MUNICIPALITY OF LAMBTON SHORES

STORMWATER MASTER PLAN

TOWN OF FOREST

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STORMWATER MASTER PLAN

TOWN OF FOREST

DRAFT

October 8, 2026

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File No. 25033

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Appendix C – Consultation

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Acronyms

ANSI - Area of Natural and Scientific Interest
BMROSS - B. M. Ross and Associates Limited
SCA - Species Conservation Act
ECCC - Environment and Climate Change Canada
EA - Environmental Assessment
ESR - Environmental Study Report
CWA - Clean Water Act
DFO - Department of Fisheries and Oceans Canada
HVA - Highly Vulnerable Aquifer
LAWSS - Lambton Area Water Supply System
LS - Lambton Shores
NHIC - Natural Heritage Information Centre
MCM - Ministry of Citizenship and Multiculturalism
MECP - Ministry of Environment and Conservation and Parks
MNR - Ministry of Natural Resources
MP - Master Plan
MCEA - Municipal Class Environmental Assessment
SARA - Species at Risk Act
SGRA - Significant Groundwater Recharge Area
SCRCA - St. Clair Region Conservation Authority
WHPA - Wellhead Protection Area
ZBL - Zoning By-Law

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File No. 25033

MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN
TOWN OF FOREST

1.0 INTRODUCTION

1.1 Project Introduction

The Municipality of Lambton Shores initiated a Municipal Class Environmental Assessment (Class EA) study process in April 2025 to develop a Stormwater Master Plan for the Community of Forest. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. When completed, the Master Plan will recommend a stormwater servicing strategy that could be implemented in phases, as determined by need, to address existing problem areas identified by residents. The study process followed the procedures set out in the MCEA document dated June 2000, as amended in 2007, 2011, 2015, 2023 and 2024 (Municipal Engineers Association, 2000). B. M. Ross and Associates Limited (BMROSS) was engaged to conduct the investigation on behalf of Lambton Shores.

1.2 General Description of Master Plans

Master Plans are long-range plans which integrate infrastructure requirements for existing and future land uses with environmental assessment planning principles (Municipal Engineers Association, 2000). These plans examine existing infrastructure systems within defined areas in order to provide a framework for planning subsequent works. Master Plans typically exhibit several common characteristics. They:

- Address the key principles of successful environmental planning;
- Provide a strategic level assessment of various options to better address overall system needs, potential impacts, and mitigation;
- Address at least the first two phases of the MCEA process;
- Are generally long-term in nature;
- Apply a system-wide approach to planning which relates infrastructure either geographically or by a particular function;

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- Recommend an infrastructure servicing plan which can be implemented through the completion of separate projects; and
- Include descriptions of the specific projects needed to implement the Master Plan.

1.3 Integration with the Class EA Process

1.3.1 Class EA Project Phases

The Master Plan has been completed in accordance with the planning and design process of the MCEA. The MCEA is an approved planning document which describes the environmental assessment process that proponents must follow in order to meet the requirements of the Environmental Assessment Act (EA Act) (Municipal Engineers Association, 2000). The MCEA approach allows for the evaluation of alternative methods of carrying out a project and identifies potential environmental impacts.

The MCEA planning process is divided into five phases which are described below and illustrated in Figure 1.1.

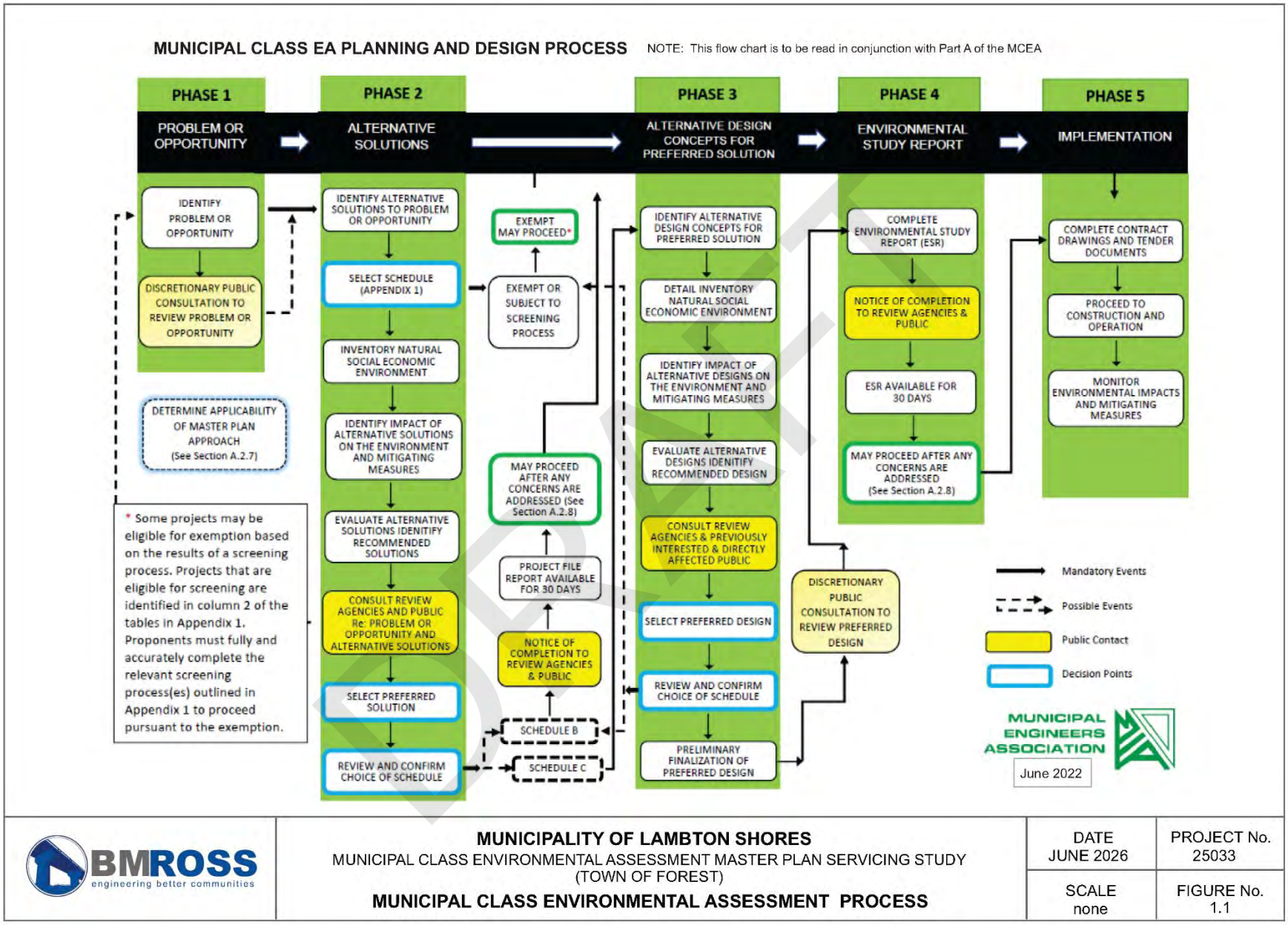
- Phase 1 - Problem or opportunity identification.
- Phase 2 - Evaluation of alternative solutions to the defined problems and selection of a preferred solution.
- Phase 3 - Identification and evaluation of alternative design concepts and selection of a preferred design concept.
- Phase 4 - Preparation and submission of an Environmental Study Report (ESR) for Stakeholder review.
- Phase 5 - Implementation of the preferred alternative and monitoring of any impacts.

1.3.2 Classification of Project Schedules

Projects are classified into different project schedules according to the potential complexity and the degree of environmental impacts that could be associated with the project. Four schedules are included in the MCEA process:

- Exempt,
- Exempt following completion of the archaeological potential screening (ASP) and/or collector road screening,
- Schedule B – Projects that are approved following the completion of a screening process that incorporates Phases 1 and 2 of the MCEA process as a minimum, and
- Schedule C – Projects that are approved subject to following the full MCEA process.

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MUNICIPALITY OF LAMBTON SHORES
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY
(TOWN OF FOREST)
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PROCESS

DATE	PROJECT No.
JUNE 2026	25033
SCALE	FIGURE No.
none	1.1

The MCEA process is self-regulating, and municipalities are expected to identify the appropriate level of environmental assessment based upon the project and alternatives they are considering.

1.4 Master Plan Framework

1.4.1 Alternative Approaches

Given the broad nature and scope of Master Plans, the MCEA document provides proponents with four approaches to conducting Master Plan investigations. Proponents are encouraged to adapt and tailor the master planning process to suit the needs of the study being undertaken providing that, at a minimum, the assessment involves an evaluation of servicing deficiencies followed by a review of possible solutions (i.e., Phases 1 and 2 of the MCEA process).

Table 1.1 summarizes the primary components associated with each of the four Master Plan approaches outlined within the MCEA document.

Table 1.1 - Summary of MCEA Master Plan Approaches

Approach	Key Characteristics	Project Implementation
1	• Master Plan prepared at the conclusion of Phases 1 and 2 of the MCEA process. • Completed at a broad level of assessment. • Serves as basis for future investigations for specific Schedule B and C projects.	• Schedule B and C projects require further Class EA investigations.
2	• Master Plan prepared at the conclusion of Phases 1 and 2 of MCEA process. • Includes a more detailed level of investigation and consultation completed, such that it satisfies requirements for Schedule B screenings. • Final public notice for Master Plan serves as Notice of Completion for individual Schedule B projects.	• Schedule B projects are approved. • Schedule C projects must complete Phases 3 and 4 of the Class EA process.
3	• Master Plan prepared at the conclusion of Phase 4 of the MCEA process. • Level of review and consultation encompasses Phases 1 to 4 of the MCEA process. • Final public notice for Master Plan serves as Notice of Completion for Schedule B and C projects reviewed through the Master Plan.	• Further Class EA investigations are not required for projects reviewed through the Master Plan.

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Approach	Key Characteristics	Project Implementation
4	• Integration of Master Plan with associated Planning Act approvals. • Establishes need and justification in a very broad context. • Best suited when planning for a significant geographical area for an extended time period.	• Depending on level of investigation associated with the Master Plan, Class EA investigations may be needed for specific projects.

1.4.2 Applied Framework

For the purposes of the Forest Stormwater Master Plan, it was determined during the course of the investigation that Approach 2 would be the most appropriate planning framework to utilize for this assessment. The Stormwater Master Plan therefore, defines broad infrastructure requirements within the study area but also provides sufficient detail to satisfy future site-specific issues associated with the implementation of project specific components.

The decision to apply Approach 2 for this Master Plan was based upon the following rationale:

- The level of consultation completed in conjunction with the Master Plan was sufficient to satisfy the MEA Class EA process associated with Schedule B Activities;
- A Schedule B project was identified as a potential solution to resolve stormwater deficiencies identified within several of the problem areas. Utilization of this approach will permit implementation of these projects upon completion of the Master Plan without the requirement for additional environmental assessment.

Upon completion, the Master Plan document becomes the basis for Schedule B projects identified as part of the preferred servicing plan. Schedule B projects will be pre-approved based upon consultation completed as part of this Master Plan.

1.4.3 Consideration of Climate Change

As part of this Master Plan, the impacts associated with climate change will be considered. Climate change phenomena include:

- Changes in the frequency, intensity and duration of precipitation, wind and heat events.
- Changes in soil moisture.
- Changes in sea/lake levels.
- Shifts in plant growth and growing seasons.
- Changes in the geographic extent of species ranges and habitat.

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1.4.4 Approval Requirements

The Forest Stormwater Master Plan is subject to approval from the Municipality of Lambton Shores (LS) but does not require formal approval under the EA Act. The Master Plan will be made available for public review and, subject to consideration of the proposed works and any comments received through consultation, the Master Plan will be subsequently approved by Municipal Council. Regulatory approvals will be required from federal and provincial review agencies for some components of the work, and will be obtained once final engineering designs have been completed; prior to project implementation.

2.0 STUDY AREA AND EXISTING CONDITIONS

2.1 Municipality of Lambton Shores

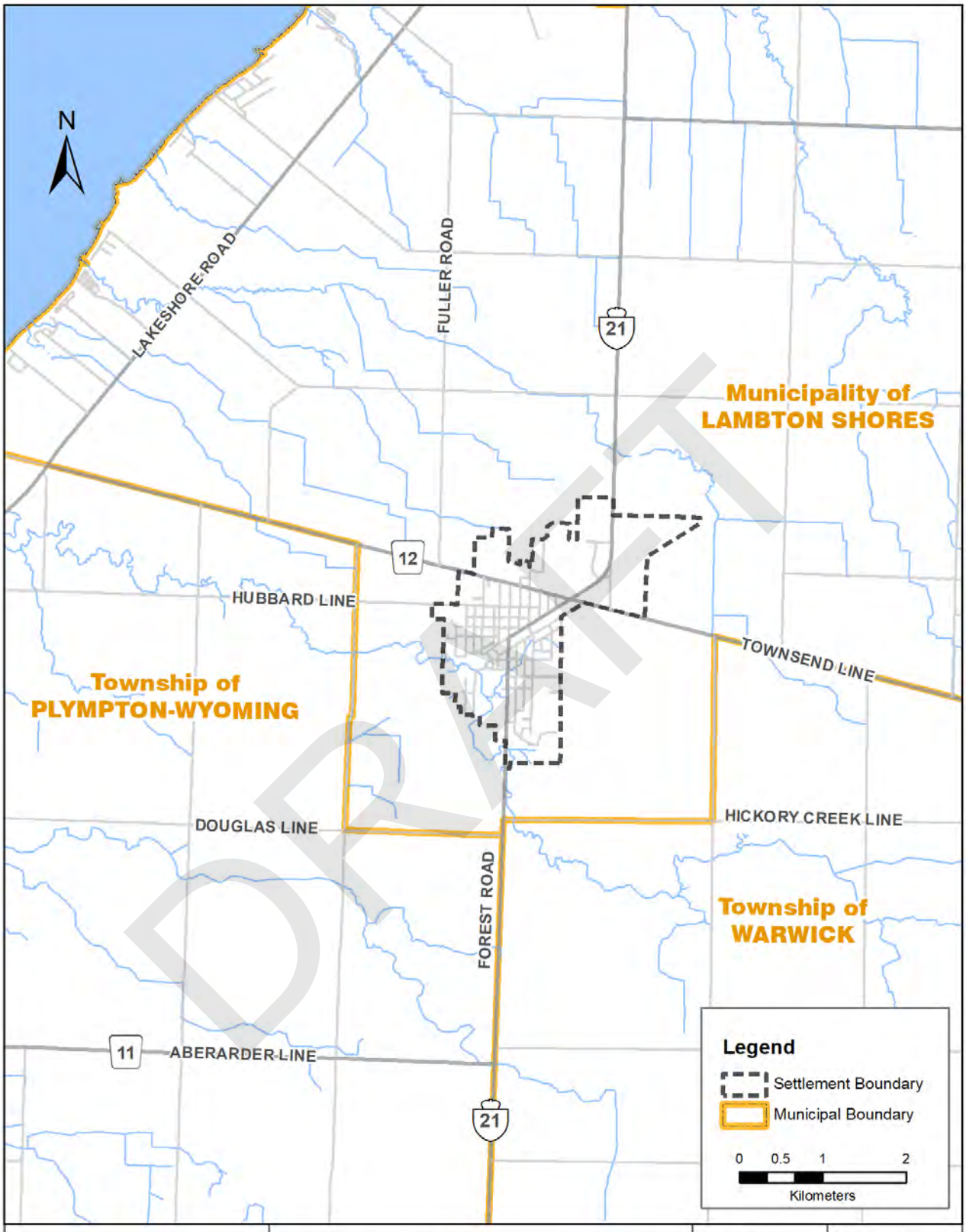
In January 2001, the Towns of Bosanquet and Forest, and the Villages of Thedford, Arkona, and Grand Bend were amalgamated to form the Municipality of Lambton Shores. The new Municipality has a land base of approximately 330 km^2 with a population of approximately 12,000 permanent residents, and additional seasonal population of around 25,000. In general, Lambton Shores is comprised of a number of small urban settlement areas dispersed throughout a predominately rural landscape. A significant amount of seasonal development is situated along the Lake Huron shoreline and a large rural area extends inland from the shoreline of Lake Huron. The new Municipality incorporates a ward structure which generally corresponds to the jurisdictional boundaries of the former incorporated municipalities.

2.2 Community of Forest

The community of Forest is situated at the south-central extent of Lambton Shores, bounded by Plympton-Wyoming to the southwest and the Township of Warwick to the southeast. Forest is one of the largest settlement areas in Lambton Shores with a population of approximately 2,500 residents (2021, Census) and serves as a resource centre for the surrounding agricultural community.

Forest can be characterized as a low-density residential community which incorporates a traditional downtown commercial core, a limited amount of highway commercial development along the Highway 21 corridor, and an established industrial area in the northeast part of the community. New residential growth has been primarily focussed in the southeast and northwest parts of the community where vacant land is currently designated for residential development. In general, the scale and nature of development evident in Forest is consistent with smaller urban communities throughout Midwestern Ontario. Figure 2.1 shows the location of Lambton Shores and the community of Forest. Figure 2.2 illustrates the community of Forest.

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N
LAKESHORE ROAD
FULLER ROAD
21
Municipality of
LAMBTON SHORES
12
HUBBARD LINE
TOWNSEND LINE
Township of
PLYMPTON-WYOMING
DOUGLAS LINE
HICKORY CREEK LINE
FOREST ROAD
Township of
WARWICK
11
ABERARDER LINE
21
Legend
Settlement Boundary
Municipal Boundary
0 0.5 1 2
Kilometers
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MUNICIPAL CLASS ENVIRONMENTAL
ASSESSMENT MASTER PLAN SERVICING STUDY
(TOWN OF FOREST)
GENERAL LOCATION
DATE
June 2026
PROJECT #
25033
SCALE
see bar
FIGURE No.
2.1



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MUNICIPALITY OF LAMBTON SHORES
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY (TOWN OF FOREST)
STUDY AREA

DATE	PROJECT #
June 2026	25033
SCALE	FIGURE No.
see bar	2.2

2.3 Background Review

A background review was carried out to characterize the project area and to identify factors that could influence the selection of alternative solutions to the defined problems. The background review for this Class EA process incorporated these activities:

- Development of a general description of the study area and the Community of Forest.
- Assembly of information on the environmental setting and existing infrastructure.
- Review of previous studies and reports pertaining to the Town of Forest, including Municipal Drain Reports.
- Preliminary assessment of the identified deficiencies and potential remediation.

A desktop analysis of the project setting was completed as part of the background review. The following represents key sources of information for the analysis:

- B. M. Ross and Associates Limited - Files and related studies.
- St. Clair Region Conservation Authority - Website and Mapping Services.
- Chapman, L.J. and Putnam, D.F. The Physiography of Southern Ontario.
- Government of Canada. Species at Risk Public Registry website.
- Ministry of Natural Resources - Natural Heritage Information Centre (website).
- Lambton County Official Plan and Lambton Shores Zoning By-Law.
- Municipality of Lambton Shores - Files and discussions with staff.

2.4 Natural Features

2.4.1 General

The community of Forest is situated within a primarily rural landscape. The surrounding area is composed of agricultural lands with some remnant woodlots at the rear of farm acreages. Within the urban settlement boundary of Forest, there are several wooded areas adjacent to the fairgrounds, along Hickory Creek and adjacent to the Forest Golf and County Club at the southwest extent of the community.

2.4.2 General Physiography

The community of Forest is located on the boundary between the bevelled till plains that comprise much of the physiography of Lambton County, and the Wyoming Moraine, which extends south through the southwest quadrant of Forest. Beveled till plains are relatively flat, reworked till plains that were deposited and then over-ridden by a subsequent glacial event (Thames-Sydenham and Region, Source Protection Report). The Wyoming Moraine is a ridge of material formed as glaciers pushed through the region and then were deposited as the glaciers retreated.

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The topography is relatively flat throughout the study area with some relief along Hickory Creek, which is located adjacent to the southwest extent of Forest. A number of municipal drains also extend through the community, serving the agricultural lands located adjacent to the settlement boundary. The geology of the study area is shown on a Figure found in Appendix 'B'.

2.4.3 Watercourses

a) General

Within the boundaries of the study area, there are a number of open and closed municipal drains. The drains collect runoff from the area and eventually discharge to larger drains or watercourses. No sensitive species have been reported within the drains.

Table 2.1 outlines municipal drains throughout the study area and identifies the drain type or DFO municipal drain classification.

Table 2.1 - Drains Located within Study Area

Name of Drain	Drain Type	DFO Drain Classification
John Coultis Drain	Closed/tiled municipal drain	Not rated
McDonald Drain	Closed/tiled municipal drain	Not rated
North Street Drain	Open	Class F: intermittent
Miles-Walker Drain	Closed/tiled municipal drain	Not rated
Alexander Drain	Open municipal drain	Not rated
DeJersey Drain	Open/Closed municipal drain	Not rated
Lougheed Drain	Open municipal drain	Not rated
Kernohan Drain	Closed/tiled municipal drain	Not rated
Todd Drain	Open and Closed/tiled municipal drain	Not rated
Larham Drain	N/A	Class C: permanent, no sensitive fish species, warmwater
Broadway Street Drain	Open and Closed/tiled municipal drain	Not rated
Goodhand Drain	Closed/tiled municipal drain	Not rated
Willemse Drain	Closed/tiled municipal drain	Not rated

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b) Open Municipal Drains

The Alexander Drain is an open municipal drain that flows from the east end of Forest to the west end, outletting to Hickory Creek. Vegetation along the drain consists of mature native and introduced tree species including silver maple (*Acer saccharinum*), black walnut (*Juglans nigra*), and black willow (*Salix nigra)* and native and invasive shrubs and plants including highbush cranberry (*Viburnum trilobum*), multifloral rose (*Rosa multiflora*), wood forget-me-nots (*Myosotis sylvatica)* and goutweed (*Aegopodium podagraria)*. Erosion is present in several locations along the watercourse. Aquatic habitat features are present within the drain including gravel deposits, woody debris and deep pools. During low flow conditions, water depths are shallow and substrates consist of gravel and cobble.

The Alexander Drain outlets to Hickory Creek which is located on the west end of Forest. Hickory Creek has a warmwater thermal regime and supports a variety of common fish species including the blackside darter (*Percina maculata*), channel catfish (*Ictalurus punctatus*), smallmouth bass (*Micropterus dolomieu*) and white sucker (*Catostomus commersonii*) (Land Information Ontario, 2023). Aquatic species at risk have not been recorded within the watercourse (Department of Fisheries and Oceans, 2024). Hickory Creek is located within the Plympton Shoreline Tributaries subwatershed in the jurisdiction of the St. Clair Region Conservation Authority (SCRCA) (St. Clair Region Conservation Authority, 2018). The subwatershed supports a variety of aquatic life including thirty-two fish species and three freshwater mussel species.

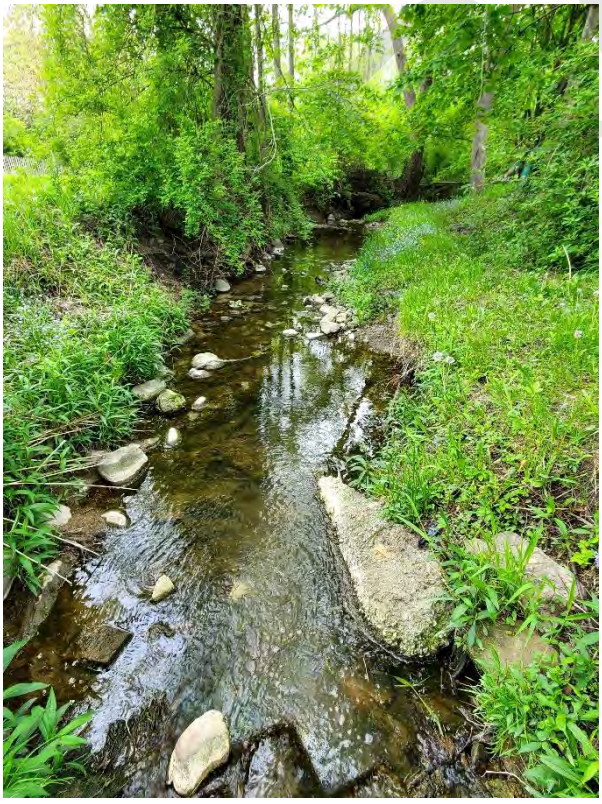
The Alexander Drain and Hickory Creek are regulated by the SCRCA under O. Reg. 147/06 (Regulation of Development, Interference, with Wetlands and Alterations to Shorelines and Watercourses). Site alteration and development within watercourses and within 15m of watercourses is regulated by SCRCA requiring a permit prior to commencement (St. Clair Region Conservation Authority, 2018).

Photos of the Alexander Drain are included below.

