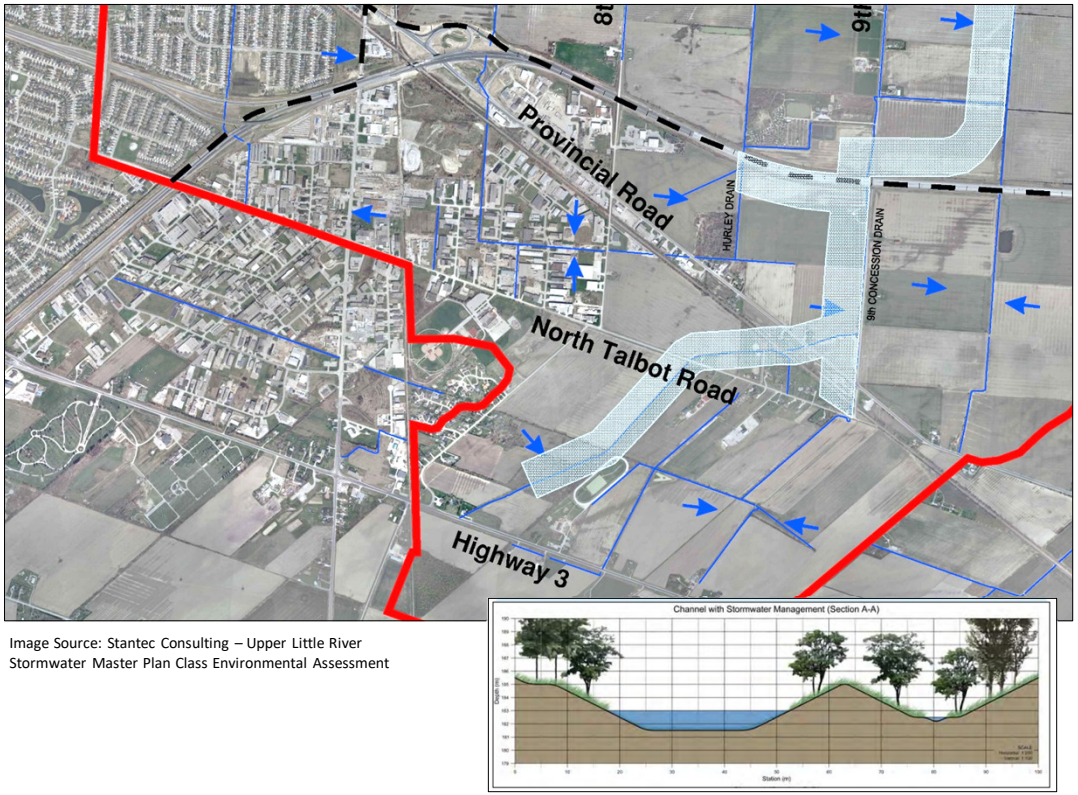

Image Source: Stantec Consulting – Upper Little River Stormwater Master Plan Class Environmental Assessment

Other Relevant Studies

- Howard Bouffard Master Drainage Study (www.lasalle.ca/hbmds)
- Sandwich South Master Servicing Report, Little River Floodplain Mapping
- Town of Tecumseh County Road 42 Master Plan
- City of Windsor County Road 42 Secondary Plan