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Photos of Alexander Drain on May 27, 2026







2.4.4 Natural Areas

Table 2.2 summarizes existing natural areas that were identified through a search of the Natural Heritage Information Centre (NHIC) database:

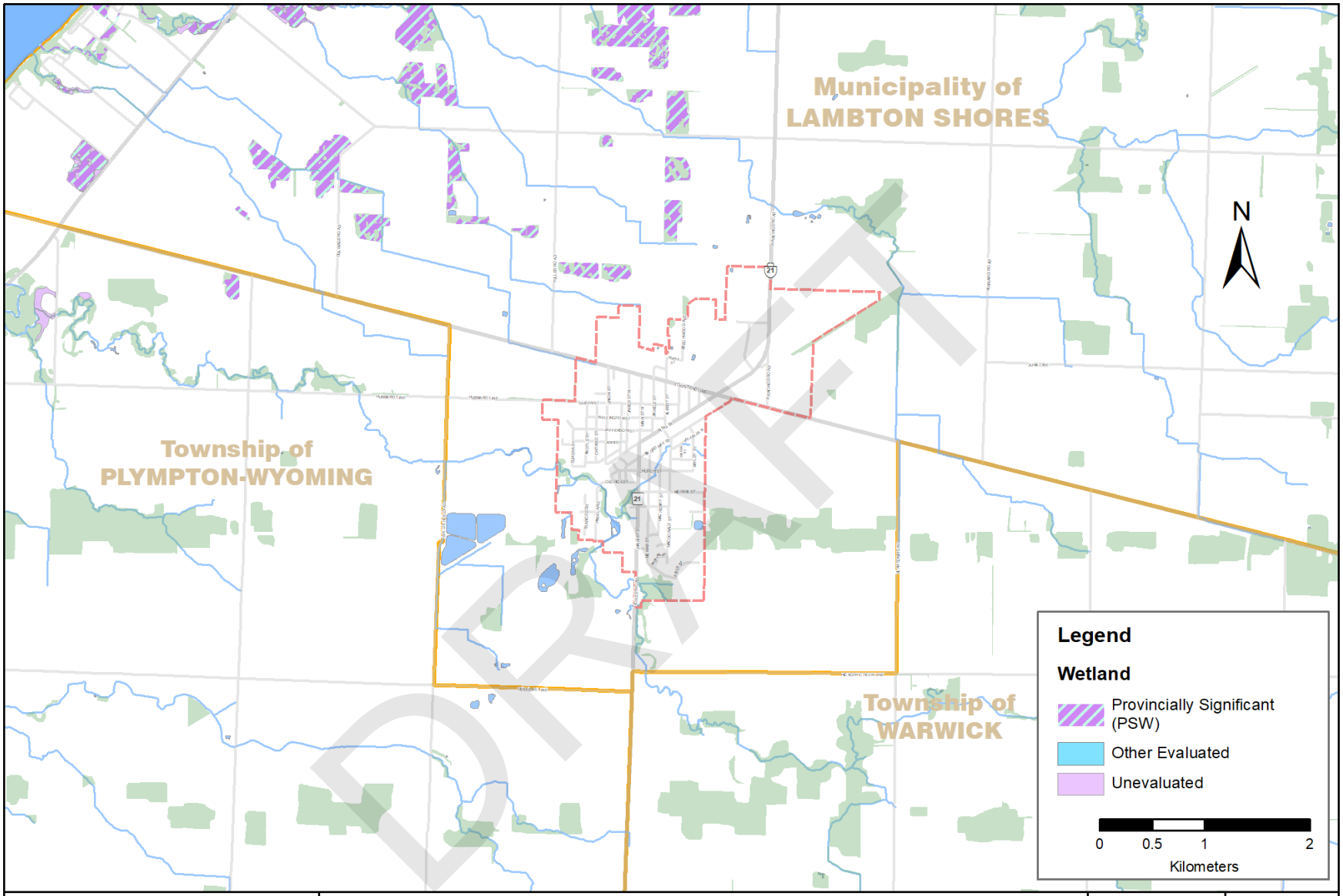
Table 2.2: Natural Areas within Proximity to Forest

Type	Name	Location	Description
Natural Area	Hickory Creek	Southwest corner of Forest.	Warmwater stream that supports common fish species.
Natural Area	Alexander Drain	South end of Forest.	Municipal drain that outlets to Hickory Creek. Unknown thermal regime and fish community.
Natural Area	Cedar Point, Dolmage & Rawlings Road Wetland Complex (SC 56)	North of project limits.	Provincially significant wetland. Wetland type is a swamp.
Woodland	Significant woodland designated by Lambton Shores Official Plan.	Along Hickory Creek floodplain and east end of Forest.	Ecologically important forests identified in Lambton County Natural Heritage Study.
Conservation Area	Esli Dodge Conservation Area	South end of Forest.	Open park area located along Hickory Creek.

As previously noted, Hickory Creek and the Alexander Drain flow through Forest. A provincially significant wetland is located north of the project limits and will not be impacted by the project (Ministry of Natural Resources, 2023). Significant woodlands are located at the south end of Forest, including several fragmented woodlands located along the Hickory Creek floodplain and a large woodland located directly east of Forest (Municipality of Lambton Shores, 2015). The Esli Dodge Conservation Area is located within Forest and provides an open park area for the general public.

Figure 2.3 illustrates natural features in proximity to the study area.

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MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY
(TOWN OF FOREST)
NATURAL HERITAGE FEATURES

Date: June 2026	PROJECT # 25033
SCALE 1 : 50,000	FIGURE No. 2.3

2.4.5 Species at Risk

An evaluation for the presence of significant species and their associated habitats within the study area has been incorporated into the project planning process. A review of available information on species and habitat occurrences determined that the study area may contain species and/or associated habitats that are legally protected under Provincial and Federal species at risk legislation. The protection for species at risk and their associated habitats is directed by the following federal and provincial legislation:

- The Federal Species at Risk Act, 2002 (SARA) provides for the recovery and legal protection of listed wildlife species and associated critical habitats that are extirpated, endangered, threatened or of special concern and secures the necessary actions for their recovery on lands not federally owned, only aquatic species, and bird species included in the Migratory Bird Convention Act (1994), are legally protected; and

The Provincial Species Conservation Act, 2025 (SCA) provides legal protection of endangered and threatened species and their associated habitat in Ontario.

Based on the information available for the occurrence of species at risk and their associated habitats from the following sources; a summary of federally and provincially recognized species with the potential to be present within the project study area are listed in Table 2.3:

- Ministry of Environment, Conservation and Parks (MECP), Protected Species in Ontario List (Government of Ontario, 2025)
- Natural Heritage Information Centre, Make a Natural Heritage Map (MNR, 2017a). (Study area located within NHIC 1km grid: 17MH1771, 17MH1871 & 17MH1872)
- Environment Canada, Species at Risk Public Registry. SARA Schedule 1 Species List (Environment Canada, 2017)

The study area is located within the County of Lambton. The County incorporates a large area and a wide variety of environments that include both terrestrial and aquatic habitat. Species listed in Table 2.3 were generated based on their occurrence within the entire county and may not necessarily occur within the study area.

Based on habitat present within the project study area, species at risk may inhabit significant woodlands and the Hickory Creek floodplain. A few of the identified species may inhabit manmade structures (i.e. houses or bridges) or agricultural fields that are present within the study area.

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Table 2.3: Potential Species at Risk within Lambton County

	Species		Status Designation		Suitable Habitat in the Study Area
	Common Name	Scientific Name	SARA* Schedule 1 (Federal)	SCA** (Provincial)	
Birds	Acadian flycatcher	*Empidonax virescens*	Endangered	Endangered	No
	Bank swallow	*Riparia riparia*	Threatened	Threatened	No
	Barn owl	*Tyto alba*	Endangered	Endangered	No
	Barn swallow	*Hirundo rustica*	Threatened	-	Yes – manmade structures
	Bobolink	*Dolichonyx oryzivorus*	Threatened	Threatened	Yes – agricultural fields
	Cerulean warbler	*Setophaga cerulea*	Endangered	Threatened	Yes – significant woodlands
	Chimney swift	*Chaetura pelagica*	Threatened	Threatened	Yes - chimneys
	Eastern Meadowlark	*Sturnella magna*	Threatened	Threatened	Yes – agricultural fields
	Eastern whip-poor-will	*Antrostomus vociferus*	Threatened	-	Yes – significant woodlands
	Golden-winged Warbler	*Vermivora chrysoptera*	Threatened	-	Yes – significant woodlands
	Henslow's sparrow	*Ammodramus henslowii*	Endangered	Endangered	No
	Least Bittern	*Botaurus exilis*	Threatened	Threatened	No
	Louisiana Waterthrush	*Parkesia motacilla*	Threatened	Threatened	Yes – Hickory Creek floodplain
	Northern bobwhite	*Colinus virginianus*	Endangered	Endangered	No
	Prothonotary warbler	*Protonotaria citrea*	Endangered	Endangered	Yes – significant woodlands
	Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	Endangered	Yes – significant woodlands
	Short-eared owl	*Asio flammeus*	Special Concern	Threatened	No
	Wood Thrush	*Hylocichla mustelina*	Threatened	-	Yes – significant woodlands
	Yellow-breasted chat	*Icteria virens*	Endangered	Endangered	Yes – significant woodlands
Mammals	Little brown myotis	*Myotis lucifugus*	Endangered	Endangered	Yes – manmade structures
Plants	Butternut	*Juglans cinerea*	Endangered	Endangered	Yes – significant woodlands
Reptiles & Amphibians	Western Chorus Frog	*Pseudacris triseriata*	Threatened	-	Yes – significant woodlands

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a) Breeding Birds

The Atlas of Breeding Birds of Ontario (2001-2005) was used to identify the bird species with confirmed, probable, and possible breeding habitat in proximity to the study area. The study areas are within the 100 km^2 areas identified by the Atlas as Square 17MH17 in Region 3: Lambton (Bird Studies Canada, 2009).

A total of 34 species of breeding birds were confirmed to have habitat within the area. In addition to the confirmed species, 20 species are considered to have probable, and 24 species to have possible breeding habitats in the area.

The survey area includes key habitat for identified species, such as forest (in all stages of growth), riverine areas, agricultural areas, wetlands, and shoreline areas.

2.5 Cultural Environment

2.5.1 Archaeological Resources

Based upon input received from the Ministry of Citizenship and Multiculturalism (MCM) an assessment of potential impacts to archaeological resources, built heritage resources, and cultural heritage landscapes, must be undertaken in conjunction with the Class Environmental Assessment process. To aid in this review, the Ministry provides screening tools to complete for each of these categories. Copies of the Screening Check Lists are included within Appendix A. Based upon the results of the Archaeological Potential Checklist; a Stage 1 & 2 Archaeological Assessment may need to be completed for some of the projects if the recommended improvements involve disturbance of previously undisturbed native soils.

2.5.2 Built Heritage Resources

A Cultural Heritage Landscape is defined within the 2024 Provincial Planning Statement (PPS) as: “A defined geographic area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association.” Section 4.6 of the PPS states that “Protected heritage property, which may contain built heritage resources or cultural heritage landscapes, shall be conserved.” There are no designated Cultural Heritage Landscapes within the Community of Forest.

MCM has provided a screening tool to determine the presence of Built Heritage Resources. Titled, Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes, this tool was used to determine if any of the proposed stormwater upgrades would impact existing Built Heritage Resources or Cultural Heritage Landscapes.

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2.6 Climate Change

As part of the MCEA process, potential impacts associated with climate change need to be evaluated. Some of the phenomena associated with climate change that may be considered during impact evaluations include:

- Changes in frequency, intensity, and duration of precipitation, wind, and heat events;
- Changes in soil moisture;
- Changes in sea/lake levels;
- Shifts in plant growth and growing seasons; and
- Changes in the geographic extent of species ranges and habitat.

There are two approaches that can be utilized to address climate change in project planning. These are as follows:

- Reducing a project's impact on climate change (climate change mitigation). Mitigation of climate change impacts may include:
  - Reducing greenhouse gas emissions related to the project.
  - Alternative methods of completing the project that would reduce any adverse contributions to climate change.
- Increasing the project's and local ecosystem's resilience to climate change (climate change adaptation). Considerations related to climate adaptation include:
  - How vulnerable is the project to climate-related severe events?
  - Are there alternative methods of carrying out the project that would reduce the negative impacts of climate change on the project?

Through the evaluation of alternatives as part of the second phase of the MCEA, consideration of each of these approaches should be completed and included in the final determination of the preferred approach to completing a project.

2.7 Clean Water Act (Source Water Protection)

The intent of the Clean Water Act (CWA), 2006 is to "protect existing and future drinking water" sources in Ontario (Ministry of Environment, Conservation and Parks, 2006). Under the Act, source protection areas and regions were established, giving Conservation Authorities the duties and power of a drinking water source protection authority. These duties focus on the development, implementation, monitoring and enforcement of information and policies related to source water protection.

Forest is located within the St. Clair Region Source Protection Area, in the Thames-Sydenham & Region Source Protection Region. The Source Protection Plan (SPP) for this region came into effect in December of 2015, under the Ontario Clean Water Act

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(Source Protection Committee, 2015). The Plan outlines the policies designed to protect municipal drinking water sources from threats, including contamination and overuse. The approved assessment reports summarize watershed characteristics and drinking water threats.

The Community of Forest is serviced by the Lambton Area Water Supply System (LAWSS) which is a surface water intake system drawing raw water from Lake Huron at Point Edward. The LAWSS system serves a population of over 10,000 including seven separate municipal drinking water systems. The West Lambton Shores Drinking Water system services Forest, the part of the Lake Huron shoreline and Hwy 21 from Townsend Line to Ravenswood. Water quality from water sourced by the LAWSS is considered excellent as the pipe is located far offshore and deep within the lake. The intake protection zones for the LAWSS are not located within the study area.

There are no municipal wells or Wellhead Protection Areas within the Forest settlement area; however, portions of the study area are located within Significant Groundwater Recharge Areas (SGRA) or Highly Vulnerable Aquifers (HVA). These areas are typically associated with the Wyoming Moraine and are illustrated on Figure 2.4.

2.8 Socio-Economic Environment

2.8.1 Provincial Planning Statement (2024)

The Provincial Planning Statement (PPS) was issued under Section 3 of the Planning Act and provides policy direction on matters of provincial interest (Province of Ontario, 2024). A number of the policies contained within the PPS are relevant to the current application. A summary of the applicable policies is included below:

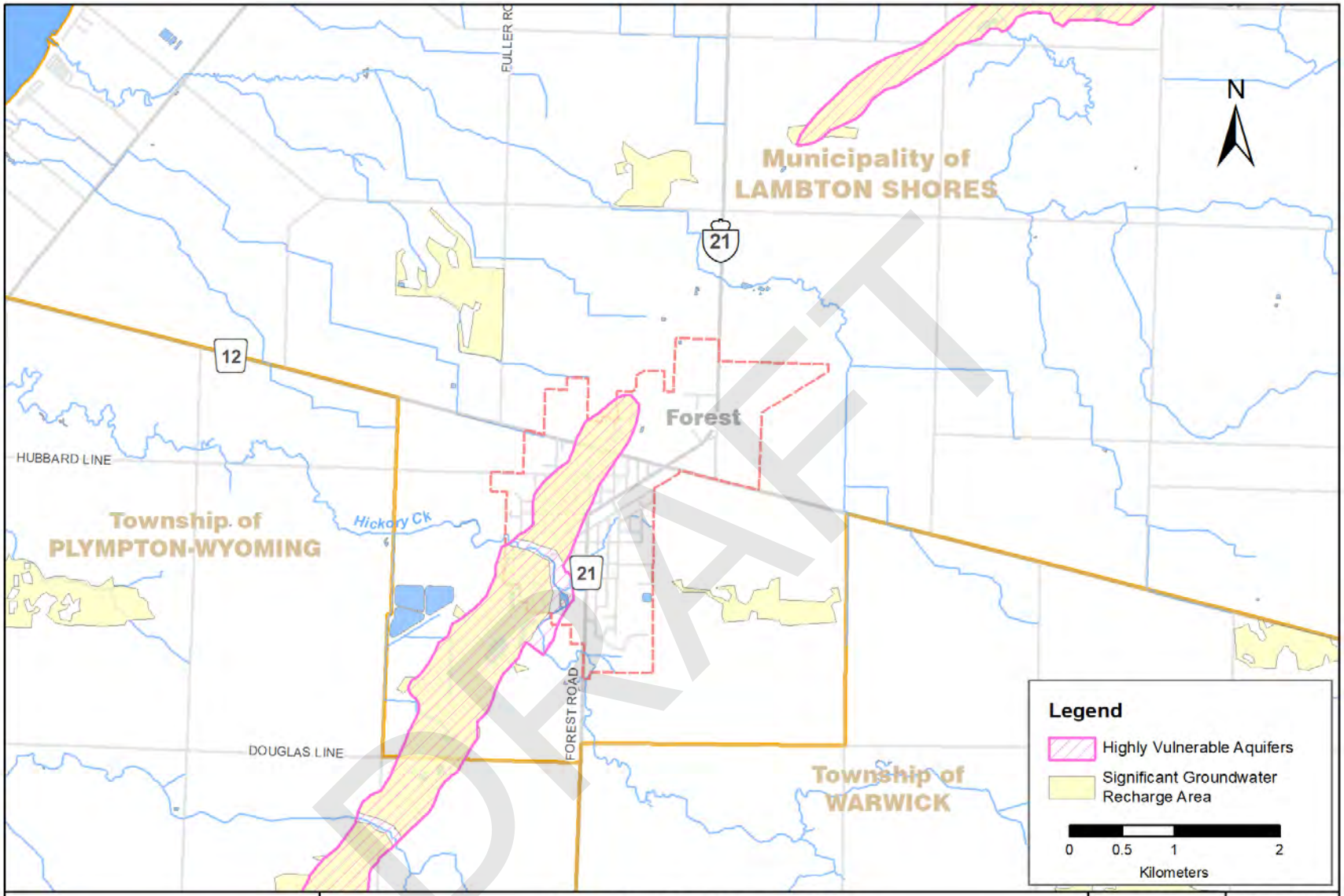
Chapter 3 of the PPS deals with Infrastructure and Facilities. Section 3.1 contains general policies including the following:

1. *Infrastructure* and *public service facilities* shall be provided in an efficient manner while accommodating projected needs.

   Planning for *infrastructure* and *public service facilities* shall be coordinated and integrated with land use planning and growth management so that they:

   a) are financially viable over their life cycle, which may be demonstrated through asset management planning;
   b) leverage the capacity of development proponents, where appropriate; and
   c) are available to meet current and projected needs.

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MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY
(TOWN OF FOREST)

SOURCEWATER PROTECTION AREAS

DATE	PROJECT #
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SCALE	FIGURE No.
1 : 50,000	2.4

Section 3.6 pertains to Sewage, Water and Stormwater

1. Planning for *sewage and water services* shall:
   a) accommodate forecasted growth in a timely 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*;
   b) ensure that these services 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 life cycle;
      3. protects human health and safety, and the natural environment, including the *quality and quantity of water*; and
      4. aligns with comprehensive municipal planning for these services, where applicable.

8. Planning for stormwater management shall:
   a) be integrated with planning for sewage and water services and ensure that systems are optimized, retrofitted as appropriate, feasible and financially viable over their full life cycle;
   b) minimize, or, where possible, prevent or reduce increases in stormwater volumes and contaminant loads;
   c) minimize erosion and changes in water balance including through the use of green infrastructure;
   d) mitigate risks to human health, safety, property and the environment;
   e) maximize the extent and function of vegetative and pervious surfaces;
   f) promote best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development; and
   g) align with any comprehensive municipal plans for stormwater management that consider cumulative impacts of stormwater from development on a watershed scale.

2.8.2 Lambton Shores Official Plan

Section 13 of the Official Plan provides policies related to Infrastructure and Public Service Facilities, including roads, sewage and water servicing, as well as stormwater management.

Section 13.4 provides policies specifically related to stormwater as follows:

13.4.1 Storm Water Management

The Lambton Shores' Official Plan stormwater management (SWM) policies are based on the following general policy from MOE's Stormwater Management Planning and Design Manual, 2003:

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> "Good planning which has regard for the need for stormwater management at the outset, combined with a recognition of the ecological attributes and functions of the watershed, provides the fundamental basis for achieving stormwater quality and quantity improvement efficiently and cost effectively. At this scale, stormwater management opportunities afforded by the physiographic and ecological features of the watershed can be identified and capitalized upon. Areas where soils are permeable and suited to infiltration, existing vegetation communities which can function as biofilters and landforms that are naturally conducive to the implementation of detention initiatives will all be identified along with a suite of other characteristics which may be preserved or modified to achieve stormwater management objectives. The watershed planning approach, which is now ingrained within the municipal planning process, ensures that the important features and other interrelated factors are identified and understood at a regional scale. As a result, stormwater management opportunities afforded by the existing natural heritage features and functional system are identified early in the process. This helps ensure that these opportunities will not be overlooked or lost when stormwater management initiatives are implemented at a site-specific scale."

Lambton Shores requires SWM quality and quantity controls for all developments in accordance with Provincial policies/guidelines, this Official Plan and Conservation Authority policies. In addition, all SWM facilities will be designed to comply with the Municipality's "Municipal Development and Servicing Standards".

The Official Plan's SWM policies are based on the following objectives:

- Prevent loss of life and minimize property damage and health hazards caused by flooding, erosion, or other mismanagement of stormwater runoff, leading to the degradation of natural and man-made surface drainage features.
- Minimize inconvenience, damage, and maintain emergency access during periods of flooding and excessive surface ponding, either on-site or downstream of the subject lands.
- Protect, both in terms of quality and quantity, groundwater recharge and minimize impacts on local groundwater resources.
- Through promotion and efficient use of SWM techniques, protect and enhance hydrology, geomorphology, water quality and the quality of aquatic and fish habitat, allowing development to progress in an orderly, cost-effective, and environmentally sound fashion.
- Protect base flow and regulate water levels in receiving water systems by managing surface water resources and maintaining existing watershed boundaries and hydrologic and hydraulic functions.
- Minimize the effects of erosion and sediment transport from construction activities on sewerage systems, SWM systems and receiving water systems, by promoting the use of sediment and erosion control Best Management Practices (BMPs).

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- The Municipality recognizes that there are stormwater management issues in the existing developed areas of the Municipality. It is the Municipality's intention to address these existing issues as the needs arise in a comprehensive manner.

Planning for stormwater management shall:

- Be integrated with planning for water and wastewater;
- Be designed to Ministry standards respecting minimum quantity and quality standards;
- Promote water conservation and efficiency;
- Support the use of green infrastructure;
- Promote a healthier natural environment including water quantity and quality; and,
- Ensure financial viability of stormwater infrastructure.

2.8.3 Lambton Shores Zoning By-Law

Section 3 of the Lambton Shores Zoning By-law (ZBL) No. 1 of 2003 provides General Provisions related to implementation of the By-Law.

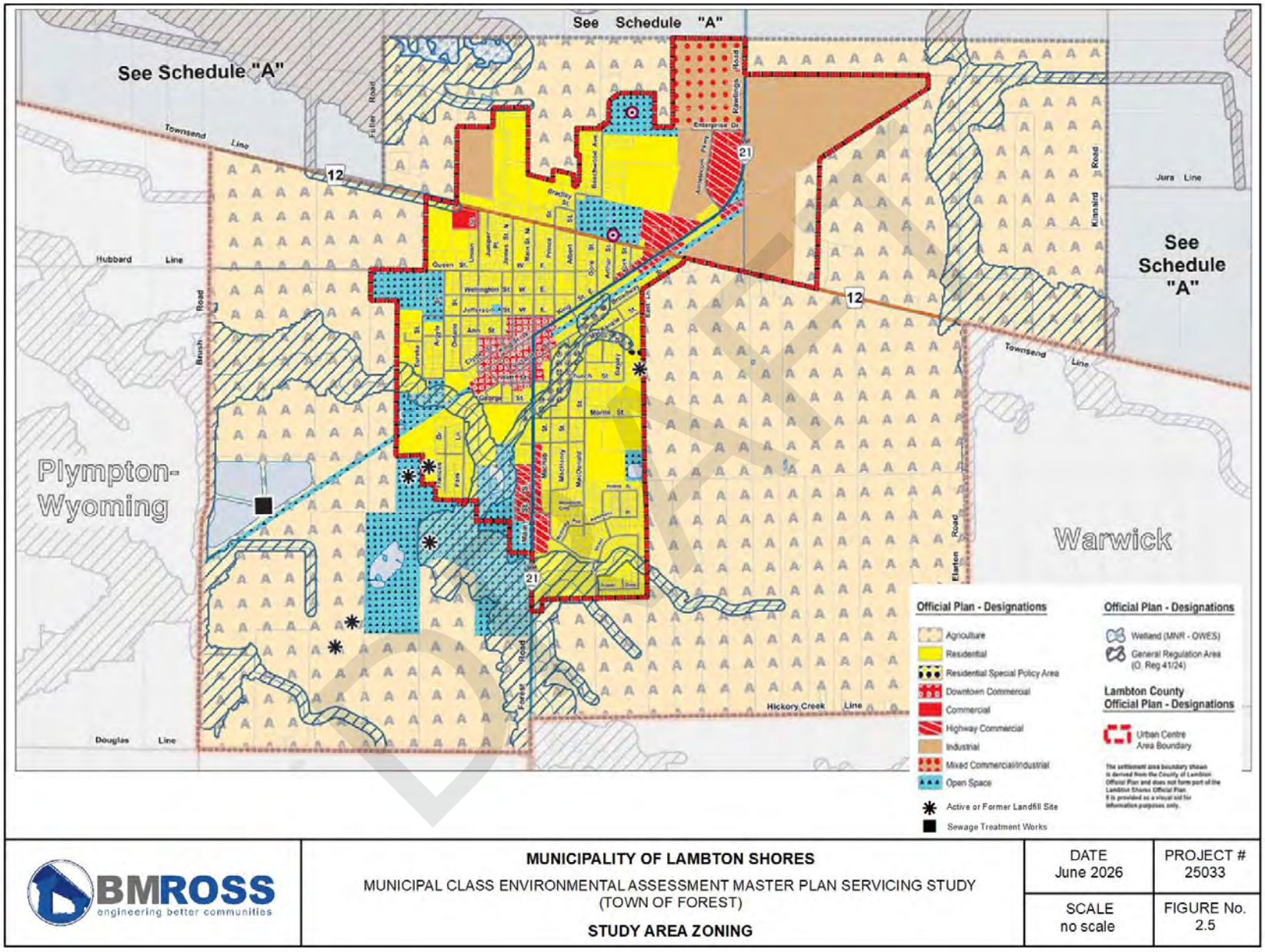
> ***3.1 Uses Permitted In All Zones***
>
> *The following Uses are Permitted in all Zones within the Corporation:*
>
> ***3.1.1 Services and Utilities***
>
> *Despite any other provisions of this By-law to the contrary, the Corporation of the Municipality of Lambton Shores, the County of Lambton and any Ministry of the Government of Canada or Province of Ontario (or A Public Agency) may for the purpose of the public service, use any land or any Building or Structure in any Zone in spite of the fact that such Use of any Building or Structure does not conform with the provisions of this By-law for such Zone only insofar as such Uses are for administrative or Office purposes.*

The above noted policy would apply to the installation of stormwater infrastructure within the community of Forest within any zone of the By-Law.

Figure 2.5 shows land use zones in Forest as shown in the Lambton Shores By-Law.

Copies of relevant planning documents are in Appendix B.

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MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY (TOWN OF FOREST)

STUDY AREA ZONING

DATE	PROJECT #
June 2026	25033
SCALE	FIGURE No.
no scale	2.5

3.0 CLASS EA MASTER PLAN PROCESS

3.1 Overview

The Municipality of Lambton Shores is developing a Stormwater Master Plan for the community of Forest to address problem drainage areas within the community and deficiencies present with existing drainage infrastructure. In order to address this situation, the Municipality authorized BMROSS to undertake a Stormwater Servicing Master Plan utilizing the Class EA planning process, to investigate potential outcomes associated with the study. The overall goal of the Master Planning process can be summarized as follows:

> *To develop a long-range Stormwater Master Plan for the community of Forest to address existing problem areas and deficiencies with existing drainage infrastructure. The recommendations will be considered in conjunction with other road and infrastructure needs within the study area and will be implemented over a 20 – 25 year timeframe.*

The following sections of this report document the environmental assessment process conducted during the Master Planning process, as well as the identification of a preferred outcome for the Master Plan. The key components of the process are summarized below:

- A description of the identified infrastructure deficiencies.
- Identification of practical options to resolve deficiencies in the long-term.
- An evaluation of potential impacts associated with the identified alternatives.
- Selection of a preferred infrastructure alternative for each component.
- Identification of a conceptual implementation plan.
- Synopsis of issues related to the implementation of the servicing plan.

3.2 Problem Identification

3.2.1 Inventory of Existing Stormwater Facilities

As part of the Master Plan Study process, an inventory of existing stormwater drainage infrastructure within the project study area was completed. The inventory included a review and inspection of existing facilities in order to identify the current age, capacity and general condition of the infrastructure. Current deficiencies were also noted.

3.2.2 Topographic Details

In support of the project BMROSS technical staff collected site data to confirm pipe sizes, structure types, gradients, inverts and connections within the stormwater collection system. CCTV videos were also collected of pipe interiors in some locations to determine condition and confirm gradients and connection points. This information was used to

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assist with developing the stormwater model and, with determining the boundaries of drainage catchments and sub-catchments. Provincial LiDAR (Light detection and ranging) data, which was released by the Province in the fall of 2023, provided additional elevation detail to assist with determining drainage catchment boundaries.

3.2.3 Drainage Catchments and Sub-Catchments

Using information collected through the Provincial LiDAR data and Provincial Digital Elevation Model (DEM) data it was possible to determine the boundaries of the drainage catchments and sub-catchments affecting the study area. Figure 3.1 illustrates the major drainage catchments affecting the study area. The southerly catchments outlet to Hickory Creek. There are a number of Municipal Drains located on agricultural lands to the north and east that discharge through Forest. The catchments illustrated on the drawing show the major flow path for surface water runoff within the study area limits.

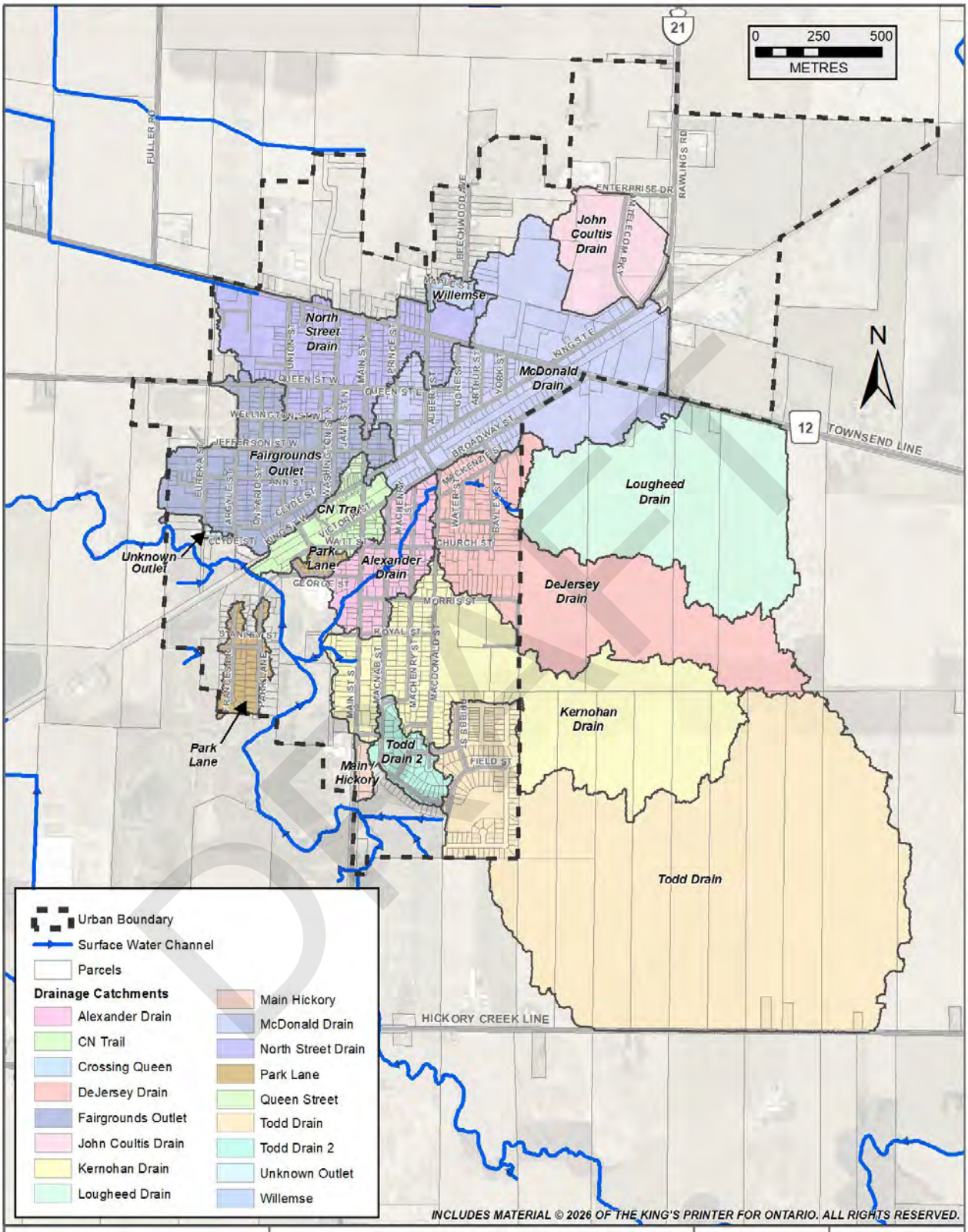
Using the LiDAR data described above, sub-catchments were also mapped which show the catchment boundaries within the urban limits of Forest and the different outlet locations for each of these sub-catchments. Understanding the size and configuration of the sub-catchments is essential in order to model the drainage areas and determine the size of drainage infrastructure needed to manage stormwater runoff during a range of storm events. Figure 3.1 illustrates the sub-catchments mapped within the urban portion of the study area along with their associated outlet locations.

3.2.4 Input from Residents

The Class EA Master Plan process was initiated in May of 2025 with a Public Notice that was directly mailed to all residents of Forest. The Notice was also posted on the Lambton Shores website. Residents were asked to provide input to the Master Plan by completing a questionnaire.

A link to the on-line questionnaire was included in the initial notice and included general questions about the nature of existing development on their property as well as the condition of existing drainage and stormwater infrastructure in the area. A total of 49 questionnaires were completed and returned, representing an approximate return rate of 3%. A copy of the questionnaire is included within Appendix C. Hard copies of the questionnaire were also provided to several residents who were unable to access the on-line version.

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OVERALL PLAN OF DRAINAGE CATCHMENTS

DATE	PROJECT #
June 2026	25033
SCALE	FIGURE No.
see bar	3.1

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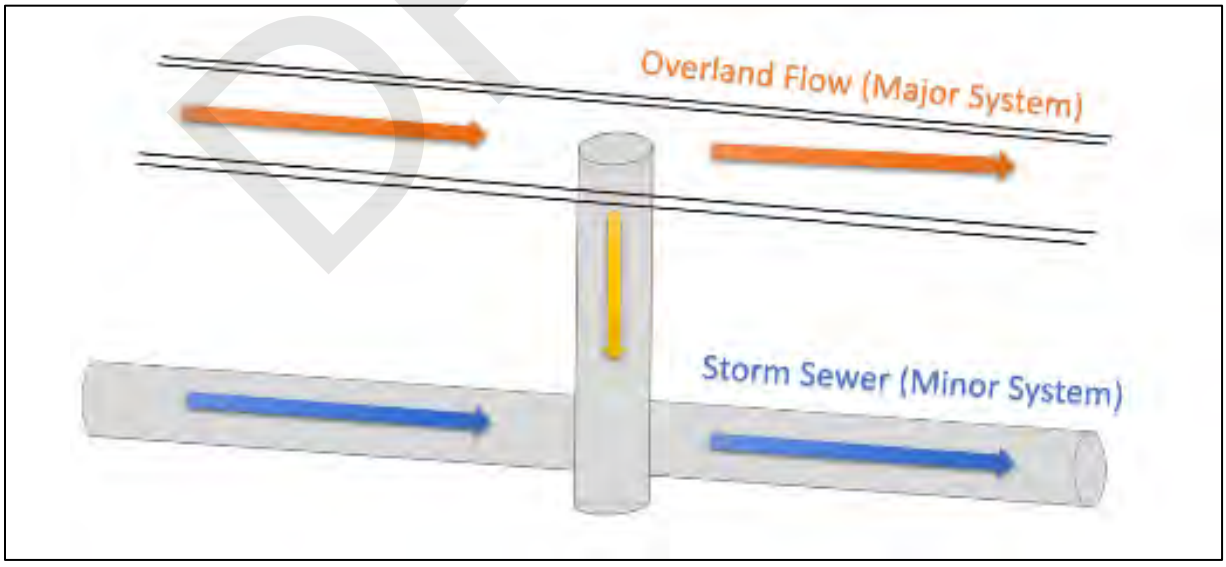
3.2.5 Results

The completed questionnaires were compiled in a database and the results tabulated. The information was utilized to obtain a better understanding of the Community and the problem areas where drainage was a concern. Based upon the results, a series of maps were created that summarize the data and identify potential problem areas. The intent was not to identify individual property issues, but rather confirm general areas where several properties, or clusters of homes, were experiencing drainage issues. This information was then referenced in conjunction with the results of the infrastructure assessment, along with input from municipal staff, to confirm problem areas.

3.2.6 Model Assumptions and Setup

To evaluate storm runoff for existing and future conditions scenarios, a hydrological and hydraulic computer model of the study areas was developed. The software applied was PCSWMM™. PCSWMM™ is a GIS-based model and utilizes the EPASWMM engine developed by the US Environmental and Protection Agency (100% Compatible, free open-source software). The PCSWMM™ hydrology component generates flows from catchment areas based on drainage parameters established from land use, soil type and slope. Catchment flows are directed to a hydraulic component of the model. The hydraulic component of the model was setup as a 'dual drainage' system wherein major flow routes, such as roads and channels, are simultaneously assessed with minor flow routes (i.e., ditches, culverts and/or storm sewers). Refer to the schematic below. The interconnection between the minor and major system provides a detailed assessment of both systems, capacity restrictions and ponding depths.

Interconnection of Minor and Major Systems



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Sub-catchments were developed for each of the major problem areas (see Figure 3.1) and existing stormwater infrastructure and topography were reviewed.

Model “storage” nodes were established at select locations to determine flooding depths at existing confined low points in roadways, or at confined low points on properties that lie along overland flow routes. Stage-storage relationships were established for each of these storage nodes from the DTM. Major system flow paths across private lands have been included as applicable in the model.

Where information from municipal staff or residents provided measurable data, the model results were calibrated to confirm the preliminary results.

3.2.7 Existing Conditions Model Runs

The PCSWMM^{TM} model was used for a high-level evaluation of the hydraulic capacity of the existing minor drainage systems and the overland major runoff flow paths. The normal practice for an urban setting is to convey the minor design storm event flow through the storm sewer system and the major storm event flow that surpasses the capacity of the storm system to be conveyed along road allowances to a suitable outlet.

Typical engineering servicing standards require the minor storm system to be sized to convey the 2-year design event without surcharging. The major storm system is to be sized to convey the 100-year design event and typically follows the path of the minor storm drainage system; however, there may be low point locations where the major system will spill from the road allowance to adjacent properties due to a lack of overland drainage or insufficient storm sewer capacity. Ponding up to 300mm is typically considered acceptable within roadway areas during a major storm event, so long as it does not spill and impact adjacent private property. Therefore, in some cases, ponding may only be acceptable at shallower depths (e.g. 150mm, where there is barrier curb but the adjacent private property is lower than the curb).

Following the identification of the six primary problem areas, it was determined that different solutions should be considered to address the storm drainage issues impacting each problem area. A proposed phasing plan should also be developed for each problem area so that priorities can be established for implementing the required infrastructure upgrades. A description of the six problem areas is provided below.

3.2.8 Problem Areas

i) Problem Area 1

Identified through input from residents, this problem area is located along Main Street near the south end of Forest. Low lying lots experience surface ponding following rainfall events. The properties on the west side of Main Street may be located within the floodplain limits of Hickory Creek. Following the initial identification of Problem Area 1, it was determined that the identified drainage problems were primarily associated with

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individual lot drainage issues. A decision was subsequently made to remove Problem Area 1 from the evaluation of alternatives component of the Master Plan.

ii) Problem Area 2

Located between Eureka Street and Argyle Street in the southwest part of Forest. This problem area was identified through input from municipal staff based upon historic complaints from residents and roadway flooding. Figure 3.2 illustrates Problem Area 2.

iii) Problem Area 3

Problem Area 3 is located south of Queen Street West and east of Argyle Street in Forest's west end. Identified through input from residents, property owners in this area have experienced repeated flooding, surcharged storm drainage systems, and basement flooding. Figure 3.2 illustrates Problem Area 3.

iv) Problem Area 4

This problem area is located in the northwest corner of Forest along Townsend Line and Juniper Place. Residents identified this problem area associated with frequent flooding and surcharging of storm drainage infrastructure on Juniper. The stormwater catchment extends southeast of Juniper and is illustrated on Figure 3.3.

v) Problem Area 5

Problem Area 5 was identified by municipal staff as an area of historic drainage issues and an insufficient outlet. Located north of Townsend Line along Maple Street in the north end of Forest. See Figure 3.3.

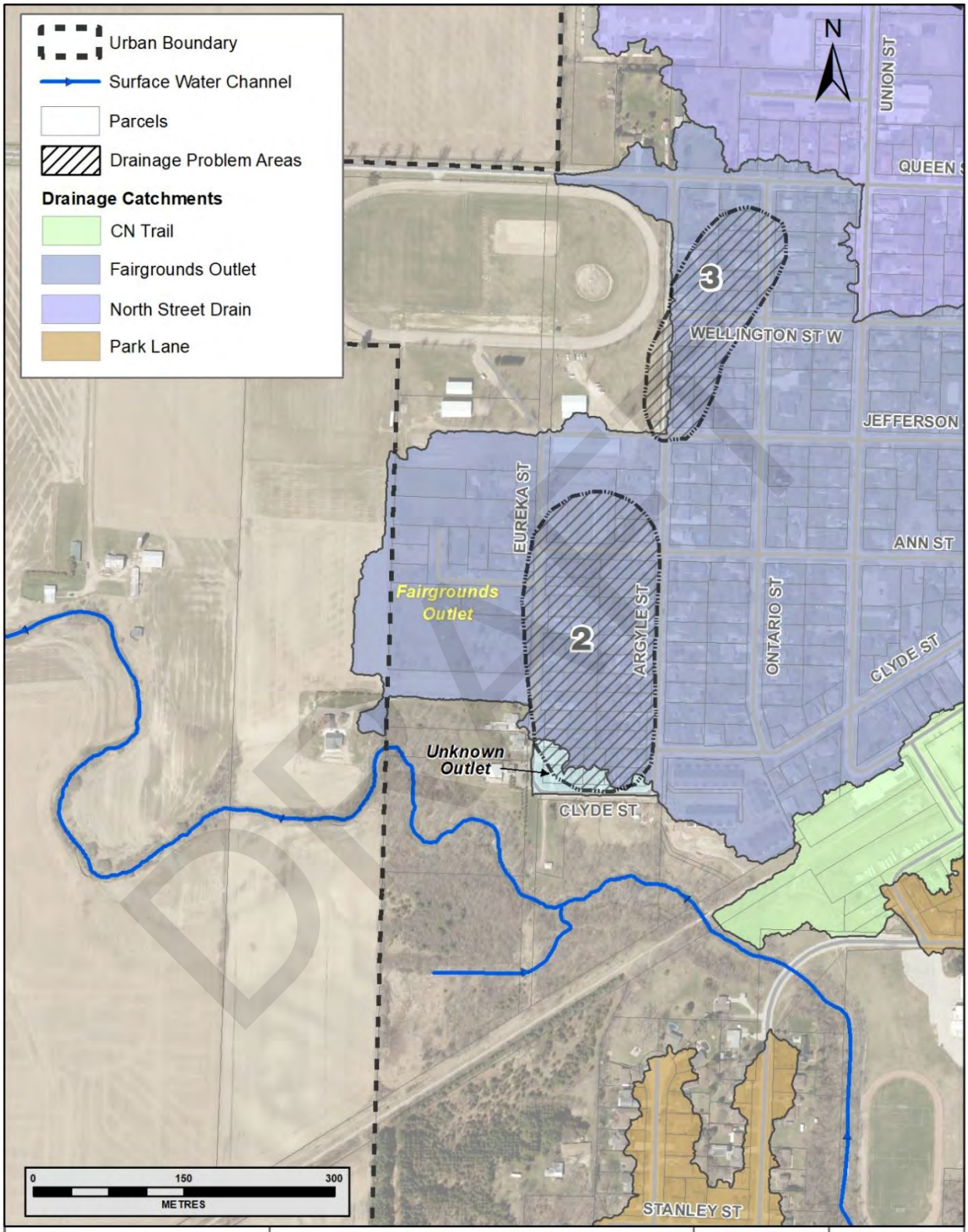
vi) Problem Area 6A

This problem area was identified by numerous residents and is located in the east end of Forest, south of Broadway Street and east of McDonald Street. Two municipal drains; the Lougheed Drain and DeJersey Drain outlet from adjacent agricultural lands through the urban stormwater drainage system in this area. Subcomponent 6A is focused on the westerly extent, outlet of the DeJersey and Lougheed Drains into the open Alexander Drain. Figure 3.4 illustrates Problem Area 6A.

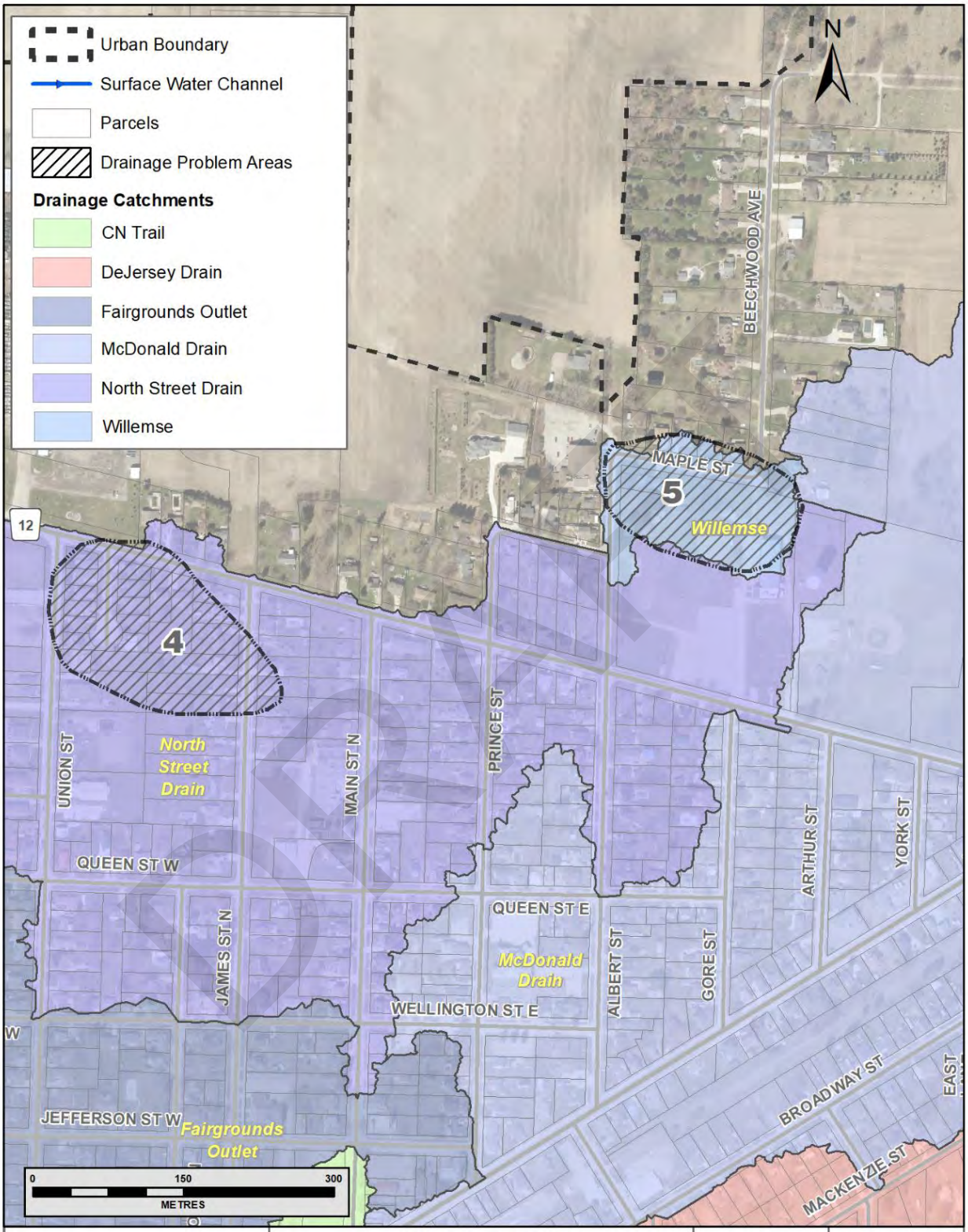
vi) Problem Area 6B

Subcomponent 6B is focused on the southeasterly extent of the bigger problem area. Figure 3.4 illustrates Problem Area 6B.

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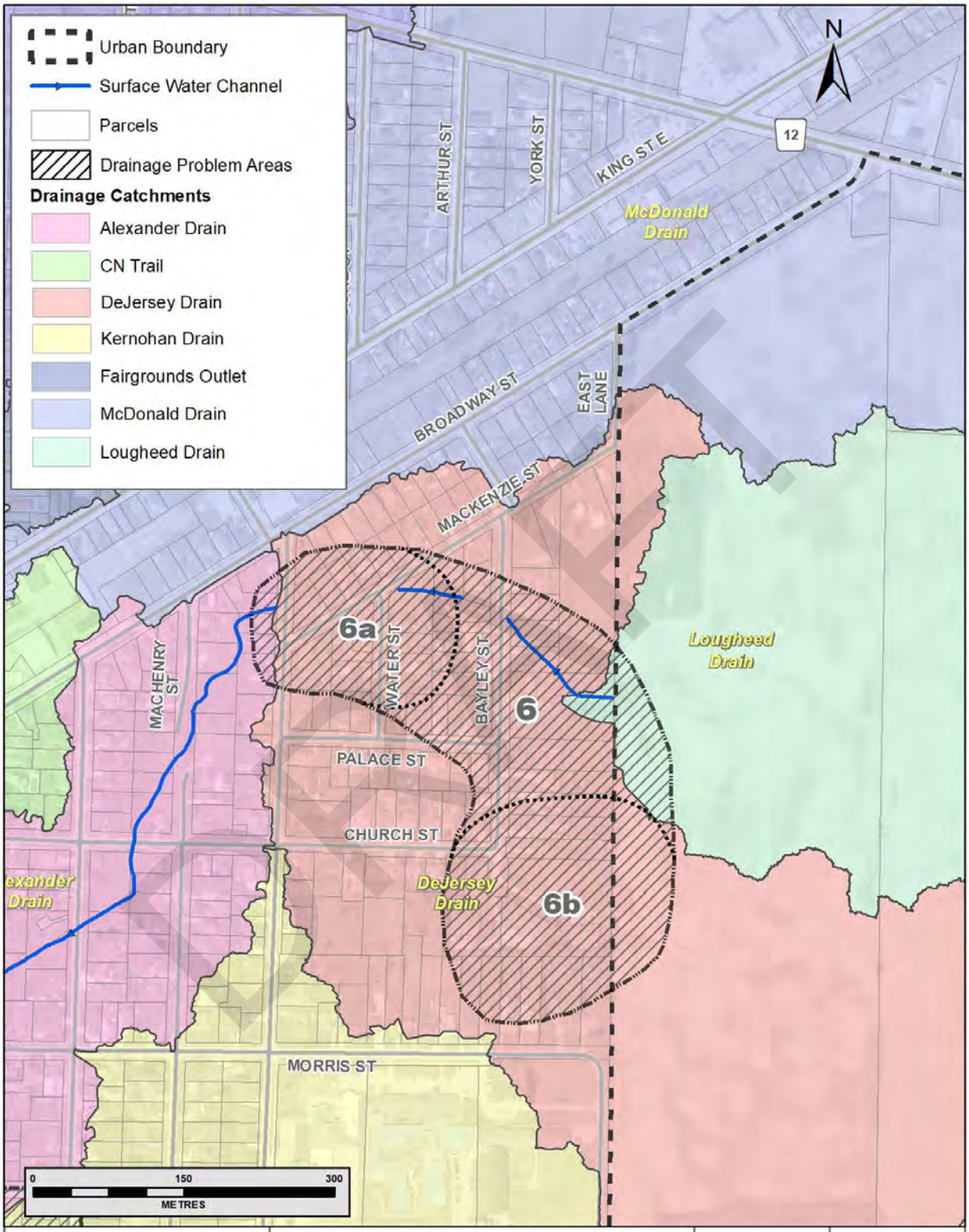
BMROSS engineering better communities	**MUNICIPALITY OF LAMBTON SHORES** MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY (TOWN OF FOREST) **DRAINAGE PROBLEM AREAS 2 AND 3**	DATE June 2026	PROJECT # 25033
		SCALE see bar	FIGURE No. 3.2



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MUNICIPALITY OF LAMBTON SHORES
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT MASTER PLAN SERVICING STUDY (TOWN OF FOREST)
DRAINAGE PROBLEM AREAS 4 AND 5

DATE	PROJECT #
June 2026	25033
SCALE	FIGURE No.
see bar	3.3


Urban Boundary
Surface Water Channel
Parcels
Drainage Problem Areas
Drainage Catchments
Alexander Drain
CN Trail
DeJersey Drain
Kernohan Drain
Fairgrounds Outlet
McDonald Drain
Lougheed Drain
N
ARTHUR ST
YORK ST
KING ST E
12
McDonald Drain
BROADWAY ST
EAST LANE
MACKENZIE ST
6a
WATER ST
BAYLEY ST
6
Lougheed Drain
MACHENRY ST
PALACE ST
CHURCH ST
exander Drain
DeJersey Drain
6b
MORRIS ST
0
150
300
METRES
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DRAINAGE PROBLEM AREA 6
DATE
June 2026
PROJECT #
25033
SCALE
see bar
FIGURE No.
3.4

3.2.9 Summary of Problem Identification

Based upon the information noted above, the following general conclusions were reached in association with problem identification for the Master Plan process.

- A review of input received from residents and staff knowledge, related to extreme runoff events which resulted in damage to road and drainage infrastructure, identified six primary areas where excess stormwater runoff resulted in negative impacts to residents and municipal infrastructure.
- Hydraulic modelling of the five problem areas was completed to confirm stormwater drainage deficiencies.
- Drainage runoff from agricultural lands to the east aggravates surface water flooding in the vicinity of Bayley and MacKenzie Streets.
- Problem Area 1, located along Main Street south of Royal Street, is partly located within the floodplain limits of Hickory Creek. Flooding may be associated with the channel rather than with stormwater infrastructure.
- Several drainage issues appear to be associated with structures that are isolated and not connected to the stormwater drainage network.

In an effort to resolve the defined problems, the proponent has investigated a limited number of practical alternative solutions, including the construction of new stormwater drainage infrastructure with new outlet structures and stormwater management facilities. These types of projects could be Schedule B activities under the terms of the Class EA. Schedule B projects are approved, subject to a screening process which incorporates Phases 1 and 2 of the Class EA process (i.e., Problem Definition, Evaluation of Alternatives). The purpose of the screening process is to identify any potential environmental impacts related to the construction of the proposed facilities and to plan for appropriate mitigation of any identified impacts.

3.3 Identification of Alternative Solutions

A range of alternatives have been identified for the five problem areas to address the individual drainage problems associated with each.

3.3.1 Alternative Solutions – Problem Area 2

Alternative 1 – Install storm sewer on Crozier connecting to existing storm sewer at the Fairgrounds. This option would involve the construction of a new 300mm dia. storm sewer on Crozier ROW connecting to an existing 1050 mm dia. storm sewer further west adjacent to the fairgrounds.

Alternative 2 – Install new storm sewers on Eureka discharging to Hickory Creek. This option would involve the installation of storm sewers on Eureka Street, discharging to a new outlet at Hickory Creek to the south. Work would likely occur as part of a full road reconstruction project; converting the existing semi-rural cross-section to an urban

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cross-section with curb and gutters. Properties located along the route would be provided with a private drain connection (PDC) as part of the project.

Alternative 3 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.3.2 Alternative Solutions – Problem Area 3

Alternative 1 – Install twin inlet catchbasins on Wellington Street and upgrade existing storm sewers on Queen Street and Ontario Street. This option would involve the construction of a new 300mm dia. storm sewer and twin inlet catchbasins at the westerly extent of Wellington Street, discharging to an existing 750mm dia. storm sewer on fairgrounds property, and upgrading existing storm sewer infrastructure on Queen and Ontario Streets to increase capacity.

Alternative 2 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.3.3 Alternative Solutions – Problem Area 4

Alternative 1 – Upsize storm sewer on south side of Townsend Line. This option would involve the upsizing of existing storm drainage infrastructure on Townsend Line to increase capacity and reduce flooding on Juniper Place.

Alternative 2 – Install open ditch in boulevard on north side of Townsend Line. This option would involve the installation of an open ditch on the north side of Townsend Line and additional storm sewer infrastructure to connect drainage on Townsend to the ditch and then back to the existing open ditch past the entrance to Townsend Meadows.

Alternative 3 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.3.4 Alternative Solutions – Problem Area 5

Alternative 1 – Extend the Willemse Drain to the problem area. This option would involve the extension of the existing municipal drain from the Legion to the existing catchbasin at Albert and Maple Street. The work would be completed through the Drainage Act.

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Alternative 2 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.3.5 Alternative Solutions – Problem Area 6A (northwest)

Alternative 1 – Add additional stormwater storage at edge of agriculture fields. This option would involve the creation of stormwater storage facilities at the easterly edge of the settlement area to temporarily store agriculture runoff.

Alternative 2 – Upgrade closed portion of DeJersey Drain and improve flow path. This option would involve the reconstruction of Mackenzie and MacDonald Streets to install a 1200mm dia. and 1350mm dia. storm sewer to new outlets in the Alexander Drain open channel. Portions of Mackenzie and MacDonald Streets will also be lowered to provide a major flow path to the outlets.

Alternative 3 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.3.6 Alternative Solutions – Problem Area 6B (southeast)

Alternative 1 – Add additional stormwater storage. This option would involve the creation of additional stormwater storage in the southwest portion of Problem Area 6.

Alternative 2 - Do Nothing. This option proposes that no improvements or changes be made to address the identified problems. During the Class EA planning and design process, this alternative may be implemented at any time prior to the commencement of construction. A decision to 'Do Nothing' would typically be made when the costs of all other alternatives, both financial and environmental, significantly outweigh the benefits.

3.4 Evaluation of Alternatives

3.4.1 General Process

The second component of Phase 2 of the Class EA process is conducted by examining the technical, economic, cultural, social and environmental considerations associated with implementing an alternative. Mitigation measures that could lessen environmental impacts are also defined. A preferred solution, or solutions, is then selected. Several activities were incorporated into the assessment process, including a land use analysis, a site inspection, a review of technical opinion and consultation with affected stakeholders, municipal staff and regulatory agencies.

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3.4.2 Summary of Required Works

Based on the results of a preliminary engineering analysis, a brief description of the works associated with each of the Master Plan alternatives being considered as part of the review of alternatives is described in Tables 3.1. to Table 3.6.

Table 3.1 - Primary Components of Identified Alternatives: Problem Area 2

Alternatives	Related Works
Alternative 1 – Install storm sewer on Crozier	- Install 150 metres of 300mm dia. storm sewer on the Crozier ROW from Eureka Street to the Forest urban boundary. - The new storm sewer will connect to an existing 1050 mm dia. storm sewer extending north to south adjacent to the settlement boundary. - The existing 1050 mm dia. storm sewer discharges to Hickory Creek further to the south. - A 6 metre easement would be required for the proposed works as Crozier ROW is privately owned and the storm sewer would need to cross a privately owned lot at the westerly extent of Crozier ROW.
Alternative 2 – Install storm sewer on Eureka Street to an outlet at Hickory Creek	- Reconstruct Eureka Street from Jefferson to Clyde and convert from a semi-rural cross section to an urban cross section. - Install 360 metres of 300mm-600mm dia. storm sewer on Eureka Street, from Jefferson Street to Clyde. - Install 105m of 600mm dia. storm sewer from Clyde to a new outlet location at Hickory Creek. - Existing water and sanitary infrastructure may be upgraded as part of the project, if required. - The storm sewer will be installed within the limits of the municipal road allowances and will be sized to accommodate existing developed areas. - Private drain connections (PDC's) may be considered for private properties.
Alternative 3 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

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Table 3.2 - Primary Components of Identified Alternatives: Problem Area 3

Alternatives	Related Works
Alternative 1 – Install twin inlet catch basins on Wellington Street & upgrade storm water infrastructure on Ontario and Queen Street	- Install twin inlet catch basins on Wellington Street and then 60 metres of 300mm dia. storm sewer west on Wellington Street. - The new storm sewer will connect to an existing 750mm dia. storm sewer extending north to south adjacent to the fairgrounds property. - Replace an existing 200 mm dia. storm sewer on Ontario Street with 133 metres of 300mm-450mm dia. storm sewer. - Replace an existing 300 mm dia. storm sewer on Queen Street with 210 metres of 525mm dia. storm sewer and 62 metres of 250mm dia. storm sewer. - The new storm sewer will connect to the existing 750mm dia. storm sewer extending north to south adjacent to the fairgrounds property.
Alternative 2 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

Table 3.3 - Primary Components of Identified Alternatives: Problem Area 4

Alternatives	Related Works
Alternative 1 – Upsize storm sewer on south side of Townsend Line	- Replace 67 metres of 675mm dia. storm sewer on Townsend Line with 825mm dia. storm sewer. - Replace 138 metres of 900mm dia. storm sewer on Townsend Line with 1050mm dia. storm sewer. - The upgraded storm sewer will connect to an existing 1050 mm dia. storm outlet discharging to the open ditch on the south side of Townsend Line, west of the Canadian Tire entrance. - Modify entrance to Juniper Place by either superelevating the entrance to direct surface runoff away from the entrance or installing a raised sidewalk across the entrance to block surface flows.
Alternative 2 – Install open ditch in boulevard on north side of Townsend Line	- Install 95 metres of open ditch within the north Townsend Line boulevard with 2.5:1 side slopes and ditch inlet catch basins at each end. - Modify entrance to Juniper Place by either superelevating the entrance to direct surface runoff away from the entrance or installing a raised sidewalk across the entrance to block surface flows.

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Alternatives	Related Works
	- Modify curb along the north limit of Townsend Line to allow surface runoff to flow into the new ditch. - Install 15.5metres of 600mm dia. storm sewer to connect the east end of the ditch to the existing 675 mm dia. storm sewer on the south side of Towsend Line. - Install 150metres of 900mm dia. storm sewer from the west end of the ditch and then 24.5m across Townsend Line to the open ditch on the south side of Townsend Line, west of the entrance to the Townsend Meadows development. - A 5 metre easement would be required for the westerly 40 metres of storm sewer to cross private property before tying into the existing open ditch.
Alternative 3 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

Table 3.4 - Primary Components of Identified Alternatives: Problem Area 5

Alternatives	Related Works
Alternative 1 – Extend the Willemse Drain to the problem area	- Extend the Willemse Drain approximately 100 metres east and south, adjacent to the Royal Canadian Legion on Albert Street. - The drain extension would tie into an existing catch basin at Albert and Maple Street. - The work could be completed either through the Drainage Act or as part of municipal road infrastructure upgrades.
Alternative 2 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

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Table 3.5 - Primary Components of Identified Alternatives: Problem Area 6A

Alternatives	Related Works
Alternative 1 – Add additional stormwater storage at edge of agricultural field	- Create new stormwater storage facilities adjacent to the eastern limit of the settlement boundary to temporarily store stormwater runoff of both DeJersey and Lougheed Drains. - Consider possible locations where a temporary storage facility could be constructed. - Consider storage created either by installing a berm that would store stormwater for approximately 24 hours before slowly releasing the retained volume, or by excavating a holding pond that would also temporarily store runoff before slowly releasing to the collection system.
Alternative 2 – Upgrade closed portion of DeJersey Drain and improve flow path	- Install 175 metres of 1200mm dia. storm sewer on MacKenzie Street from the corner of MacKenzie and Water Street, along MacKenzie to MacDonald Street, and then through an existing easement to an outlet at the Alexander Drain. - Install 150 metres of 1350mm dia. storm sewer on MacKenzie Street from the corner of MacKenzie and Water Street, along MacKenzie to MacDonald Street., and then north on MacDonald to an outlet at the Alexander Drain. - Abandon the existing 1200mm dia. drain that crosses private property, and 750mm dia. storm sewer on MacKenzie Street. - Reconstruct Mackenzie Street from Water Street to MacDonald Street to install new storm drainage infrastructure and lower road surface to improve the major flow path. - Reconstruct MacDonald Street from just north of Palace Street to 50 metres north of MacKenzie Street to install new stormwater drainage infrastructure and improve the flow path. - Create new, or expand existing easements, as required, to allow a suitable outlet to the Alexander Drain from the proposed stormwater infrastructure upgrades.
Alternative 3 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

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Table 3.6 - Primary Components of Identified Alternatives: Problem Area 6B

Alternatives	Related Works
Alternative 1 – Add additional stormwater storage.	- Create new stormwater storage facilities adjacent to the eastern limit of the settlement boundary to temporarily store stormwater runoff of the DeJersey Drain. - Consider possible locations where a temporary storage facility could be constructed. - Consider storage created either by installing a berm that would store stormwater for approximately 24 hours before slowly releasing the retained volume, or by excavating a holding pond that would also temporarily store runoff before slowly releasing to the collection system.
Alternative 2 - Do Nothing	- No works would occur to address existing stormwater drainage deficiencies within this problem area.

3.5 Environmental Considerations

Section 3.3 of this report lists the alternative solutions that were identified to resolve deficiencies with existing stormwater drainage infrastructure in the five problem areas of the Forest study area. As part of the evaluation process, it is necessary to assess what effect each of the options may have on the environment and what measures can be taken to mitigate the identified impacts. The two main purposes of this exercise are to:

- Minimize or avoid adverse environmental effects associated with a project.
- Incorporate environmental factors into the decision-making process.

Under the terms of the EA Act, the environment is divided into five general elements:

- Natural environment
- Social environment
- Cultural environment
- Economic environment
- Technical environment

The identified environmental elements can be further subdivided into specific environmental components that have the potential to be affected by the implementation of the alternative solutions. Table 3.7 provides an overview of the Specific Environmental Components considered of relevance to this investigation. These components were identified following the initial round of public and agency input, and after a preliminary review of each alternative with respect to technical considerations and the environmental setting of the project area.

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Table 3.7 - Summary of Project-Related Environmental Components

Element	Component	Sub-Component
Natural Environment	Aquatic	• Aquatic Resources
	Hydrogeology	• Groundwater Quality/ Quantity
	Terrestrial	• Amphibians & Reptiles • Birds & Mammals • Vegetation
Social Environment	Community	• Disruption during Construction • Health and Safety • Quality of Life
Cultural Heritage Environment	Built Heritage Resources and Cultural Heritage Landscapes	• Historical and Cultural Resources and landscapes
	Archaeological Resources	• Archaeological Resources and areas of archaeological potential
Economic Environment	Municipal	• Capital and Operational Costs
	Community	• Property Taxes
Technical Environment	Transportation	• Traffic Patterns/ Volumes • Pedestrian/ Vehicular Safety
	Infrastructure	• Condition/ Age • Utilities and Drainage • Design Standards
	Climate Change	• Climate change impacts and adaptation

The environmental effects of each study alternative on the specific components and sub-components are generally determined through an assessment of various impact predictors (i.e. impact criteria). Given the works associated with the alternative solutions, the following key impact criteria were examined during the course of this assessment:

- Magnitude (e.g. scale, intensity, geographic scope, frequency, duration).
- Technical complexity.
- Mitigation potential (e.g. avoidance, compensation, degree of reversibility).
- Public perception.
- Scarcity and uniqueness of affected components.
- Likelihood of compliance with applicable regulations and public policy objectives.

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The evaluation process described above provides the proponent with a methodology to predict the potential effects of alternative solutions. The significance of the identified impacts is largely based on the anticipated severity of the following:

- Direct changes occurring at the time of project completion (e.g., habitat disruption);
- Indirect effects following project completion (e.g., increased sedimentation/ erosion);
- Induced changes resulting from a project (e.g., additional activity in sensitive areas).

3.5.1 General Review of Alternatives

Tables 3.8 – 3.13 provide a summary of the key considerations for each alternative associated with existing stormwater drainage infrastructure in the five problem areas with respect to the environmental components described in Table 3.7. To this end, the table identifies those benefits and impacts that were identified as significant during the initial evaluation of alternatives. Potential mitigation measures for the identified impacts are also presented.

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Table 3.8 - Preliminary Evaluation of Alternatives: Problem Area 2

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 (Install new storm sewer on Crozier ROW)	- Provides a stormwater outlet for impacted properties in the vicinity of Eureka Street. - Minimizes flooding along Eureka Street and properties located adjacent to the corridor. - Minimizes potential impacts to natural and cultural environments, as works occur predominantly within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics. - Less expensive than Alternative 2.	- Will result in minor impacts to traffic movement during installation of the catch basins and road crossing. - May result in disturbance to natural habitat adjacent to the Crozier ROW to convey stormwater to the existing drainage infrastructure.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Adjacent property owners would be notified prior to the work being completed. - Avoid disturbance to natural features when identifying the route for the new stormwater infrastructure.
Alternative 2 (Install new storm drainage infrastructure on Eureka Street)	- Provides a stormwater outlet for impacted properties in the vicinity of Eureka Street. - Minimizes flooding along Eureka Street and properties located adjacent to the corridor. - Minimizes potential impacts to natural and cultural environments, as works occur predominantly within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics. - Provides direct access to stormwater drainage infrastructure for more properties. - Provides improved road infrastructure to properties located along the Eureka Street corridor.	- Will result in impacts to traffic movement during reconstruction of the road and installation of the new stormwater drainage infrastructure. - Significantly more expensive than Alternative 1 as full road reconstruction would be required to install stormwater drainage infrastructure and install a new outlet at Hickory Creek. - Will result in temporary disruption to the Eureka Street boulevard area during installation of the road and drainage infrastructure. - May result in disturbance to natural habitat adjacent to the Eureka Street R/A to convey stormwater to the creek.	- Implement traffic control measures during construction. - Local access will be maintained. - Consult with residents in advance of construction to ensure they understand the full scope of the work being completed. - Undertake the work as part of overall municipal asset management strategy. - Explore funding opportunities to minimize capital costs. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Avoid disturbance to natural features when identifying the route for the new stormwater infrastructure.

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Study Alternative	Benefit	Impacts	Remediation
Alternative 3 (Do Nothing)	- Least expensive option.	- Will result in negative impacts to existing residents experiencing drainage issues.	- Impact cannot be mitigated.

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Table 3.9 - Preliminary Evaluation of Alternatives: Problem Area 3

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 (Install twin inlet catch basins on Wellington Street & upgrade storm water infrastructure on Ontario and Queen Street)	- Provides a stormwater outlet for impacted properties in the vicinity of Wellington Street and more capacity for existing stormwater drainage infrastructure on Queen and Ontario Streets. - Minimizes flooding within affected areas of Wellington, Queen and Ontario Streets. - Minimizes potential impacts to natural and cultural environments, as works occur predominantly within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics. - Provides improved road infrastructure to properties located along the Ontario Street corridor.	- Will result in minor impacts to traffic movement during installation of the new and upgraded stormwater infrastructure. - Will result in temporary disruption to the boulevard areas of Wellington and Argyle Streets - Will result in temporary disruption to fairgrounds area in order to connect to existing drainage infrastructure. - Full road reconstruction would be required to install the stormwater drainage infrastructure on Queen and Ontario Streets during construction. - Will result in impacts to traffic movement during reconstruction of the road and installation of the new stormwater drainage infrastructure.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Notify adjacent property owners prior to the work being completed. - Avoid undertaking the work when the fairgrounds would be busy with local events.
Alternative 2 (Do Nothing)	- Least expensive option.	- Will result in negative impacts to existing residents experiencing drainage issues.	- Impact cannot be mitigated.

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Table 3.10 - Preliminary Evaluation of Alternatives: Problem Area 4

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 (Upsize storm sewer on south side of Townsend Line)	- Increases capacity within existing stormwater collection system. - Minimizes some flooding within the drainage catchment. - Minimizes potential impacts to natural and cultural environments, as works occur within existing road allowances. - Presents few impacts to air quality, noise levels and local aesthetics.	- Will result in minor impacts to traffic movement during installation of the new drainage infrastructure. - Will result in temporary disruption to the Townsend Line road allowance during construction of the new drainage infrastructure. - More expensive than Alternative 2.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Adjacent property owners would be notified prior to the work being completed.
Alternative 2 (Install ditch in boulevard on north side of Townsend Line)	- Increases the storage capacity of the existing storm drainage collection system. - Minimizes flooding along Townsend Line and Juniper Place. - Minimizes potential impacts to natural and cultural environments as works primarily occur within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics. - Less expensive than Alternative 2.	- Will result in minor impacts to traffic movement during road modifications to direct surface flows away from Juniper. - Will result in temporary disruption to the Townsend Line road allowance during construction of the new drainage infrastructure.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Adjacent property owners would be notified prior to the work being completed.
Alternative 3 (Do Nothing)	- Least expensive option. - Will result in no construction-related impacts to the natural, social and economic environments.	- Will result in negative impacts to existing residents experiencing significant drainage issues.	- Impact cannot be mitigated.

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Table 3.11 - Preliminary Evaluation of Alternatives: Problem Area 5

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 (Extend the Willemse Drain to the problem area)	- Provides a stormwater outlet for impacted properties in the vicinity of Maple Street. - Minimizes flooding within affected areas of Maple and Albert Streets. - Minimizes potential impacts to natural and cultural environments, as works occur predominantly within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics.	- Will result in minor impacts to traffic movement during installation of the new and stormwater infrastructure. - Will result in temporary disruption to the boulevard areas of Maple and Albert Streets during construction. - May result in temporary disruption to the Legion parking lot to tie into existing drain.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Notify adjacent property owners prior to the work being completed. - Avoid undertaking the work when the legion is busy with local events.
Alternative 2 (Do Nothing)	- Least expensive option.	- Will result in negative impacts to existing residents experiencing drainage issues.	- Impact cannot be mitigated.

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Table 3.12 - Preliminary Evaluation of Alternatives: Problem Area 6A

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 (Add additional stormwater storage at edge of agricultural field)	- Increases the storage capacity of the existing storm drainage system. - Minimizes some flooding within the drainage catchment but does not address all flooding within the catchment. - Minimizes potential impacts to natural and cultural environments, as works occur within existing agricultural lands. - Presents few impacts to air quality, noise levels and local aesthetics. - Less expensive than Alternative 2.	- Will result in temporary impacts to agricultural lands or privately owned lands during construction of the stormwater storage facilities. - Will result in disruption to the facilities following rainfall events. - Does not provide sufficient capacity to address all flooding issues within the catchment area.	- Provide compensation to private property owners impacted by the proposed storage facilities. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Adjacent property owners would be notified prior to the work being completed.
Alternative 2 (Upgrade closed portion of DeJersey Drain and improve flow path)	- Increases the capacity of the existing storm drainage collection system. - Minimizes flooding along Mackenzie and MacDonald Street and elsewhere in the catchment area. - Improves surface drainage conveyance routes through the affected catchment area. - Minimizes potential impacts to natural and cultural environments, as works primarily occur within existing road allowances. - Presents few long-term impacts to air quality, noise levels and local aesthetics. - More expensive than Alternative 2.	- Will result in impacts to traffic movement during road reconstruction and installation of the upgraded stormwater infrastructure. - Will result in impacts to laneways and boulevard areas during road reconstruction. - Will result in removal of some vegetation along the open portion of the Alexander Drain and DeJersey Drain to increase capacity. - May result in impacts to private properties located adjacent to the existing drainage easement and along the Alexander Drain.	- Implement temporary traffic control measures during construction. - Local access will be maintained. - Affected property owners will be contacted prior to construction. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Time tree removals to avoid impacts to breeding birds. - Adjacent property owners would be notified prior to the work being completed. - Disturbed areas would be restored following completion of construction.
Alternative 3 (Do Nothing)	- Least expensive option. - Will result in no construction-related impacts to the natural, social and economic environments.	- Will result in negative impacts to existing residents experiencing significant drainage issues.	- Impact cannot be mitigated.

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Table 3.13 - Preliminary Evaluation of Alternatives: Problem Area 6B

Study Alternative	Benefit	Impacts	Remediation
Alternative 1 – (Add additional stormwater storage)	- Provides additional storage capacity to the stormwater collection system in this area. - Minimizes flooding within affected areas of Bayley, Church and Palace Streets. - Minimizes potential impacts to natural environment, as works occur predominantly within previously disturbed areas. - Presents few long-term impacts to air quality, noise levels and local aesthetics.	- May result in minor impacts to traffic movement during construction of the new storage facilities. - Will result in temporary disruption to the grassed green space in front of the apartment buildings or agricultural lands. - May impact cultural environment if work to occur within previously undisturbed areas.	- Implement temporary traffic control measures. - Local access will be maintained. - Implement sediment and erosion control measures during construction to minimize impacts to environmental features. - Notify adjacent property owners prior to the work being completed. - A Stage 1-2 Archaeological Assessment may be required.
Alternative 2 (Do Nothing)	- Least expensive option.	- Will result in negative impacts to existing residents experiencing drainage issues.	- Impact cannot be mitigated.

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3.5.2 Analysis

To further examine these preliminary conclusion, two additional investigations were completed:

1. Additional PCSWMM™ modeling was completed for each of the alternatives to determine which option was most effective in reducing/minimizing stormwater flooding and drainage issues,
2. A more comprehensive environmental effects analysis was completed which examined potential interactions between the identified alternatives and environmental components (Table 3.7).

A summary of the additional modeling is included below.

3.5.3 Model Runs

For each of the defined problem areas, existing infrastructure was examined to determine if sufficient capacity existed within the collection system to convey a range of different storm events (2 to 100 year storms).

Information from residents was collected, where available, in order to calibrate the model results.

If the existing infrastructure was determined to be undersized, then subsequent model runs were undertaken with larger capacity stormwater infrastructure to identify sufficient capacity requirements needed to minimize or eliminate flooding.

Where the existing background information on the collection system was insufficient to complete the modeling, additional on-site investigations were undertaken to either collect the data or take CCTV imagery of the unknown pipe sections.

3.5.4 Environmental Effects Analysis

The purpose of the environmental effects analysis was to determine the environmental effects of constructing and operating each identified option on the environmental components and sub-components. The level of effect for the environmental interactions was rated as High, Moderate, Low or Minimal/ Nil. Potential mitigation measures were also considered as part of this evaluation. Tables 3.14 to 3.19 summarizes the outcome of the analysis for each of the alternatives initially identified.

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Table 3.14 - Environmental Effects Analysis: Problem Area 2

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Install new storm sewer on Crozier ROW	Low	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(2) Install new storm drainage infrastructure on Eureka Street	Low to Moderate	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Install new storm sewer on Crozier ROW	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be limited as much as practical and be timed to minimize impacts to breeding birds and other wildlife.
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be limited as much as practical and be timed to minimize impacts to breeding birds and other wildlife.
	(3) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Install new storm sewer on Crozier ROW	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.
	(3) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.
SOCIAL			
• Community	**(1)** Install new storm sewer on Crozier ROW	Low	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(2) Install new storm drainage infrastructure on Eureka Street	Low to Moderate	• Implementation of this alternative will cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Install new storm sewer on Crozier ROW	Minimal/ Nil	• No Impacts anticipated.
	(2) Install new storm drainage infrastructure on Eureka Street	Minimal/Nil	• No Impacts anticipated.
	(3) Do Nothing	Minimal/ Nil	• No Impacts anticipated.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Archaeological Resources	**(1)** Install new storm sewer on Crozier ROW	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• Stage 1-2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(3) Do Nothing	Minimal/Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Install new storm sewer on Crozier ROW	Low to Moderate	• Work related to this option could be incorporated into annual public works budget.
	(2) Install new storm drainage infrastructure on Eureka Street	Moderate to High	• Work would be undertaken as part of overall asset management plan and implemented at some point in the future. • Grant funding options could be explored to help mitigate costs
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate the existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Install new storm sewer on Crozier ROW	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate the existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
TECHNICAL			
• Transportation	**(1)** Install new storm sewer on Crozier ROW	Low	• Few impacts to traffic movement are anticipated during construction of the storm sewer. Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(2) Install new storm drainage infrastructure on Eureka Street	Low to Moderate	• Traffic movement will be impacted during road reconstruction and installation of the storm sewer. Access will be maintained for local traffic, however there may be brief periods when access will be unavailable. • No impacts are anticipated from the operation of the proposed works.
	(3) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.
• Infrastructure	**(1)** Install new storm sewer on Crozier ROW	Low	• Once installed the storm sewer would function efficiently. • System components would require regular maintenance to ensure that it functions effectively.
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• Road reconstruction to an urban cross-section, including installation of storm sewers would significantly improve the infrastructure along the Eureka Street corridor. • The new outlet at Hickory Creek would require regular maintenance.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Climate Change	**(1)** Install new storm sewer on Crozier ROW	Low	• Providing a suitable outlet for properties in the Eureka Street area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(2) Install new storm drainage infrastructure on Eureka Street	Low	• Providing a suitable outlet for properties in the Eureka Street area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Table 3.15 - Environmental Effects Analysis: Problem Area 3

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be timed to minimize impacts to breeding birds and other wildlife.
	(2) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.
	(2) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
SOCIAL			
• Community	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of proposed works.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Minimal/ Nil	• No Impacts anticipated.
	(2) Do Nothing	Minimal/ Nil	• No Impacts anticipated.
• Archaeological Resources	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(2) Do Nothing	Minimal/Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low to Moderate	• Work related to this option could be incorporated into annual public works budget.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
TECHNICAL			
• Transportation	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Some impacts to traffic movement are anticipated during construction of the upgraded storm sewers. • A traffic control plan would be implemented during construction activities within the limits of the traffic lanes. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of proposed works.
	(2) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.
• Infrastructure	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Once installed the improved storm sewer would function efficiently and improve the capacity of the collection system in this part of Forest. • System components would require regular maintenance to ensure that it functions effectively.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Climate Change	**(1)** Install twin inlet catch basins on Wellington Street & upgrade stormwater infrastructure on Ontario and Queen	Low	• Providing a suitable outlet for properties in this Problem Area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Table 3.16 - Environmental Effects Analysis: Problem Area 4

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(2) Install ditch in boulevard on north side of Townsend Line	Low to Moderate	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be timed to minimize impacts to breeding birds and other wildlife.
	(2) Install ditch in boulevard on north side of Townsend Line	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be timed to minimize impacts to breeding birds and other wildlife.
	(3) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
	(2) Install ditch in boulevard on north side of Townsend Line	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.
	(3) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.
SOCIAL			
• Community	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from operation of the proposed works.
	(2) Install ditch in boulevard on north side of Townsend Line	Low to Moderate	• Implementation of this alternative will cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from operation of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Upsize storm sewer on south side of Townsend Line	Minimal/ Nil	• No Impacts anticipated.
	(2) Install ditch in boulevard on north side of Townsend Line	Minimal/Nil	• No Impacts anticipated.
	(3) Do Nothing	Minimal/ Nil	• No Impacts anticipated.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Archaeological Resources	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(2) Install ditch in boulevard on north side of Townsend Line	Low	• Stage 1-2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(3) Do Nothing	Minimal/Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Upsize storm sewer on south side of Townsend Line	Low to Moderate	• Work related to this option could be incorporated into annual public works budget.
	(2) Install ditch in boulevard on north side of Townsend Line	Moderate to High	• Work related to this option could be incorporated into annual public works budget. • Grant funding options could be explored to help mitigate costs
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Upsize storm sewer on south side of Townsend Line	Low	No economic impacts to local residents are anticipated as a result of the work.
	(2) Install ditch in boulevard on north side of Townsend Line	Low	No economic impacts to local residents are anticipated as a result of the work.
	(3) Do Nothing	Moderate	Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
TECHNICAL			
• Transportation	**(1)** Upsize storm sewer on south side of Townsend Line	Low to Moderate	• Some impacts to traffic movement are anticipated during construction of the storm sewer. • A traffic control plan would be implemented during construction. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(2) Install ditch in boulevard on north side of Townsend Line	Low to Moderate	• Some impacts to traffic movement are anticipated during construction of the connecting storm sewers and superelevation. • A traffic control plan would be implemented during construction. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(3) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.
• Infrastructure	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Once installed the storm sewer would function efficiently. • System components would require regular maintenance to ensure that it functions effectively.
	(2) Install ditch in boulevard on north side of Townsend Line	Low	• The new ditch will require regular maintenance to ensure that accumulated sediment is removed.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
Climate Change	**(1)** Upsize storm sewer on south side of Townsend Line	Low	• Preventing flooding for properties in the Juniper Street area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(2) Install ditch in boulevard on north side of Townsend Line	Low	• Preventing flooding for properties in the Juniper Street area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Table 3.17 - Environmental Effects Analysis: Problem Area 5

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Extend the Willemse Drain to the problem area	Low	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operation of the proposed works.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Extend the Willemse Drain to the problem area	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within existing road allowances. • Tree and vegetation removal will be timed to minimize impacts to breeding birds and other wildlife.
	(2) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Extend the Willemse Drain to the problem area	Low	• No impacts anticipated during construction. • An improved drainage collection system may result in lowering of elevated groundwater elevations in some areas which could improve drainage issues for some properties.
	(1) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.
SOCIAL			
• Community	**(1)** Extend the Willemse Drain to the problem area	Low	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Extend the Willemse Drain to the problem area	Minimal/ Nil	• No Impacts anticipated.
	(2) Do Nothing	Minimal/ Nil	• No Impacts anticipated.
• Archaeological Resources	**(1)** Extend the Willemse Drain to the problem area	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operation of the proposed works.
	(2) Do Nothing	Minimal/Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Extend the Willemse Drain to the problem area	Low	• Work related to this option could be incorporated into annual public works budget or be completed through the Drainage Act through an amendment to the existing report.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Extend the Willemse Drain to the problem area	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
TECHNICAL			
• Transportation	**(1)** Extend the Willemse Drain to the problem area	Low	• Few impacts to traffic movement are anticipated during construction of the storm sewer. Access will be maintained for local traffic. • No impacts are anticipated from the operation of the proposed works.
	(2) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Infrastructure	**(1)** Extend the Willemse Drain to the problem area	Low	• Once installed the storm sewer would function efficiently. • System components would require regular maintenance to ensure that it functions effectively.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Climate Change	**(1)** Extend the Willemse Drain to the problem area	Low	• Providing a suitable outlet for properties in the Maple Street area will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Table 3.18 - Environmental Effects Analysis: Problem Area 6A

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• Few impacts to aquatic habitat are expected given that the proposed work would not occur within a watercourse. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operations of the proposed works.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low to Moderate	• Impacts to aquatic habitat are expected to be low given that the proposed work would occur primarily within existing road allowances. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operations of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• Limited vegetation removal will be required to facilitate implementation of this option as a majority of the work will occur within agricultural fields. • If required, tree and vegetation removal will be timed to minimize impacts to breeding birds and other wildlife.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Moderate	• Some tree and shrub removal would be required within the open portion of the Alexander Drain to increase capacity. • Tree and vegetation removal will be limited as much as practical and be timed to minimize impacts to breeding birds and other wildlife.
	(3) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• No impacts anticipated during construction.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low	• No impacts anticipated during construction.
	(3) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.
SOCIAL			
• Community	**(1)** Add additional stormwater storage at edge of agricultural field	Low to Moderate	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. • Affected property owners would be compensated for impacts related to the construction and operation of the facility. • Ongoing impacts to crops would be compensated on an annual basis, if required.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Moderate	• Implementation of this alternative will cause some disruption to local residents during the construction component of the project. Traffic control measures will be implemented to minimize the impact on residents. • Access will be maintained for local traffic. • No impacts anticipated from operations of the proposed works.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Add additional stormwater storage at edge of agricultural field	Minimal/ Nil	• No Impacts anticipated.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Minimal/ Nil	• No Impacts anticipated.
	(3) Do Nothing	Minimal/ Nil	• No Impacts anticipated.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Archaeological Resources	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operations of the proposed works.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low	• Stage 1-2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operations of the proposed works.
	(3) Do Nothing	Minimal/ Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Add additional stormwater storage at edge of agricultural field	Low to Moderate	• Affected property owners would need to be compensated for impacts associated with construction and operation of the storage facility. • Grant funding options could be explored to help mitigate costs
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Moderate to High	• Work would be undertaken as part of overall asset management plan and implemented at some point in the future. • Grant funding options could be explored to help mitigate costs
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Add additional stormwater storage at edge of agricultural field	Low to Moderate	• Affected property owners would be compensated for crop losses related to the project.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
TECHNICAL			
• Transportation	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• Few impacts to traffic movement are anticipated given that work will not occur within the municipal road allowance. • No impacts anticipated from the operations of the proposed works.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Moderate	• Traffic movement will be impacted during road reconstruction and installation of the storm sewer. Access will be maintained for local traffic, however there may be brief periods when access will be unavailable. • No impacts anticipated from the operations of the proposed works.
	(3) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.
• Infrastructure	**(1)** Add additional stormwater storage at edge of agricultural field	Moderate	• The storage area would require regular maintenance to ensure that accumulated sediment does not impact crop viability and maintains storage capacity.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low	• The overland flow route and open section of the Alexander Drain will require regular maintenance to ensure that capacity is maintained and that banks are not eroding. • New outlets would require regular maintenance.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Climate Change	**(1)** Add additional stormwater storage at edge of agricultural field	Low	• Providing additional storage for Problem Area 6A will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(2) Upgrade closed portion of DeJersey Drain and improve flow path	Low	• Providing a suitable outlet for properties in Problem Area 6A will result in reduced maintenance requirements for the Municipality in the long term and ensure that properties have an outlet for excess stormwater runoff during extreme storm events.
	(3) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Table 3.19 - Environmental Effects Analysis: Problem Area 6B

Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
NATURAL			
• Aquatic	**(1)** Add additional stormwater storage	Low	• Impacts to aquatic habitat are expected to be low given that the proposed work does not occur within a watercourse. • Sediment and erosion control measures would be implemented during construction to minimize impacts to downstream drainage outlets. • No impacts anticipated with operations of the proposed works.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing infrastructure and natural systems.
• Terrestrial	**(1)** Add additional stormwater storage	Low	• No vegetation removal is anticipated.
	(2) Do Nothing	Low	• Not addressing stormwater management requirements could result in localized flooding and impacts downstream to existing natural systems.
• Hydrogeology	**(1)** Add additional stormwater storage	Low	• No impacts anticipated during construction.
	(2) Do Nothing	Low to Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate subsurface drainage conditions.
SOCIAL			
• Community	**(1)** Add additional stormwater storage	Low to Moderate	• Implementation of this alternative may cause some disruption to local residents during the construction component of the project. • Access will be maintained for local traffic. • No impacts anticipated from the operations of the proposed works.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns.
CULTURAL			
• Built Cultural Resources and Cultural Heritage Landscapes	**(1)** Add additional stormwater storage	Minimal/ Nil	• No Impacts anticipated.
	(2) Do Nothing	Minimal/ Nil	• No Impacts anticipated.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Archaeological Resources	**(1)** Add additional stormwater storage	Low	• Stage 1- 2 Archaeological Assessments will be required for undisturbed lands prior to development proceeding to ensure that buried cultural material is not negatively impacted. • No Impacts anticipated from operations of the proposed works.
	(2) Do Nothing	Minimal/ Nil	• No Impacts anticipated.
ECONOMIC			
• Municipal	**(1)** Add additional stormwater storage	Low to Moderate	• Affected property owners would need to be compensated for impacts associated with construction and operation of the storage facility. • Grant funding options could be explored to help mitigate costs
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
• Community	**(1)** Add additional stormwater storage	Low	• No economic impacts to local residents are anticipated as a result of the work.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.
TECHNICAL			
• Transportation	**(1)** Add additional stormwater storage	Low	• Few impacts to traffic movement are anticipated given that work would not occur within the limits of the road allowance. • No impacts anticipated from the operations of the proposed works.
	(2) Do Nothing	Low to Moderate	• Lack of adequate drainage may have a long-term impact on the integrity of the road network.
• Infrastructure	**(1)** Add additional stormwater storage	Low to Moderate	• May require additional maintenance to ensure that capacity is maintained and the system functions effectively.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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Environmental Component	Alternative Solution	Level of Effect	Impact Considerations (Construction and Operational Activities)
• Climate Change	**(1)** Add additional stormwater storage	Low	• Providing additional storage volume for more intense storms with the ability to retain the system peak flows.
	(2) Do Nothing	Moderate	• Not addressing stormwater management requirements could result in localized flooding and aggravate existing drainage concerns, resulting in potential infrastructure repairs or additional deterioration.

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3.6 Identification of a Preliminary Preferred Solution

The relative merits of each option were examined during the technical review of the study alternatives. Based on this assessment, the Municipality indicated a preference for the following preferred Alternatives:

Problem Area 2 – Alternative 1 **–** Install new storm sewer on Crozier ROW.

Problem Area 3 – Alternative 1 – Install twin inlet catch basins on Wellington Street & upgrade storm water infrastructure on Ontario and Queen Street.

Problem Area 4 – Alternative 1 – Upsize storm sewer on south side of Townsend Line**.**

Problem Area 5 – Alternative 1 – Extend the Willemse Drain to the problem area.

Problem Area 6A – Alternative 2 – Upgrade closed portion of DeJersey Drain and improve flow path.

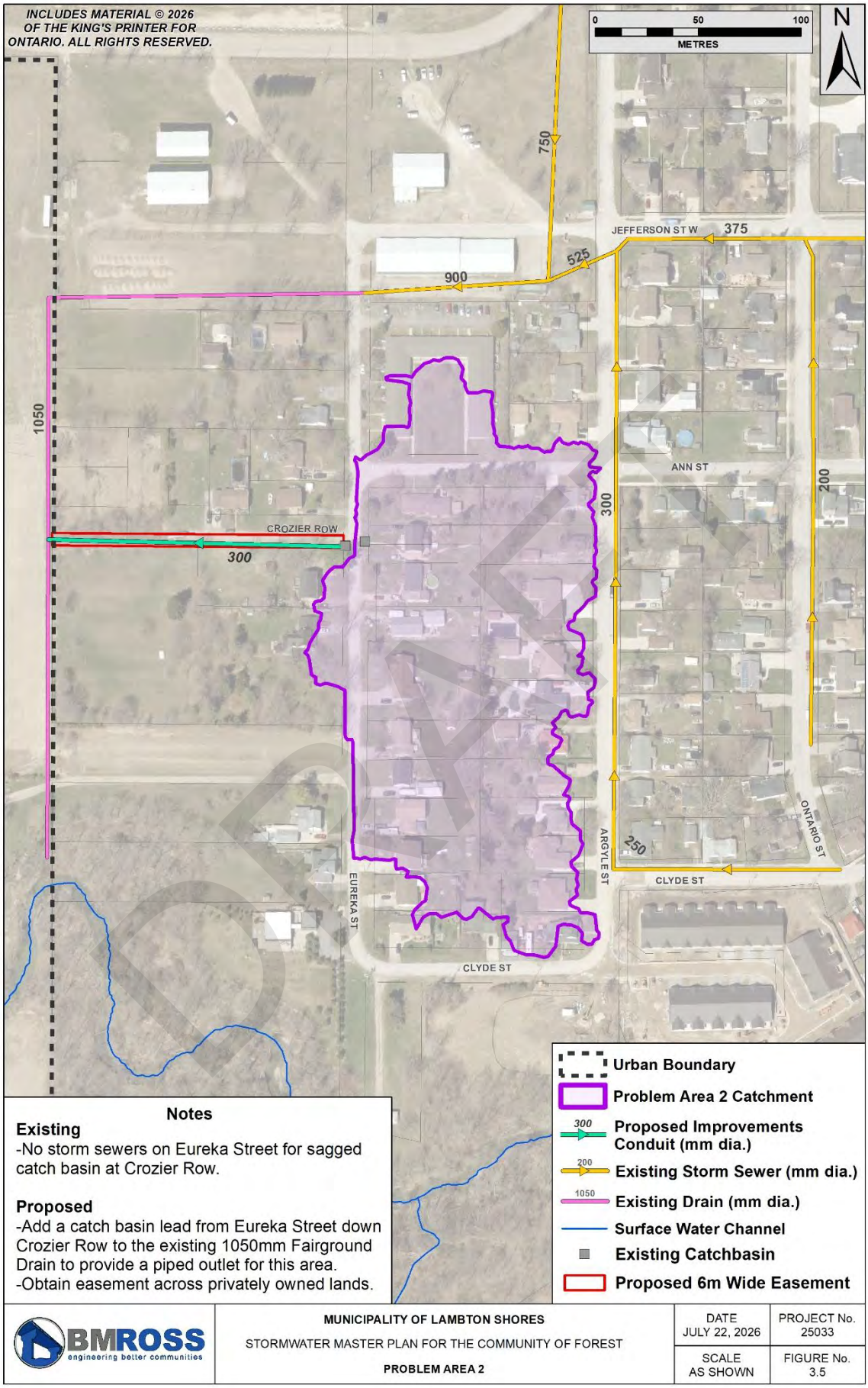
Problem Area 6B – Alternative 1 – Add additional stormwater storage.

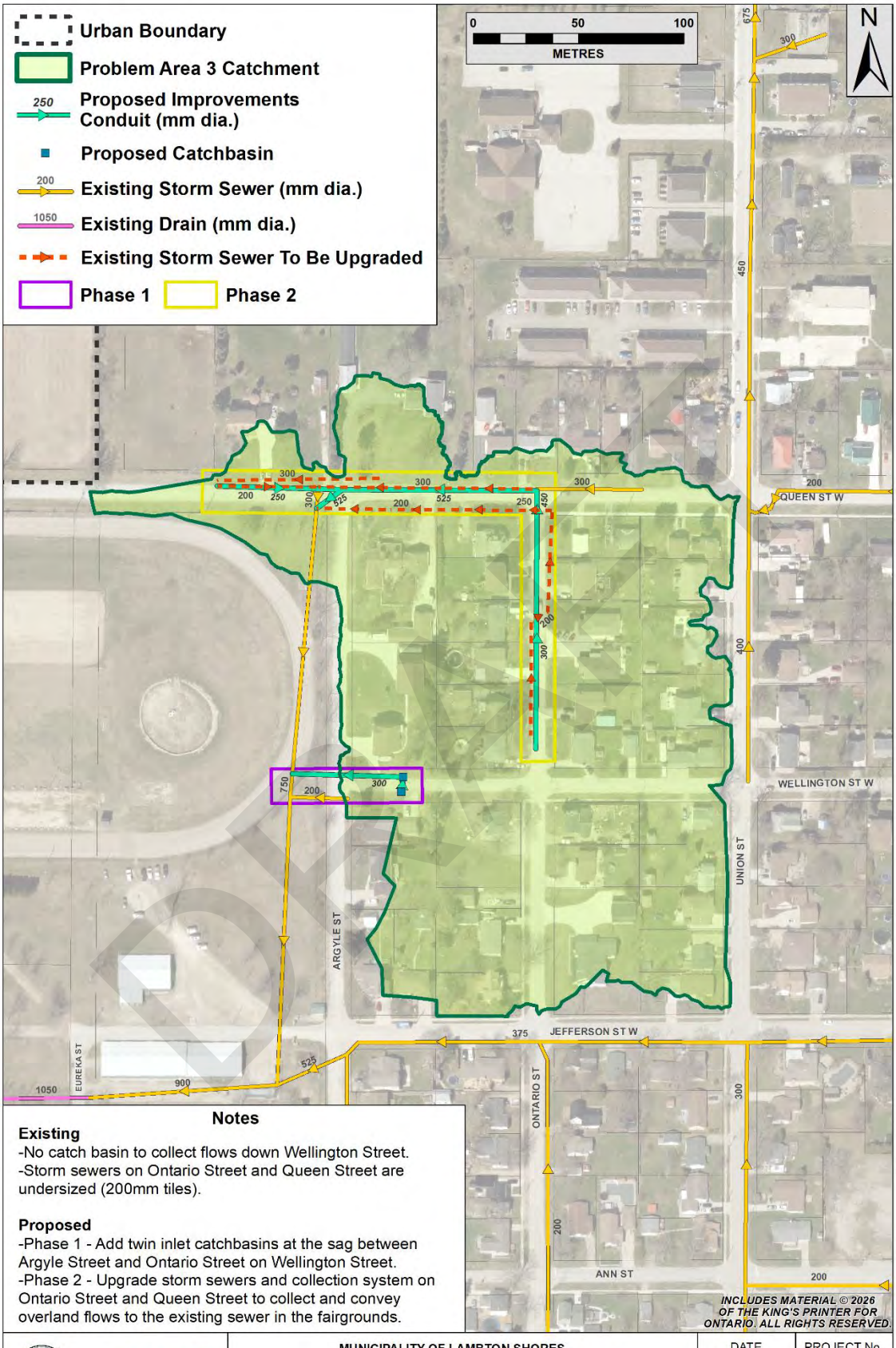
There were a number of attributes associated with the preferred alternatives that justified their consideration as the preferred Master Plan alternatives.

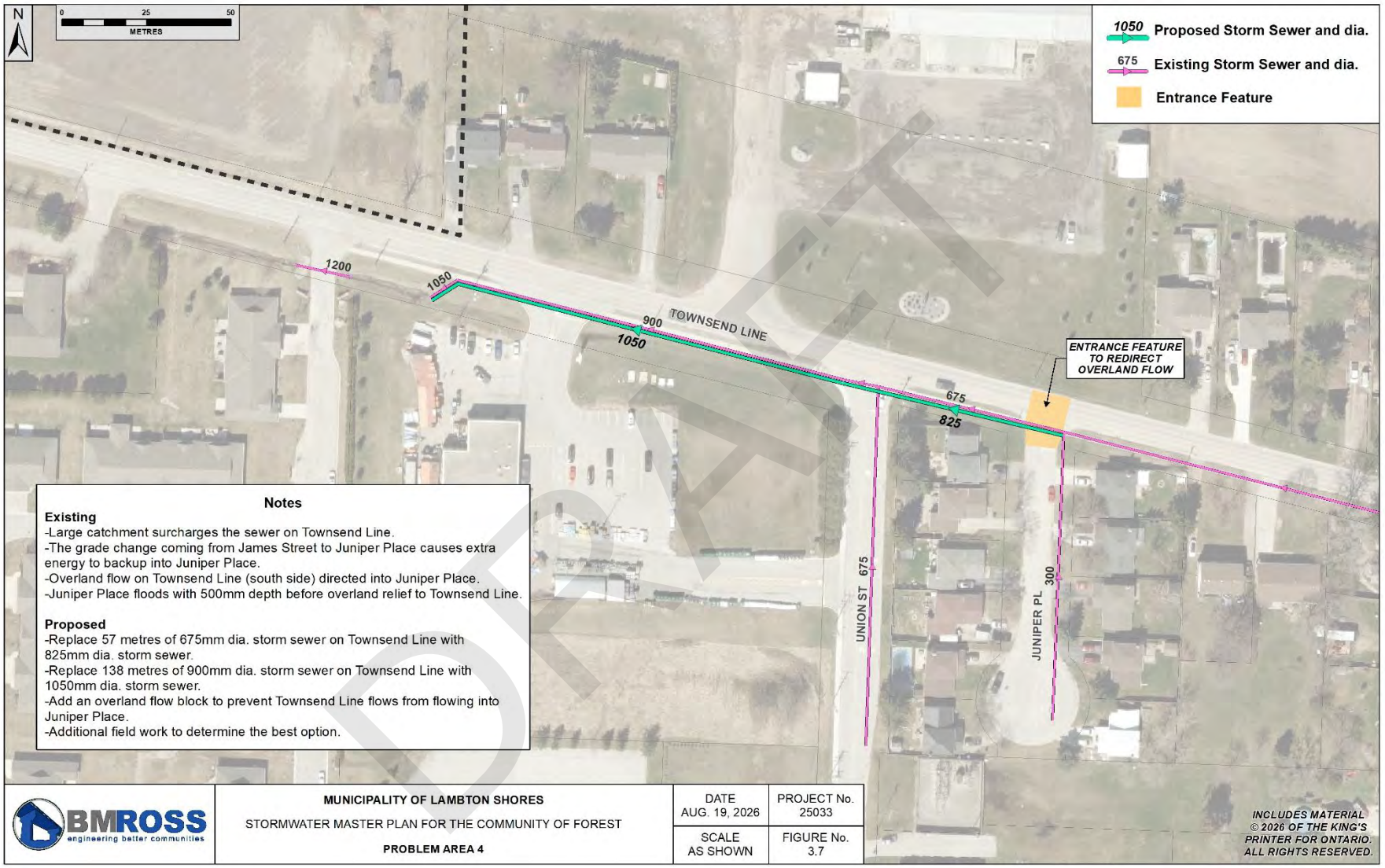
- Provides the Forest study area with an improved stormwater drainage system that provides increased capacity and resiliency during extreme storm events.
- Provides an infrastructure plan which will minimize impacts to receiving streams while providing improved drainage where required.
- Utilizes existing infrastructure more effectively to increase system capacity.
- Addresses long-term stormwater deficiencies within the study area and is the most cost-effective approach when considering asset management planning requirements.

Figures 3.5 – Figure 3.9 illustrate the preferred alternatives for each of the identified problem areas.

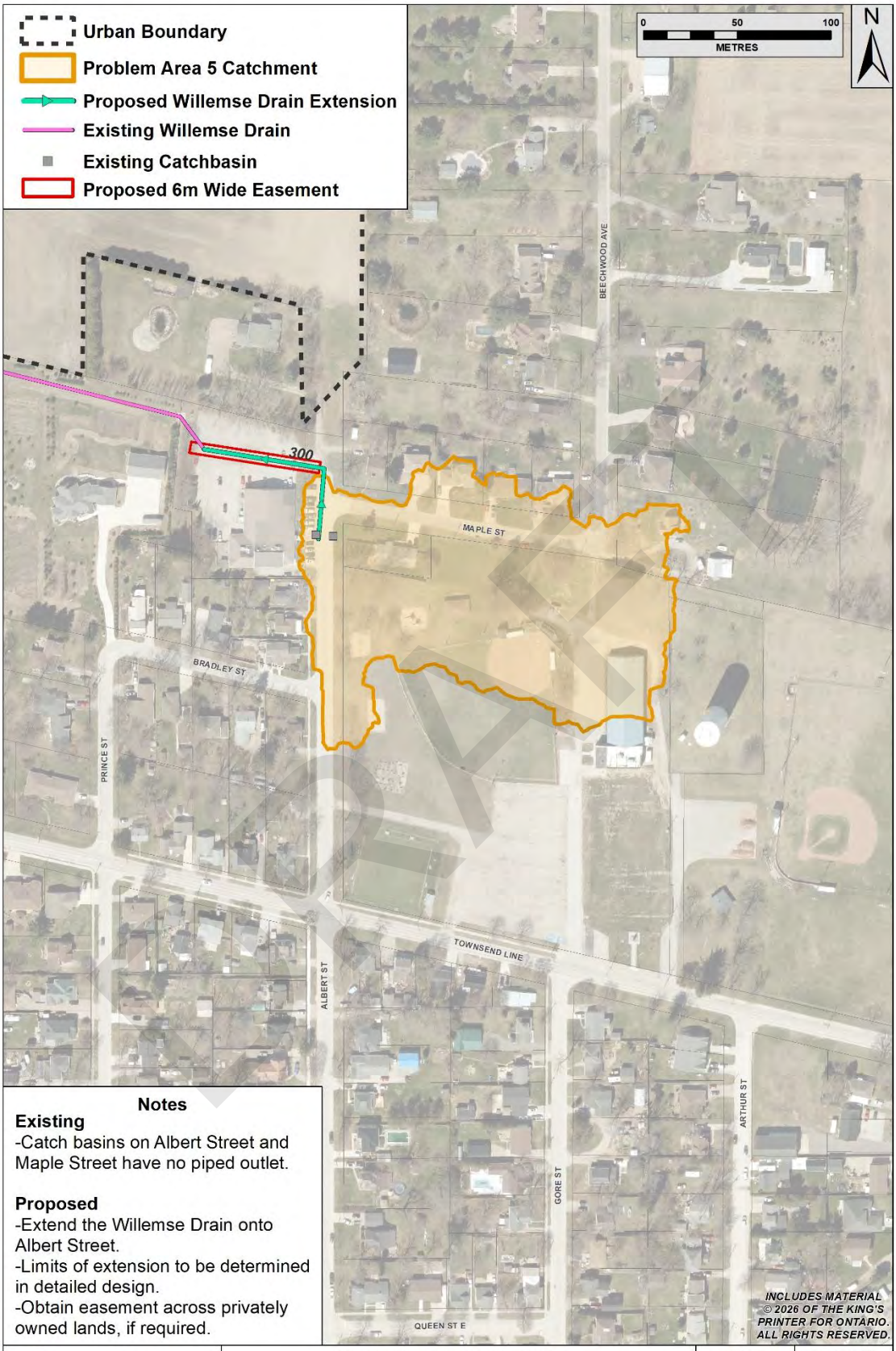
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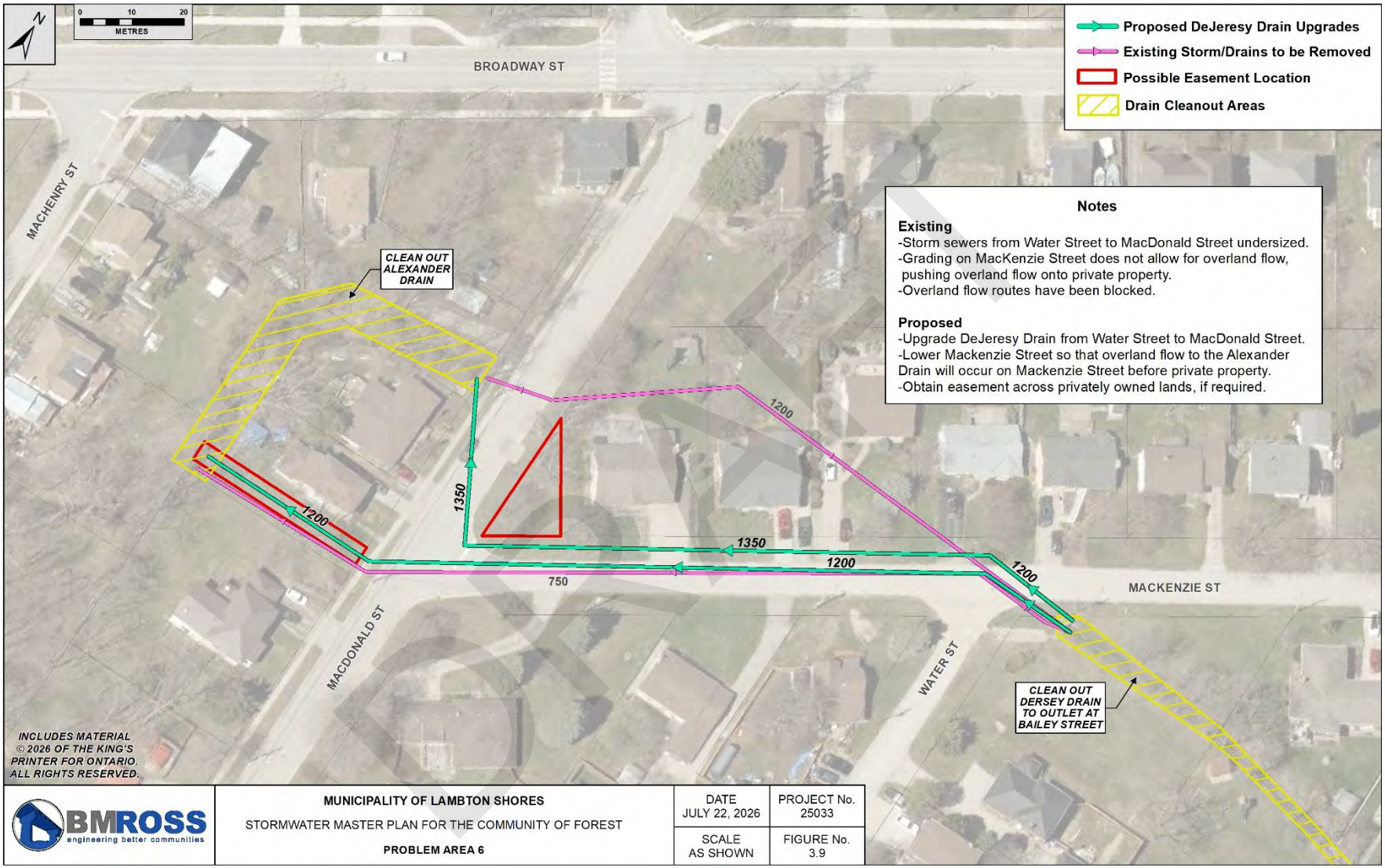

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0
50
100
METRES
N
750
900
525
JEFFERSON ST W
375
1050
ANN ST
300
200
CROZIER ROW
300
EUREKA ST
ARGYLE ST
ONTARIO ST
250
CLYDE ST
CLYDE ST
Notes
Existing
-No storm sewers on Eureka Street for sagged catch basin at Crozier Row.
Proposed
-Add a catch basin lead from Eureka Street down Crozier Row to the existing 1050mm Fairground Drain to provide a piped outlet for this area.
-Obtain easement across privately owned lands.
Urban Boundary
Problem Area 2 Catchment
300 Proposed Improvements Conduit (mm dia.)
200 Existing Storm Sewer (mm dia.)
1050 Existing Drain (mm dia.)
Surface Water Channel
Existing Catchbasin
Proposed 6m Wide Easement
BMROSS engineering better communities
MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN FOR THE COMMUNITY OF FOREST
PROBLEM AREA 2
DATE JULY 22, 2026
PROJECT No. 25033
SCALE AS SHOWN
FIGURE No. 3.5


Urban Boundary
Problem Area 3 Catchment
250 Proposed Improvements Conduit (mm dia.)
Proposed Catchbasin
200 Existing Storm Sewer (mm dia.)
1050 Existing Drain (mm dia.)
Existing Storm Sewer To Be Upgraded
Phase 1
Phase 2
0 50 100
METRES
N
QUEEN ST W
WELLINGTON ST W
JEFFERSON ST W
ANN ST
ARGYLE ST
UNION ST
ONTARIO ST
EUREKA ST
Notes
Existing
-No catch basin to collect flows down Wellington Street.
-Storm sewers on Ontario Street and Queen Street are undersized (200mm tiles).
Proposed
-Phase 1 - Add twin inlet catchbasins at the sag between Argyle Street and Ontario Street on Wellington Street.
-Phase 2 - Upgrade storm sewers and collection system on Ontario Street and Queen Street to collect and convey overland flows to the existing sewer in the fairgrounds.
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MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN FOR THE COMMUNITY OF FOREST
PROBLEM AREA 3
DATE JULY 22, 2026
PROJECT No. 25033
SCALE AS SHOWN
FIGURE No. 3.6


N
0
25
50
METRES
1050 Proposed Storm Sewer and dia.
675 Existing Storm Sewer and dia.
Entrance Feature
1200
1050
900
1050
TOWNSEND LINE
675
825
ENTRANCE FEATURE TO REDIRECT OVERLAND FLOW
UNION ST 675
JUNIPER PL 300
Notes
Existing
-Large catchment surcharges the sewer on Townsend Line.
-The grade change coming from James Street to Juniper Place causes extra energy to backup into Juniper Place.
-Overland flow on Townsend Line (south side) directed into Juniper Place.
-Juniper Place floods with 500mm depth before overland relief to Townsend Line.
Proposed
-Replace 57 metres of 675mm dia. storm sewer on Townsend Line with 825mm dia. storm sewer.
-Replace 138 metres of 900mm dia. storm sewer on Townsend Line with 1050mm dia. storm sewer.
-Add an overland flow block to prevent Townsend Line flows from flowing into Juniper Place.
-Additional field work to determine the best option.
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MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN FOR THE COMMUNITY OF FOREST
PROBLEM AREA 4
DATE
AUG. 19, 2026
PROJECT No.
25033
SCALE
AS SHOWN
FIGURE No.
3.7
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Urban Boundary
Problem Area 5 Catchment
Proposed Willemse Drain Extension
Existing Willemse Drain
Existing Catchbasin
Proposed 6m Wide Easement
0
50
100
METRES
N
BEECHWOOD AVE
300
MAPLE ST
BRADLEY ST
PRINCE ST
ALBERT ST
TOWNSEND LINE
GORE ST
ARTHUR ST
QUEEN ST E
Notes
Existing
-Catch basins on Albert Street and Maple Street have no piped outlet.
Proposed
-Extend the Willemse Drain onto Albert Street.
-Limits of extension to be determined in detailed design.
-Obtain easement across privately owned lands, if required.
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MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN FOR THE COMMUNITY OF FOREST
PROBLEM AREA 5
DATE
JULY 22, 2026
PROJECT No.
25033
SCALE
AS SHOWN
FIGURE No.
3.8


0 10 20
METRES
BROADWAY ST
MACHENRY ST
MACDONALD ST
MACKENZIE ST
WATER ST
Proposed DeJeresy Drain Upgrades
Existing Storm/Drains to be Removed
Possible Easement Location
Drain Cleanout Areas
Notes
Existing
-Storm sewers from Water Street to MacDonald Street undersized.
-Grading on MacKenzie Street does not allow for overland flow, pushing overland flow onto private property.
-Overland flow routes have been blocked.
Proposed
-Upgrade DeJeresy Drain from Water Street to MacDonald Street.
-Lower Mackenzie Street so that overland flow to the Alexander Drain will occur on Mackenzie Street before private property.
-Obtain easement across privately owned lands, if required.
CLEAN OUT ALEXANDER DRAIN
CLEAN OUT DERSEY DRAIN TO OUTLET AT BAILEY STREET
1200
1350
750
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MUNICIPALITY OF LAMBTON SHORES
STORMWATER MASTER PLAN FOR THE COMMUNITY OF FOREST
PROBLEM AREA 6
DATE JULY 22, 2026
PROJECT No. 25033
SCALE AS SHOWN
FIGURE No. 3.9

4.0 CONSULTATION PROGRAM

4.1 General

Public consultation is an integral component of the Class EA process. Public consultation allows for an exchange of information, which assists the proponent in making informed decisions during the evaluation of alternative solutions. During Phases 1 and 2 of the study process, consultation was undertaken to obtain input from the general public, stakeholders and review agencies that might have an interest in the project. The components of the public consultation program employed during the initial phases of the Class EA study are summarized in this section of the screening report and documented in Appendix C. Comments received through the consultation program and related correspondence are also discussed below and documented in Appendix C.

4.2 Public Consultation

4.2.1 Initial Public Notice

Initial comments from local residents were received following issuance of the Notice of Study Commencement. 1644 residents were mailed a copy of the public notice on May 6, 2025 and it was posted on the Municipality's website and social media pages. The Notice summarized the purpose and intent of the Master Plan and requested comments from interested persons. The feedback period for the Notice closed June 6, 2025.

4.2.2 Stormwater Questionnaire

A link to an on-line stormwater questionnaire was included in the Notice of Study Commencement. The questionnaire was developed to assist with study investigations and to provide additional opportunities for public involvement and input. Paper copies of the questionnaire were hand delivered to several residents who were unable to access the on-line link. Table 4.1 summarizes the feedback received from residents as a result of the Initial Notice and stormwater questionnaire.

4.2.3 Public Open House

A Public Open House was held on June 3, 2026 from 6:00 p.m. to 8:00 p.m. at the Shores Recreation Centre (7883 Amtelecom Parkway, Forest). A notice advertising the open house was sent to the public two weeks prior to the meeting and was also placed on the Municipality's website and social media pages. Display boards with project information were available for review during the open house. Staff from the Municipality and BMROSS were available to answer questions and discuss the project with attendees.

There were 30 attendees to the open house. Display boards provided an overview of the Master Plan process, project scope, major problem areas, previous investigations that were completed, project alternatives, preliminary recommendations and Master Plan next steps. A copy of the display boards is included in Appendix C. Table 4.2 summarizes comments received following the public open house.

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Table 4.1 – Initial Public Comments Received

Individual	Summary of Comments	Action Taken
Property owner Via online survey May 7, 2025	• Resides on Ontario Street (adjacent to Problem Area 2). • Experiences poor drainage. • Drainage problems 1-2 times a year. • Expressed concern that ponding water is damaging their property. • Intermittent sump pump use. • Suggested that priority should be placed on new Stormwater Master Plan to aid worsening parts of town.	• Comments noted and filed.
Property owner Via survey and e-mail May 7, 2025	• Resides on MacNab Street (within Problem Area 1). • Experiences poor drainage. • Drainage problems more than twice a year. • Frequent sump pump use. • Indicated that flooding is an ongoing issue whenever rain occurs. • Provided e-mail submission with additional context and photos to support survey responses.	• Comments noted and filed. • Response was provided.
Property owner Via survey May 7, 2025	• Resides on Juniper Place (within Problem Area 4). • Generally good drainage. • Drainage problems more than twice a year. • Intermittent sump pump use. • Concerns about the size and capability of Stormwater Management (main drain & sanitary) system due to pooling water. • Observes regular pooling of water on Juniper Place.	• Comments noted and filed.
Property owner Via survey May 7, 2025	• Resides on Mackinlay Avenue (outside of Problem Areas). • Generally good drainage. • No previous or current drainage problems. • Intermittent sump pump use.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on Ontario Street (adjacent to Problem Area 2). • Experiences poor drainage. • Drainage issues 1-2 times a year. • Frequent sump pump use. • Insurance claim for constant basement flooding. • Drain in front of adjacent property pools onto their yard.	• Comments noted and filed.

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Individual	Summary of Comments	Action Taken
Property owner Via survey May 8, 2025	• Resides on Prince Street (outside of Problem Areas). • Generally good drainage. • Has not experienced any drainage problems. • No sump pump.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on Ann Street (outside of Problem Areas) • Generally good drainage. • Has not experienced any drainage problems. • No sump pump.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on George Street (outside of Problem Areas). • Concern that stormwater rises to a dangerous level that places property and structures at very high risk. • Notes that stormwater rushes to the West. • Footpath erosion.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on Juniper Place (within Problem Area 4). • Experiences poor drainage. Resident classified drainage as ‘atrocious’. • Experiences drainage problems more than two times a year. • Frequent sump pump use. • Concerned that the demands for improved drainage methods have not been implemented. • Indicated that they have had multiple issues with flooding that has damaged their finished basement continuously.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on Field Street (outside of Problem Areas). • Generally good drainage. • No issues with drainage. • Sump pump does not run often. • Indicated that their builder prioritized lot grading regulations. • Stated that there is belief that past building inspectors have not been required to follow all requirements, leading to drainage problems.	• Comments noted and filed.
Property owner Via survey May 8, 2025	• Resides on Church Street (within Problem Area 6). • Experiences poor drainage. • Drainage problems occur more than twice a year. • Frequent sump pump use. • Stated that their entire street is often flooded after storms.	• Comments noted and filed.

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Individual	Summary of Comments	Action Taken
Property owner Via survey May 10, 2025	• Resides on Townsend Line (outside of Problem Areas). • Generally good drainage. • Drainage problems occur more than twice a year. • No sump pump. • Stated there is severe water buildup due to a lack of maintenance from the Municipality. • Expressed concern regarding an observed lack of maintenance throughout the Municipality.	• Comments noted and filed.
Property owner Via survey May 10, 2025	• Resides on Bayley Street (within Problem Area 6). • Experiences poor drainage. • Lived at property for more than 40 years. • Sump pump does not run often. • Noted the open ditch downstream of their home has been replaced by culverts. • Stated that stormwater does not drain fast enough.	• Comments noted and filed.
Property owner Via survey May 11, 2025	• Resides on Juniper Place (within Problem Area 4). • Experiences poor drainage. • Drainage problems occur more than twice a year. • Stated that every thunderstorm they must prepare for a flooded basement. • Sump pump does not run often.	• Comments noted and filed.
Property owner Via survey May 12, 2025	• Property on King Street West Street (outside of Problem Areas). • Experiences poor drainage. • Drainage problems occur twice a year. • Frequent sump pump use. • Stated storm drains are not capable of handling the volume of rain received. • Describes the roads as ‘angled’, which creates a ‘river’ that flows into the lower level of their building.	• Comments noted and filed.
Property owner Via survey May 12, 2025	• Resides on Juniper Place (within Problem Area 4). • Experiences poor drainage. • Drainage problems occur more than twice a year. • No sump pump. Noticed water flows down Townsend Line to Juniper Place and behind Union Street. • Field adjacent to house is always ponding.	• Comments noted and filed.

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Individual	Summary of Comments	Action Taken
Property owner Via survey May 12, 2025	• Resides on St. Anthony Crescent (outside of Problem Areas). • Experiences poor drainage. • Drainage problems occur more than twice a year. • Frequent sump pump use. • Believes the new homes being built in surrounding subdivisions are creating drainage issues. • Noticed ditches down the road have not been cleaned for many years.	• Comments noted and filed.
Property owner Via survey May 13, 2025	• Resides on Juniper Place (within Problem Area 4). • Experiences poor drainage. • Drainage problems occur more than twice a year. • Frequent sump pump use. • Regularly experiences street flooding, along with basement flooding. • Stated they would not have moved to Forest years ago if they were aware of the drainage issues here. • Believes the drainage systems are too small to accommodate all the new/ current buildings in the area. • Water flows from Townsend Line to Juniper Place. • Expressed frustration regarding the ack of involvement and initiative from the Municipality. • The resident and multiple neighbours have brought this issue to council and the Municipality. They believe it has 'fallen on deaf ears'. • Recommends fixing drainage issues for all current residents that have withstood flooding and damage, prior to new developments. • Recommends emphasis on feedback from other Juniper Place residents. • Stated residents want this issue fixed immediately to ensure they can enjoy their homes without concern.	• Comments noted and filed.
Property owner Via survey May 13, 2025	• Resides on Juniper Place (within Problem Area 4). • Experiences poor drainage. • Frequent sump pump use. • Expressed frustration regarding the state of rainwater, sewage and drainage issues. • Indicated that the drainage issues are ongoing and unacceptable. • Residents cannot use the lower portion of their home due to drainage issues.	• Comments noted and filed.

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Individual	Summary of Comments	Action Taken
	• Stated they have taken all precautionary methods as possible, such as installing a back water valve, sump pump, disconnect from sewage/storm drain, fix multiple foundation leaks.	•
Property owner Via survey May 14, 2025	• Resides on Main Street South (within Problem Area 1). • Experiences poor drainage. • No sump pump. • The property, along with two adjacent properties, have significant pooling issues. • Heavy rainfall creates a 'virtual river' across all three yards. • Expressed desire for the issue to be addressed as soon as possible.	• Comments noted and filed.
Property owner Via survey May 18, 2025	• Resides on Townsend Line (outside of Problem Areas). • Experiences fair drainage. • No sump pump. • Expressed frustration regarding the length of time required to receive help from the Municipality (over two years).	• Comments noted and filed.
Property owner Via survey May 18, 2025	• Resides on Main Street South (within Problem Area 1). • Experiences fair drainage. • Frequent sump pump use. • Experiences heavy ponding on next door property.	• Comments noted and filed.
Property owner Via survey May 19, 2025	• Resides on MacKenzie Street South (within Problem Area 6). • Experiences poor drainage. • Frequent sump pump use. • Notes pooling in backyard above drainage swale. • Stated water pools on road, which has caused a sinkhole. Although sinkhole has been fixed, water now pools on the opposite side of the road. • Stated flooding reaches knee height in property owner's yard. • Home is directly impacted by flooding (restricts access, washes away driveway stones). • States water will take days to drain.	• Comments noted and filed
Property owner Via survey May 20, 2025	• Resides on Forest Street (outside of Problem Areas). • Experiences fair drainage. • Intermittent sump pump use. • Experienced extensive damage to property that resulted in expensive repairs.	• Comments noted and filed.

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Individual	Summary of Comments	Action Taken
	• Stated that the buried drain in their yard is insufficient due to farmland draining through their property. • Swale is often full as nearby water overwhelms the existing system. • Multiple instances of basement flooding.	
Property owner Via survey May 21, 2025	• Resides on Church Street (outside of Problem Areas). • Experiences poor drainage. • Frequent sump pump use. • States they did not expect to have drainage issues while on a hill.	• Comments noted filed.
Property owner Via survey May 21, 2025	• Resides on Queen Street West (outside of Problem Areas). • Experiences good drainage. • Sump pump not used often. • Noticed significant ponding in the intersection on Washington Street intersection. • Ponding occurs near fence but clears quickly.	• Comments noted filed.
Property owner Via survey May 22, 2025	• Resides on MacNab Street (within Problem Area 1) • Private storm sewer servicing was not reconnected after the reconstruction of Highway 21 South in Forest.	• Comments noted filed.
Property owner Via survey May 23, 2025	• Resides on MacKenzie Street (within Problem Area 6). • Experiences poor drainage. • Frequent sump pump use. • States large ponds develop in spring with snow melting and rainfall. • Multiple neighbours have had their basements flooded. • Nearby property was converted for migrant worker housing but required renovation due to water damage and mould. Property has experienced further difficulty with water damage and is now up for sale again.	• Comments noted filed.
Property owner Via survey and e-mail May 23 &30, 2025	• Resides on Arthur Street (outside of Problem Areas). • Experiences poor drainage. • Frequent sump pump use. • Water from all surrounding yards drains into property owner's yard. • Has experienced neighbour attempting to fix the problem, which has caused additional flooding issues for the property owner. • Provided e-mail submission with additional context, along with supporting photos, to support survey responses.	• Comments noted filed. • Response was provided.

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Individual	Summary of Comments	Action Taken
Property owner Via survey May 24, 2025	• Resides on Bayley Street (within Problem Area 6). • Experiences poor drainage. • Intermittent sump pump use. • States since Ontario Municipal Board allowed apartment buildings to be built on wetland and/or a water sink, combined with the water flow from surrounding farmland, drainage from the building is greater than the culvert near their home can withstand. • Rain overflows in yard and onto the street.	• Comments noted filed.
Property owner Via survey May 24, 2025	• Resides on Bayley Street (within Problem Area 6). • Experiences poor drainage. • Frequent sump pump use. • States creek running along yard floods when there is significant rainfall. • Numeral instances of yard flooding. This includes flooding of up to 3ft in their garden.	• Comments noted and filed. •
Property owner Via survey May 26, 2025	• Resides on Townsend Line (within Problem Area 4). • Experiences poor drainage. • Intermittent sump pump use. • Noted basement has flooded on three occasions from stormwater and sewage. • They have spent upwards of low/mid five figures for a sewage ejection system in 2021, which has diminished backup/sewage problems since.	• Comments noted and filed.
Property owner Via survey May 26, 2025	• Resides on Leonard Street (outside of Problem Areas). • Experiences poor drainage. • Frequent sump pump use. • States road is uneven with no curbs to aid in water drainage.	• Comments noted and filed. •
Property owner Via survey May 27, 2025	• Resides on Jefferson Street (outside of Problem Areas). • Experiences poor drainage. • Frequent sump pump use. • Experiences stormwater flooding in basement multiple times a year. • Has spent significant money on attempting to remediate the issue themselves. • States insurance refuses to contribute as there has been continuous issues. • Expresses frustration with the Municipality for ignoring pleas from the public to solve this issue.	• Comments noted and filed. •

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Individual	Summary of Comments	Action Taken
Property owner Via survey May 28, 2025	• Resides on Albert Street (outside of Problem Areas). • Experiences fair drainage. • No sump pump. • States sidewalk drains into yard.	• Comments noted and filed. •
Property owner Via survey May 30, 2025	• Resides on MacDonald Street (outside of Problem Areas). • Experiences poor drainage. • Intermittent sump pump use. • States that during heavy rainfall, the storm drains are not sufficient to remove water although there is a drain at the end of the road. • Stormwater drains onto their lawn and causes water to drain into basement.	• Comments noted and filed. •
Property owner Via survey June 4, 2025	• Resides on King Street (outside of Problem Areas). • Experiences poor drainage. • Frequent sump pump use. • States roadway in front of property gets flooded. • Notes all water drains into the front yard and creates a lake. • Recommends storm sewers to be added along the roadway.	• Comments noted and filed.
Property owner Via survey	• Resides on Mackenzie Street (within Problem Area 6). • Experiences poor drainage. • Sump pump does not run often. • Has lived at the property for 30 years and has experienced basement flooding. • States the creek has overflowed multiple times, causing multiple instances of basement flooding. • Expresses frustration that flooding issues have persisted throughout their 30 years of residency without action from the Municipality.	• Comments noted and filed. • Response was provided.
Property owner Via survey	• Resides on Mackenzie Street (within Problem Area 6). • Experiences good drainage. • No sump pump. • Notes multiple instances of basement flooding. • Stated that the storm sewer drain located near property has been backed up. • Notes eavestroughs cannot handle significant rain. • Stated that insurance company has claimed their property is located on a floodplain due to the lack of maintenance at the creek located south of the property.	• Comments noted and filed. • Response was provided.

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Individual	Summary of Comments	Action Taken
Property owner Via survey	• Resides on MacKenzie Street (within Problem Area 6). • Experiences good drainage. • Intermittent sump pump use. • According to senior neighbours, flooding has not been this significant since the open ditch was enclosed to build on lots 64, 65, and 66. • Sent a letter to council.	• Comments noted and filed. • Response was provided.
Many property owners Via survey	• Letter was submitted on behalf of several concerned Forest residents in the area of Bayley and MacKenzie Streets. • Have requested an opportunity to meet with council to discuss their concerns. • On May 23, 2019 water levels reached 7’ above normal levels and damages exceeded 1 million. • On Aug. 23, 2023 water levels reached 6’ above normal levels with serious flood damage. • On April 3, 2025 during a normal rain event, the level reached 5.5’ above normal levels. • Expressed frustration with the lack of response from the Municipality in regard to the habitual flooding problem. • Recommends a study be completed by a higher authority to create a long-range plan for water retention ponds or bypass ditches. • Requests and inspection of the drain across lots 66 and 67 to MacDonald Street.	• Comments noted and filed. • Response was provided.

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Table 4.2 - Summary of Public Meeting Comments

Individual	Summary of Comments	Action Taken
Property owner Via phone June 2, 2026	• Lives at the south end of Forest, on Forest Road. • Stated that there is a lot of runoff from fields and subdivision northeast of their property. • Stated that their property floods following intense rainfall events.	• Information noted & filed. • Suggested that they attend the open house to explain issues that they are experiencing.
Member of the BIA Via phone June 3, 2026	• Inquired if business owners could attend open house. • Inquired about information that will be presented at the open house.	• Confirmed that everyone was welcome at the meeting. • Explained open house set-up and information that would be provided.
Property owner Via comment sheet June 3, 2026	• Resides on MacDonald Street. • Concerned with potential drain improvements near McDonald Street. • Inquired if a survey will be completed to determine property boundaries. • Concerned about the extent of tree and vegetation removal and access. • Inquired about the extent of drain improvement and if it would impact their property size. • Stated that the small drain that outlets to Alexander Drain north of their property nearly overtops following intense rainfall events. Asked if this could be addressed. • Concerned that their property will be impacted.	• Information noted and filed.
Property owner Via comment sheet June 3, 2026	• Stated that during intense rainfall events, the Lougheed Drain overtops and flows from the field adjacent to their house to Bayley Street. During the last major event, 2 feet of gravel was deposited on their laneway.	• Information noted and filed.
Property owner Via comment sheet June 3, 2026	• Resides on MacDonald Street. • Concerned about the concrete drain located in their backyard that runs towards Royal Street Drain. Stated that the drain does not flow anymore and that they pump water from their backyard to MacDonald Street. • Stated that grading of neighbouring properties results in flows to their property adding to the existing flows.	• Information noted and filed.

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Individual	Summary of Comments	Action Taken
	• Stated that the Municipality tried to clean the drain 10+ years ago but were unsuccessful since it was clogged with dirt and roots. • Provided photos of backyard during intense rainfall events and aerial photos of property and location of clogged drain.	
Property owner Via email June 3, 2026	• Resides in the new subdivision near Todd Drain. • Explained that their backyard floods following heavy rainfall events and that they have provided photos and videos in the past. • Stated that measures have been taken to minimize drainage from farm fields to their backyards. • Looking for reassurance that proactive planning will prevent flooding and facilitate good drainage in their developing subdivision. • Stated that their area is not listed as a problem area in the Master Plan.	• Information noted and filed.
Property owner Via email June 4, 2026	• Noted that municipal storm drains previously installed are overtaxed and too many inlets have been allowed over time. During heavy rain, water in the storm drains exceed capacity and excess water overtops street level catch basins causing basements to flood. States that this issue was foreseeable and controllable and needs to be rectified by installing larger drains and/or more drains. • Noted that open drainage ditches and creeks are not maintained to accommodate adequate drainage during heavy rainfall. The Municipality has allowed new growth and debris and sediment to accumulate resulting in reduced drainage space and clogging at culverts and within streams. • Stated that someone needs to pay more attention to the root causes of the slow rainfall runoff. • Stated that from their own personal experiences that the slightest amount of debris in a drainage ditch caused flooding of farmland and removing the debris solved the problem. Cleanup became both an observational and cyclical event.	• Information noted and filed.
Property owner Via email June 5, 2026	• Stated that they are experiencing flooding in the parking lot of their commercial building. The problems started in 2023 after a hotel on Main Street North was removed. • Provided photos of parking lot during flooding events.	• Information noted and filed.

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4.2 Review Agency Consultation

4.2.4 Initial Consultation Phase

Input into the study process was solicited from government review agencies and identified stakeholders by way of direct mail and email correspondence. Agencies and organizations that might have an interest in the project were sent a general project summary letter, which provided information on the study, outlined the Master Plan process, and the scope of investigations. The project study area was also incorporated into the letter. The information was circulated on May 7, 2025, and agencies were requested to forward comments by June 6, 2025. A copy of the letter and list of agencies circulated is included in Appendix C. A summary of the comments received following the initial letter is summarized in Table 4.3.

Table 4.3 – Agency Comments

Commenting Agency	Comments	Response
Christa Rigney, Ministry of Natural Resources Via email May 16, 2025	• Provided resources on natural heritage and recommends that resources be incorporated into the master plan.	• Comments noted and filed.
Amanda Antwi-Nsiah, Ministry of Citizenship and Multiculturalism Via email May 26, 2025	• Outlined that MCM's interest regarding this master plan relates to conserving Ontario's cultural heritage. • Provided resources on cultural heritage and recommends that resources and screening documents be incorporated into the master plan.	• Comments noted and filed.
Monika Macki, Ministry of Environment, Conservation and Parks Via email June 4, 2025	• Provided resources on natural heritage and recommends that resources be incorporated into the master plan. • Listed Indigenous communities that potentially would be interested and impacted by the project.	• Comments noted and filed.

4.2.5 Public Meeting Update

A project update letter was sent to review agencies on May 22, 2026 in advance of the public open house providing meeting details. Copies of the presentation material were made available upon request. Table 4.4 provides a summary of feedback received from agencies as a result of the additional information.

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Table 4.4 – Agency Comments: Project Update

Commenting Agency	Comments	Response
Amanda Antwi-Nsiah, Ministry of Citizenship and Multiculturalism Via email June 4, 2026	• Requested a copy of materials presented at the public open house. • Inquired which approach would be followed during the Master Plan.	• Emailed a digital copy of the poster boards presented at the open house. • Confirmed Master Plan approach.
Christa Rigney, Ministry of Natural Resources Via email June 5, 2026	• Requested a copy of materials presented at the public open house.	• Emailed a digital copy of the poster boards presented at the open house.

4.3 Indigenous Consultation

4.3.1 Indigenous Consultation Process

The Crown has a duty to consult with First Nation and Métis communities if there is a potential to impact on Aboriginal or treaty rights. This requirement is delegated to project proponents as part of the Class EA process; therefore, the project proponent has a responsibility to conduct adequate and thorough consultation with Aboriginal communities as part of the Class EA consultation process. The project study area is located adjacent to sensitive natural features that may be of concern to First Nation and Métis communities in the area. These features include Hickory Creek and the adjacent wooded floodplain.

4.3.2 Background Review

In order to identify Aboriginal Communities potentially impacted by the project the Aboriginal and Treaty Rights Information System (ATRIS) was consulted. A search was conducted for Aboriginal Communities, including their traditional territories that would lie within a 50 km radius of the project study area. Utilizing this process and feedback received from the MECP, six aboriginal communities/organizations were identified in conjunction with this project including: Aamjiwnaang First Nation, Bkejwanong (Walpole Island), Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Oneida Nation of the Thames. Correspondence was forwarded to each community/organization on May 7, 2025 detailing the proposed project and asking for input. Following the initial consultation phase, input was received from two communities, Chippewas of Kettle and Stony Point First Nations and Chippewas of the Thames First Nations.

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Table 4.5 - Summary of Indigenous Comments

Aboriginal Community	Comments	Action Taken
Jana George, Chippewas of Kettle and Stony Point First Nation Via email May 15, 2025	• Requested updates and opportunities to review project documents and reports.	• Comments noted and filed.
Erna Leclair, Chippewas of the Thames First Nation Via Nations Connect June 19, 2025	• Reviewed project information and identified that the project is of moderate concern to the community due to the impacts to water. • Requested updates as the Master Plan progresses.	• Comments noted and filed.

4.3.3 Public Meeting Update

A project update letter was sent to First Nation and Métis communities on May 22, 2026 in advance of the public meeting providing meeting details. Table 4.6 provides a summary of feedback received from Indigenous communities as a result of the additional information.

Table 4.6 - Summary of Indigenous Comments: Project Update

Aboriginal Community	Comments	Action Taken
Chippewas of Kettle and Stony Point First Nation Via email June 1, 2026	• Requested a copy of materials presented at the public open house.	• Emailed a digital copy of presentation boards.
Erna Leclair, Chippewas of the Thames First Nation Via Nations Connect July 25, 2026	• Received additional information and want to be kept informed about the project. • Asked for draft Master Plan report to be provided for review. • Would like to be notified and participate as monitors if archaeological assessments are completed for projects identified in the Master Plan.	• Comments noted and filed.

4.3.4 Review of Draft Master Plan Report

A draft of the Master Plan report was provided to Chippewas of Kettle and Stony Point First Nation and Chippewas of the Thames First Nation in August 2026 for their review. Table 4.7 provides a summary of feedback received following review of the draft report.

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Table 4.7 - Summary of Indigenous Comments: Draft Master Plan Report

Aboriginal Community	Comments	Action Taken
Chippewas of Kettle and Stony Point First Nation Via email September 25, 2026	Our team has completed our review of the Forest Stormwater Master Plan and have a few questions that we are hoping you can help to provide additional information on. • 1.4.3 Consideration of Climate Change: Can you provide more details on how the impacts associated with climate change are being considered? • Table 3.14 - Environmental Effects Analysis: Are there more details that can be provided on what sediment and erosion control measures will be implemented? Additionally, we would appreciate being notified and provided an opportunity to review any archaeological assessments that are completed for any of the proposed solutions for the problem areas. Even if only a Stage 1 or Stage 2 assessment is completed, we would like to review the reports. If Stage 2 assessments are completed, we would also like to have a community monitor participate. Given the close proximity to our community, it is important that we remain involved in any archaeological assessments that are completed in this area.	• Provided details about climate change and sediment and erosion control. • Indicated that they would be notified prior to archaeological investigations being undertaken.
Erna Leclair, Chippewas of the Thames First Nation Via Nations Connect September 25, 2026	The Draft Master Plan identifies a number of stormwater infrastructure improvements throughout Forest, including upgrades to municipal drains and storm sewers and the creation of additional stormwater storage. Several of the recommended projects will ultimately increase stormwater drainage being conveyed toward Hickory Creek. Stormwater runoff, if improperly designed, can impact Aboriginal and Treaty rights by degrading water quality, altering aquatic habitat and affecting fish, plants, and other resources relied upon for the exercise of those rights. Because of this, COTTFN previously identified this project as being of moderate concern. COTTFN provides the following comments and recommendations without prejudice to the Aboriginal and Treaty rights of COTTFN or to any future positions COTTFN may take regarding this project:	• Response sent acknowledging input provided and confirming that their recommendations will be considered during implementation of the Master Plan.

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Aboriginal Community	Comments	Action Taken
	Water Quality and Quantity: COTTFN requests that detailed design consider both water quantity and water quality impacts associated with increased stormwater conveyance. Where projects increase flows to the Alexander Drain, Hickory Creek or other receiving watercourses, the Municipality should ensure that the works do not contribute to increased erosion, degradation of aquatic habitat or deterioration of water quality. COTTFN would like the Municipality to incorporate natural Low Impact Development (LID) measures wherever feasible as projects move into detailed design. Measures such as vegetated swales, infiltration features and other naturalized approaches could help reduce runoff and promote infiltration, while also presenting an opportunity to enhance and restore riparian habitat along drains and creeks within Forest. This would provide broader ecological and water quality benefits rather than focusing solely on stormwater conveyance. Tree Removal and Replacement: Where tree or shrub removal is required to accommodate stormwater infrastructure, removal should be minimized. COTTFN requests that trees removed as a result of the proposed works be replaced at a minimum 3:1 ratio, using appropriate native species wherever possible. The Draft Master Plan identifies that some tree and shrub removal may be required, particularly in association with drainage improvements near the Alexander Municipal Drain. Archaeology and AFL Participation: The Draft Master Plan commits to completing Stage 1–2 Archaeological Assessments for previously undisturbed areas prior to construction. COTTFN reiterates that all projects involving archaeological assessment or ground disturbance with archaeological potential must be brought forward to COTTFN, including projects classified as exempt from further Class EA requirements. Prior to archaeological fieldwork, the Municipality or its consultant should contact COTTFN to obtain and execute COTTFN's Archaeological Field Liaison (AFL) Agreement and provide COTTFN the opportunity to have AFLs participate in the assessment.	

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4.4 Consultation Summary

The consultation program developed for this project was directed toward Forest residents who live within the project study area limits and will be potentially impacted by recommendations from the study. Input was also sought from federal/provincial review agencies and Indigenous communities. Significant feedback was received from residents during the Master Plan. The feedback received was helpful in confirming problem areas identified through the engineering investigations and refining the preferred recommendations. Agency consultation included feedback from the MECP, MCM and MNR. Input was sought from six Indigenous communities and organizations identified through a background check and with input from MECP. Feedback was received from the Chippewas of Kettle and Stony Point First Nation and Chippewas of the Thames First Nation.

5.0 EVALUATION OF THE PRELIMINARY PREFERRED ALTERNATIVES

5.1 Framework of Analysis

Following selection of the preferred alternatives noted in Section 3.7, a study framework was developed to further evaluate the potential impacts of implementing these projects. The purpose of this review was to assess the environmental interactions resulting from the construction and operation of the various projects, and to determine if the identified interactions would generate potential environmental impacts. The assessment of the preferred alternatives incorporated these activities:

- Hydraulic analysis of the stormwater drainage system.
- Assessment of the construction and operational requirements of the proposed works.
- Input from the public, stakeholder groups and government agencies.
- Review of engineering methods associated with the different projects.
- Evaluation of the potential impacts of the projects on the environmental features, including residual effects following mitigation.

The following section of the report summarizes the findings of the evaluation process.

5.2 Storm Drainage Design

Storm drainage investigations completed in conjunction with the Master Plan process have identified deficiencies with the existing storm drainage collection system in established areas of Forest. In several locations, storm drainage facilities (existing structures and drainage collection systems) lack sufficient capacity to address the needs of the service area. Much of the existing storm drainage infrastructure was installed 30-40 years ago and is undersized for current conditions. Several of the identified problem areas lack any storm drainage infrastructure and would need extensive upgrades to address the problems.

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A number of municipal drains pass through the urbanized area of Forest to an outlet at Hickory Creek. These municipal drains were initially designed to drain agricultural lands and have been modified over time as the community expanded to an urban setting. The urban portion of these systems has insufficient capacity where constrained by structures and urban infrastructure, resulting in localized flooding.

5.3 Storm Sewer Design Criteria

The proposed storm sewers are being planned for project areas where drainage deficiencies have been identified. Existing and proposed storm sewer infrastructure should be located in the street right-of-way or in an approved easement. The storm sewer discharge must be carried to an appropriate outlet with sufficient capacity so that no damage is done to lands or the receiving watercourse. Storm sewers should be designed to accept all drainage from the contributing area and should be sized in accordance with the following:

- The system of catch basins, storm sewers and roadside ditches, shall be designed at a minimum the 1:2 year storm (based on the City of Sarnia 2024 Stormwater Management Design Guidelines).
- In general, the Rational Method shall be used for the sizing of the minor storm sewer system at the final design stage. Calculations based on a hydrologic simulation model are required for systems serving large areas or involving treatment and/or storage systems.
- The identified road sections will be restored to their previous condition or upgraded to an urban cross-section with curb and gutter following completion of the planned storm sewer upgrades.

5.4 Storm Sewer Construction

Activities associated with storm sewer construction generally include the following tasks:

- Advise emergency services and school transportation services of potential road closures.
- Mobilize to the site.
- Provide traffic signs, barricades and roadside protection at the limits of the construction area, as required.
- Complete site layout, including service locates.
- Install erosion and sediment controls.
- Install protective fencing around trees to be protected.
- Clear and grub trees to be removed (if required).
- Remove existing road base and any service piping (reuse aggregate material as practical).

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- Excavate for and place, structures and piping, including bedding (native or granular backfill).
- Install private drainage connections (PDC) at each property.
- Construct outlet structure at watercourse, including energy dissipation and rip rap erosion protection;
- Restore road surface to previous condition;
- Grade and restore disturbed areas.
- Complete CCTV inspection and deflection testing of applicable storm sewers.
- Reconnect existing drain connections, complete all required inspections and testing.
- Complete all required documentation and reporting on the works.

5.5 Construction-Related Impacts

In reviewing the various assessment criteria identified in Section 3.4 of this report and additional comments provided during the public consultation program, a number of specific environmental elements were identified which could be adversely affected by the implementation of the preferred Master Plan alternatives. Potential impacts can be classified into two general categories; (1) construction related impacts, which are generally short term in nature and related to physical alterations, and (2) long term impacts, which are generally related to implementation of the preferred option and typically affect cultural and social aspects of the environment.

The table below outlines the potential impacts of specific components of the construction plans on the identified environmental elements. Specific mitigation measures for the identified impacts are discussed in the following sections. Table 5.1 identifies impacts directly related to storm sewer construction which are generally short-term in nature and of limited duration. Impacts of a greater magnitude and duration (traffic volume, cultural, social impacts) are also reviewed in the following section.

5.6 Impact Assessment and Mitigation

5.6.1 Environmental Impacts

Based upon the findings of the general impact assessment (Tables 3.8 – 3.13), the environmental effects analysis (Tables 3.14 – 3.19), and construction related impacts (Table 5.1) the projects have the potential to impact upon a number of environmental components. They are as follows:

- Natural Environment
- Social Environment
- Cultural Environment
- Economic Environment

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The potential impacts to each identified feature are described in detail within this section of the report. Measures designed to minimize the impacts are also presented. The determination of appropriate mitigation measures included an assessment of previous studies and investigations, site specific requirements and an evaluation of a broad range of alternatives. This assessment was based on consideration of three broad approaches to impact mitigation; avoidance, minimization of adverse effects and compensation.

Table 5.1 - Construction Related Environmental Effects

	Environmental Components / Key Project Works and Activities	Geology and Hydrology Resources	Aquatic Resources	Significant Environmental Features	Cultural Heritage Resources	Social Environment	Economic Environment	Technical Environment
1	**Construction Component**							
	Contractor Mobilization to the site	○	○	○	○	●	○	○
	Establish Temporary Storage Areas	○	●	○	○	●	○	○
	Site Clearing	○	●	○	●	○	○	○
	Installation of Sediment Control Devices	○	●	○	○	○	○	○
	Traffic Control Plan Implementation	○	○	○	○	●	○	○
	Tree Vegetation Removal							
	Excavation	●	●	○	●	●	○	●
	Excavation of trench	○	●	○	●	○	○	○
	Dewatering	●	●	○	○	●	○	●
	Installation of drainage piping & structures	●	●	○	●	●	○	●
	Backfilling of trenches and installation of private drainage connections (PDC)	○	○	○	●	●	○	●
	Upgrade existing outlet or install new							
	Restore road surface	○	●	○	○	○	○	●
	Re-grading of boulevard areas	○	○	○	●	●	○	●
	Install oil and grit separators							
	Site Restoration (seeding/topsoil)	○	○	○	○	○	○	○

● Potential for adverse effect ○ No adverse effect expected

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5.6.2 Natural Environment

(a) Aquatic Habitat

Recommendations associated with several of the problem areas will result in increased stormwater drainage being discharged to Hickory Creek, which is located at the southwest area of Forest. None of the recommended solutions will result in a new outlet to Hickory Creek however a new outlet may need to be installed within the open portion of the Alexander Municipal Drain. If required the proposed outlet will be located near the intersection of MacKenzie and MacDonald Streets. No long-term impacts to aquatic habitat are anticipated in conjunction with the outlet construction. The work area will be isolated from the channel during construction and will be undertaken during approved in-water timing windows to minimize impacts to aquatic life.

(b) Terrestrial Habitat

A majority of the project work areas are located within existing developed road allowances with manicured lawns and shrubs located along the perimeter of the affected road allowances. In several locations where new drain connections are being extended, limited tree clearing will be required. In these areas, tree/shrub removals will be minimized as much as feasible and will be timed to avoid impacts to breeding birds. Disturbed portions of the road allowance will be restored following the completion of the construction with grassed surfaces.

Storm drainage improvements in the vicinity of MacDonald and MacKenzie Streets will require some tree/shrub removal within the open portion of the Alexander Municipal Drain to increase capacity, address existing erosion issues, and accommodate new drainage outlets. To minimize impacts to wildlife, tree removal will be undertaken outside of the breeding bird season (prior to April 1 and after August 30) of any given year. Following the completion of construction, disturbed areas will be restored.

5.6.3 Cultural Environment

A Stage 1-2 Archaeological Assessment will need to be completed prior to the start of construction for project areas that have not been previously disturbed.

5.6.4 Social Environment - Community Level Impacts

a) Disruption During Construction

Storm sewer construction will primarily be restricted to the limits of existing road allowances. Construction activities associated with the project may therefore inconvenience local residents by restricting traffic movement and disturbing private property adjacent to boulevard areas. Traffic-related impacts resulting from construction are expected to be similar to those experienced during normal road construction activities. The mitigation measures discussed in Table 5.2 of this report will therefore be implemented to minimize restrictions to vehicular movement, as well as other construction-related impacts (e.g. excessive dust and noise). Generally, at least

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one lane of travel will remain open at all times during construction. Although there may be temporary periods when access is unavailable for portions of the work area.

b) Impacts to Private Property

Some residual impacts to private property may result from construction-related activities such as vegetation removal and disturbance to driveways and lawns. Disturbed areas will be restored following construction with material of a similar nature to pre-construction conditions. Prior to the start of construction, adjacent property owners will be notified of the impending work and any anticipated disruption of impacts that may affect their property during the construction phase of the project.

c) Easement Requirements

Several of the preferred alternatives will require construction across privately owned properties in order to facilitate the required drainage improvements. In some locations an existing easement may exist. Other locations may require that an easement agreement be developed in order to compensate the property owner for construction-related impacts associated with the project. For all locations, affected property owners would be contacted by the Municipality in advance of the construction.

5.6.5 Economic Environment

Implementation of all recommendations associated with the Forest Stormwater Master Plan would represent a significant capital cost to the Municipality of Lambton Shores. To address this concern the Municipality plans to phase the implementation of the projects over a number of years so that capital costs can be incorporated into the annual public works budget. In addition, grant funding opportunities will be explored to further assist with economic impacts.

5.7 Construction Mitigation

Construction-related activities associated with project implementation have the potential to impact upon existing environmental features, the general public and construction workers. The Contractor will therefore be responsible for carrying out these activities in accordance with industry safety standards and all applicable legislation. Mitigation measures will also be incorporated into the construction specifications to ensure that operations are conducted in a manner that limits detrimental effects to the environment.

Table 5.2 outlines a series of mitigation measures that are typically incorporated into construction specifications. For this project, contract specifications may need to be modified depending upon the nature of the construction activity and any additional requirements of the regulatory agencies.

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Table 5.2 - Typical Mitigation for Construction-Related Activities

Construction Activity	Typical Mitigation Measure
Refuelling and Maintenance	- Identify locations for designated refuelling and maintenance areas. - Restrict refuelling or maintaining equipment near watercourses. Non-spill equipment is required within 30 m of any watercourse. Fuelled equipment shall be stored overnight not less than 30 m from the edge of water. - Avoid cleaning equipment in watercourses and in locations where debris can gain access to sewers or watercourses. - Prepare to intercept, clean up, and dispose of any spillage that may occur (whether on land or water).
Traffic Control	- The Contractor shall prepare and submit a traffic plan to the Project Engineer for review and acceptance. - Traffic flow should be maintained at all times during construction for private access. The Contractor will provide adequate signage and barricades.
Disposal	- Dispose of all construction debris in approved locations. - Do not empty fuel or lubricants into sewers or watercourses.
Pesticides	- Co-ordinate the use of pesticides and herbicides with affected landowners and the local pesticide control officer.
Sensitive Areas	- Avoid encroachment on unique natural areas; do not disturb habitats of rare or endangered species.
Silt Control	- Silt fences shall be installed and maintained down slope from any stockpile locations or disturbed areas.
Dust Control	- Cover or wet down dry materials and rubbish to prevent blowing dust and debris. - Avoid the use of chemical dust control products adjacent to wetlands and watercourses.
Site Clearing	- Protective measures shall be taken to safeguard trees from construction operations. - Equipment or vehicles shall not be parked, repaired or refuelled near the dripline of any tree not designated for removal. Construction and earth materials shall also not be stockpiled within the defined dripline areas. - Restrict tree removal to areas designated by the Contract Administrator. - Minimize stripping of topsoil and vegetation.
Sedimentation/ Erosion Control	- Erect sediment fencing to control excess sediment loss during construction period. - Minimize removal of vegetation from approaches to watercourses. - Protect watercourses, wetlands, catch basins and pipe ends from sediment intrusion.

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Construction Activity	Typical Mitigation Measure
	- Complete restoration works following construction. - Install straw bale check dams in ditch lines following grading of ditches.
Noise Control	- Site procedures should be established to minimize noise levels in accordance with local by-laws. - Provide and use devices that will minimize noise levels in the construction area. - Nighttime or Sunday work shall not be permitted, except in emergency situations.

(a) Operations Phase

Upon completion of the planned works the Municipality would maintain the drainage infrastructure in accordance with normal municipal practices. In this regard, the drainage infrastructure would be subject to routine maintenance activities. Standard response procedures would also be employed to resolve problems with the constructed works, as well as emergencies.

6.0 CONCLUSIONS AND PROJECT IMPLEMENTATION

6.1 Selection of a Preferred Alternative

Given the foregoing, the following alternatives have been selected by the Municipality of Lambton Shores in conjunction with the proposed Forest Stormwater Master Plan.

Problem Area 2:

Alternative 1 **–** Install new storm sewer on Crozier ROW to connect to an existing drain located along the west settlement boundary.

Problem Area 3:

Alternative 1 – Install twin inlet catch basins on Wellington Street & upgrade storm water infrastructure on Ontario and Queen Street.

Problem Area 4:

Alternative 1– Upsize existing storm sewer on south side of Townsend Line and superelevate Townsend Line at entrance to Juniper Place.

Problem Area 5:

Alternative 1 – Extend the Willemse Drain to connect to existing catch basins at Albert and Maple Streets.

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Problem Area 6A:

Alternative 2 – Upgrade closed portion of DeJersey Drain and improve overland flow path.

Problem Area 6B:

Alternative 1 – Add additional stormwater storage within the southeast area of Problem Area 6.

These recommendations were presented to, and supported by, Lambton Shores Council and staff.

6.2 Approvals

Implementation of Master Plan projects will be subject to the receipt of all necessary approvals. Following a review of existing legislation, it was determined that several formal approvals will be required to permit construction of the proposed works.

6.2.1 Conservation Authorities Act

Implementation of some components of the preferred alternatives may involve construction on lands regulated by the SCRCA. In accordance with the Conservation Authorities Act, applications will be submitted to the SCRCA for approval prior to construction. The application will define measures to protect sensitive lands during construction in order to minimize the negative impacts of the project.

6.2.2 Ontario Water Resources Act

Construction of stormwater management facilities, which are a component of the Master Plan implementation associated with stormwater drainage upgrades, will be subject to the Ontario Water Resources Act. Consequently, the project cannot proceed until the Municipality's CLI has been updated.

6.2.3 Drainage Act

As noted previously in this report, existing municipal drains comprise much of the stormwater drainage infrastructure that serves the community. Implementation of some projects may therefore occur through the Drainage Act. For these projects, the Lambton Shores Drainage Superintendent would initiate the works and follow procedures as outlined in the Drainage Act.

6.3 Project Implementation

Projects identified for implementation through the Master Plan have been listed below. Table 6.1 outlines the associated Class EA Schedule associated with each project.

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Table 6.1 - Preferred Master Plan Alternatives

Master Plan Project Component	Class EA Schedule
Problem Area 2	
New storm sewer on Crozier ROW (easement required)	Schedule B
Problem Area 3	
Twin inlet catch basins and connection to existing drain	Exempt
Storm sewer upgrades on Ontario and Queen	Exempt
Problem Area 4	
Upsize existing storm sewer on Townsend Line	Exempt
Problem Area 5	
Extend Willemse Drain (easement required)	Schedule B/ Drainage Act
Problem Area 6A	
Upgrade DeJersey Drain and improve overland flow path (easement may be required)	Schedule B
Problem Area 6B	
Create additional stormwater storage (easement required)	Schedule B (Additional Class EA Required)

6.3.1 Anticipated Costs

Table 6.2 illustrates anticipated costs for each component of the proposed plan.

Table 6.2 - Anticipated Project Costs: Preferred Master Plan Alternatives

Master Plan Project Component	Anticipated Costs*
Problem Area 2	
New storm sewer on Crozier ROW (easement required)	$ 71,000
Problem Area 3	
Twin inlet catch basins and connection to existing drain	$ 91,000
Storm sewer upgrades on Ontario and Queen	$ 925,000
Problem Area 4	
Upsize existing storm sewer on Townsend Line (Possible cost sharing of road costs with Lambton County)	$ 895,000
Problem Area 5	
Extend Willemse Drain (easement required)	$ 200,000
Problem Area 6A	
Upgrade DeJersey Drain and improve overland flow path (easement may be required)	$1,500,000
Problem Area 6B	
Create additional stormwater storage (easement required)	**

* Estimated costs do not include HST

** Sufficient detail is unavailable to provide an estimated cost

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The above costs were developed based upon recent tender prices for similar types of construction and include a contingency allowance and an engineering allowance (15%). In areas that would include complete road reconstruction, the cost of the roadworks and the stormwater infrastructure has been included. The work to upgrade the sanitary sewer and/watermain along these corridors will be an additional cost.

6.4 Implementation Timing

Projects identified for implementation through the Master Plan process have been categorized into a general implementation timeline, based primarily upon the number of residents impacted as well as the severity of impacts reported for each problem area. Table 6.3 illustrates the anticipated timeline for implementation of each of the individual projects included as a component of the Master Plan. The timelines proposed are based on current municipal funding priorities. Availability of municipal funding may result in alterations to the proposed schedule.

Table 6.3 – Proposed Phasing Plan

Master Plan Project Component	Implementation Timeline
Phase 1	1-5 years
Problem Area 6A – DeJersey Drain Upgrades	
Phase 2	1-5 years
Problem Area 3 - Twin inlet catch basins to existing drain	
Problem Area 2 - New storm sewer on Crozier ROW (easement required)	
Phase 3	1-5 years
Problem Area 4 – Upgrade storm sewers on Townsend Line	
Phase 4	1-5 years
Problem Area 5 - Extend Willemse Drain (easement required)	
Phase 5	5+ years
Problem Area 3 – Upgrade storm sewers on Ontario and Queen Streets	
Problem Area 6B – Additional Stormwater Storage (easement required)	

6.5 Environmental Commitments

A series of remedial measures have been identified which should be implemented in order to minimize the environmental impacts associated with construction of the proposed works. The following represent the key measures of the mitigation plan:

- Plans for erosion and sedimentation control will be formulated and implemented in accordance with the requirements of applicable regulatory agencies;
- Construction activities will be conducted in accordance with contract documentation and the impact mitigation requirements of various regulatory agencies. The work will be monitored through on-site supervision;

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- That permit applications will be submitted to the St. Clair Region Conservation Authority for projects within regulated areas prior to construction;
- That tree and shrub removal will be minimized as much as practical and be timed to avoid impacts to breeding birds and other wildlife by occurring prior to April 1 and after August 30th, of any given year;
- Any areas which are disturbed as a result of construction will be restored following completion of the project;
- That Stage 1- 2 Archaeological Assessments be completed for undisturbed areas prior to construction.
- That easements be obtained for access across privately owned properties in advance of construction.

6.6 Class EA Requirements

6.6.1 Master Plan Approval

The Forest Stormwater Master Plan was developed following an approved Master Planning process, as set out by the Class EA document. The Master Planning process incorporated the completion of Phases 1 and 2 of the Class EA process. The Master Plan will be approved for implementation subject to successful completion of the Class EA Master Plan Process.

6.6.2 Additional Class EA Investigations

As an outcome of this assessment, a series of projects have been identified to implement the Master Plan. These projects are classified either as 'Exempt' activities under the terms of the Class EA document or Schedule 'B' activities. The scope of review completed in conjunction with the Master Plan was sufficient to address a majority of the Schedule B requirements as outlined within the Municipal Class EA document. Therefore no additional Class EA investigations are required for these projects. One project requires additional investigation, which is the recommended alternative for Problem Area 6B. Addition Environmental Assessment is required for this option as a preferred location has not yet been identified.

Table 6.1 summarizes the proposed activities and the Class EA Schedule associated with implementation of specific components of the Master Plan.

6.6.3 Requirements for Master Plan Completion

The following activities are required in order to complete the formal Class EA Master Plan process:

- Issue a Notice of Study Completion for the Master Plan.
- Make Master Plan Report available for public review in conjunction with publication of the Notice of Study Completion.
- Obtain feedback from public, stakeholders and agencies.

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- Make the Master Plan report available for public/agency review.
- Address outstanding issues resulting from the Notice of Completion.
- Advise the Municipality and the Ministry of the Environment, Conservation and Parks (MECP) when the Master Plan process is complete.

6.7 Final Public Consultation

A Notice of Master Plan Completion was recently circulated to local residents, Indigenous Communities and government review agencies. The notice identified the preferred Master Plan alternatives and indicated the approval process needed to move forward with implementation. The following summarizes the distribution of the notice.

Contents:	Identification of preferred solutions, key project components
Issued:	October 8, 2026
Placed In:	Directly mailed to all property owners in the defined service area
Distributed To:	8 review agencies and 8 Indigenous Communities
Concludes:	November 6, 2026

6.8 Master Plan Recommendations

The following represent the key study recommendations developed following the evaluation of alternatives phase of the Master Planning process:

1. That the preferred alternatives identified in Section 3.6 of this report, be adopted as the preferred long-term strategy to address deficient stormwater drainage infrastructure in the identified problem areas.
2. The Master Plan process was completed with sufficient detail to review ‘Exempt’ and most Schedule ‘B’ activities under the terms of the Class EA document (refer to Table 6.1). Therefore these projects have been approved through the Master Plan process.
4. That prior to implementation of Alternative 1 (create additional stormwater storage) for Problem Area 6B, either an additional Class EA investigation be completed or approvals be obtained through the Drainage Act.
5. Implementation of the Master Plan should be conducted with reference to the project details included in Section 6.0 of this report.
6. Impact mitigation measures discussed in Section 5.0 of this report should be incorporated into the detailed construction plans for each proposed activity, as appropriate.
7. The Master Plan should be reviewed on a regular basis to evaluate the accuracy of key assumptions (e.g., condition of existing infrastructure/availability of funding) and to confirm the suitability of the projects. The Master Plan should be modified, as required, to address changes to the environmental setting and local drainage conditions.

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7.0 SUMMARY

This report documents the Master Plan process which was conducted within the community of Forest to resolve deficiencies identified with existing stormwater drainage infrastructure serving the community. The Master Plan process included a background review of the study area in order to characterize and identify potential impacts associated with the natural, cultural, social, economic and technical environments. In order to involve the general public and affected property owners in the process, a Drainage Questionnaire was developed at the start of the Master Plan process which was very helpful in identifying drainage problems. An Open House was also held to seek input on the proposed recommendations. Agencies and indigenous communities were also engaged through a direct mail-out and project updates.

The evaluation stage of the Master Plan process resulted in the identification of 6 initial problem areas related to stormwater drainage infrastructure. Upon further review, 5 of the defined problem areas were confirmed to be associated with deficiencies related to municipal stormwater infrastructure. Each of these defined areas are located within separate drainage sub-basins and will require implementation of different project components to address the identified deficiencies.

The outcome of the Master Plan process, which identified recommended alternatives for each problem area, was to upgrade drainage infrastructure as shown on Table 7.1

Table 7.1 – Master Plan Recommendations

Master Plan Project Component	Class EA Schedule
Problem Area 2	
New storm sewer on Crozier ROW (easement required)	Schedule B
Problem Area 3	
Twin inlet catch basins and connection to existing drain	Exempt
Storm sewer upgrades on Ontario and Queen	Exempt
Problem Area 4	
Upsize existing storm sewer on Townsend Line	Exempt
Problem Area 5	
Extend Willemse Drain (easement required)	Schedule B/ Drainage Act
Problem Area 6A	
Upgrade DeJersey Drain and improve overland flow path (easement may be required)	Schedule B
Problem Area 6B	
Create additional stormwater storage (easement required)	Schedule B (Additional Class EA Required)

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The Forest Stormwater Master Plan, developed through the Class EA Master Planning process, will require the construction of major infrastructure works (e.g., new storm drainage infrastructure and modifications to existing road and drainage facilities), and are anticipated to be implemented over a five-to-ten-year time frame. However, the ultimate timing of implementation will be dependent on Municipal priorities and financing limitations.

All of which is respectfully submitted.

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

Per _____
Simon Van Reenen, P. Eng.
Project Engineer

:hv

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APPENDIX A
CULTURAL HERITAGE

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Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Archaeological Potential

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area may contain archaeological resources i.e., have archaeological potential
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Archaeological assessment

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a licensed consultant archaeologist (see page 4 for definitions) to undertake an archaeological assessment.

The assessment will help you:

- identify, evaluate and protect archaeological resources on your property or project area
- reduce potential delays and risks to your project

Note: By law, archaeological assessments **must** be done by a licensed consultant archaeologist. Only a licensed archaeologist can assess – or alter – an archaeological site.

What to do if you:

- **find an archaeological resource**

  If you find something you think may be of archaeological value during project work, you must – by law – stop all activities immediately and contact a licensed consultant archaeologist

  The archaeologist will carry out the fieldwork in compliance with the *Ontario Heritage Act* [s.48(1)].

- **unearth a burial site**

  If you find a burial site containing human remains, you must immediately notify the appropriate authorities (i.e., police, coroner's office, and/or Registrar of Cemeteries) and comply with the *Funeral, Burial and Cremation Services Act*.

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages when completing this form.

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Project or Property Name

Municipal Class Environmental Assessment Forest - Stormwater Master Plan

Project or Property Location (upper and lower or single tier municipality)

Community of Forest

Proponent Name

Municipality of Lambton Shores

Proponent Contact Information

Alex Williams, Infrastructure Manager, awilliams@lambtonshores.ca

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

	Yes	No
2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?	☐	☑

If Yes, do **not** complete the rest of the checklist. You are expected to follow the recommendations in the archaeological assessment report(s).

The proponent, property owner and/or approval authority will:

- summarize the previous assessment
- add this checklist to the project file, with the appropriate documents that demonstrate an archaeological assessment was undertaken e.g., MTCS letter stating acceptance of archaeological assessment report

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., environmental assessment document
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Are there known archaeological sites on or within 300 metres of the property (or the project area)?	☐	☑
4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property (or project area)?	☐	☑
5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or project area)?	☐	☑
6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?	☐	☑
7. Has the property (or project area) been recognized for its cultural heritage value?	☐	☑

If Yes to any of the above questions (3 to 7), do **not** complete the checklist. Instead, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment of your property or project area.

If No, continue to question 8.

	Yes	No
8. Has the entire property (or project area) been subjected to recent, extensive and intensive disturbance?	☐	☑

If Yes to the preceding question, do **not** complete the checklist. Instead, please keep and maintain a summary of documentation that provides evidence of the recent disturbance.

An archaeological assessment is not required.

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	Yes	No
9. Are there present or past water sources within 300 metres of the property (or project area)?	☑	☐

If Yes, an archaeological assessment is required.

If No, continue to question 10.

	Yes	No
10. Is there evidence of two or more of the following on the property (or project area)?	☐	☐

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

If Yes, an archaeological assessment is required.

If No, there is low potential for archaeological resources at the property (or project area).

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g., under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

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Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

In this context, the following definitions apply:

- **consultant archaeologist** means, as defined in Ontario regulation as an archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. In Ontario, these people also are required to hold a valid professional archaeological licence issued by the Ministry of Tourism, Culture and Sport.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may be already in place for identifying archaeological potential, including:

- one prepared and adopted by the municipality e.g., archaeological management plan
- an environmental assessment process e.g., screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s. B.2.]

2. Has an archaeological assessment been prepared for the property (or project area) and been accepted by MTCS?

Respond 'yes' to this question, if all of the following are true:

- an archaeological assessment report has been prepared and is in compliance with MTCS requirements
  - a letter has been sent by MTCS to the licensed archaeologist confirming that MTCS has added the report to the Ontario Public Register of Archaeological Reports (Register)
- the report states that there are no concerns regarding impacts to archaeological sites

Otherwise, if an assessment has been completed and deemed compliant by the MTCS, and the ministry recommends further archaeological assessment work, this work will need to be completed.

For more information about archaeological assessments, contact:

- approval authority
- proponent
- consultant archaeologist
- Ministry of Tourism, Culture and Sport at archaeology@ontario.ca

3. Are there known archaeological sites on or within 300 metres of the property (or project area)?

MTCS maintains a database of archaeological sites reported to the ministry.

For more information, contact MTCS Archaeological Data Coordinator at archaeology@ontario.ca.

4. Is there Aboriginal or local knowledge of archaeological sites on or within 300 metres of the property?

Check with:

- Aboriginal communities in your area
- local municipal staff

They may have information about archaeological sites that are not included in MTCS' database.

Other sources of local knowledge may include:

- property owner
- local heritage organizations and historical societies
- local museums
- municipal heritage committee
- published local histories

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5. Is there Aboriginal knowledge or historically documented evidence of past Aboriginal use on or within 300 metres of the property (or property area)?

Check with:

- Aboriginal communities in your area
- local municipal staff

Other sources of local knowledge may include:

- property owner
- local heritage organizations and historical societies
- local museums
- municipal heritage committee
- published local histories

6. Is there a known burial site or cemetery on the property or adjacent to the property (or project area)?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulation Unit, Ontario Ministry of Consumer Services – for database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, 'adjacent' means 'contiguous', or as otherwise defined in a municipal official plan.

7. Has the property (or project area) been recognized for its cultural heritage value?

There is a strong chance there may be archaeological resources on your property (or immediate area) if it has been listed, designated or otherwise identified as being of cultural heritage value by:

- your municipality
- Ontario government
- Canadian government

This includes a property that is:

- designated under *Ontario Heritage Act* (the OHA), including:
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)
  - an archaeological site (Part VI)
- subject to:
  - an agreement, covenant or easement entered into under the OHA (Parts II or IV)
  - a notice of intention to designate (Part IV)
  - a heritage conservation district study area by-law (Part V) of the OHA
- listed on:
  - a municipal register or inventory of heritage properties
  - Ontario government's list of provincial heritage properties
  - Federal government's list of federal heritage buildings
- part of a:
  - National Historic Site
  - UNESCO World Heritage Site
- designated under:
  - *Heritage Railway Station Protection Act*
  - *Heritage Lighthouse Protection Act*
- subject of a municipal, provincial or federal commemorative or interpretive plaque.

To determine if your property or project area is covered by any of the above, see:

- Part A of the MTCS Criteria for Evaluating Potential for Built Heritage and Cultural Heritage Landscapes

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Part VI – Archaeological Sites

Includes five sites designated by the Minister under Regulation 875 of the Revised Regulation of Ontario, 1990 (Archaeological Sites) and 3 marine archaeological sites prescribed under Ontario Regulation 11/06.

For more information, check Regulation 875 and Ontario Regulation 11/06.

8. Has the entire property (or project area) been subjected to recent extensive and intensive ground disturbance?

Recent: after-1960

Extensive: over all or most of the area

Intensive: thorough or complete disturbance

Examples of ground disturbance include:

- quarrying
- major landscaping – involving grading below topsoil
- building footprints and associated construction area
  - where the building has deep foundations or a basement
- infrastructure development such as:
  - sewer lines
  - gas lines
  - underground hydro lines
  - roads
  - any associated trenches, ditches, interchanges. **Note**: this applies only to the excavated part of the right-of-way; the remainder of the right-of-way or corridor may not have been impacted.

A ground disturbance does **not** include:

- agricultural cultivation
- gardening
- landscaping

Site visits

You can typically get this information from a site visit. In that case, please document your visit in the process (e.g., report) with:

- photographs
- maps
- detailed descriptions

If a disturbance isn't clear from a site visit or other research, you need to hire a licensed consultant archaeologist to undertake an archaeological assessment.

9. Are there present or past water bodies within 300 metres of the property (or project area)?

Water bodies are associated with past human occupations and use of the land. About 80-90% of archaeological sites are found within 300 metres of water bodies.

Present

- Water bodies:
  - primary - lakes, rivers, streams, creeks
  - secondary - springs, marshes, swamps and intermittent streams and creeks
- accessible or inaccessible shoreline, for example:
  - high bluffs
  - swamps
  - marsh fields by the edge of a lake
  - sandbars stretching into marsh

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Water bodies not included:

- man-made water bodies, for example:
  - temporary channels for surface drainage
  - rock chutes and spillways
  - temporarily ponded areas that are normally farmed
  - dugout ponds
- artificial bodies of water intended for storage, treatment or recirculation of:
  - runoff from farm animal yards
  - manure storage facilities
  - sites and outdoor confinement areas

Past

Features indicating past water bodies:

- raised sand or gravel beach ridges – can indicate glacial lake shorelines
- clear dip in the land – can indicate an old river or stream
- shorelines of drained lakes or marshes
- cobble beaches

You can get information about water bodies through:

- a site visit
- aerial photographs
- 1:10,000 scale Ontario Base Maps - or equally detailed and scaled maps.

10. Is there evidence of two or more of the following on the property (or project area)?

- elevated topography
- pockets of well-drained sandy soil
- distinctive land formations
- resource extraction areas
- early historic settlement
- early historic transportation routes

- **Elevated topography**

  Higher ground and elevated positions - surrounded by low or level topography - often indicate past settlement and land use.

  Features such as eskers, drumlins, sizeable knolls, plateaus next to lowlands, or other such features are a strong indication of archaeological potential.

  Find out if your property or project area has elevated topography, through:

  - site inspection
  - aerial photographs
  - topographical maps

- **Pockets of well-drained sandy soil, especially within areas of heavy soil or rocky ground**

  Sandy, well-drained soil - in areas characterized by heavy soil or rocky ground - may indicate archaeological potential

  Find out if your property or project area has sandy soil through:

  - site inspection
  - soil survey reports

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- **Distinctive land formations**

  Distinctive land formations include – but are not limited to:

  - waterfalls
  - rock outcrops
  - rock faces
  - caverns
  - mounds, etc.

  They were often important to past inhabitants as special or sacred places. The following sites may be present – or close to – these formations:

  - burials
  - structures
  - offerings
  - rock paintings or carvings

  Find out if your property or project areas has a distinctive land formation through:

  - a site visit
  - aerial photographs
  - 1:10,000 scale Ontario Base Maps - or equally detailed and scaled maps.

- **Resource extraction areas**

  The following resources were collected in these extraction areas:

  - food or medicinal plants e.g., migratory routes, spawning areas, prairie
  - scarce raw materials e.g., quartz, copper, ochre or outcrops of chert
  - resources associated with early historic industry e.g., fur trade, logging, prospecting, mining

  Aboriginal communities may hold traditional knowledge about their past use or resources in the area.

- **Early historic settlement**

  Early Euro-Canadian settlement include – but are not limited to:

  - early military or pioneer settlement e.g., pioneer homesteads, isolated cabins, farmstead complexes
  - early wharf or dock complexes
  - pioneers churches and early cemeteries

  For more information, see below – under the early historic transportation routes.

- **Early historic transportation routes** - such as trails, passes, roads, railways, portage routes, canals.

  For more information, see:

  - historical maps and/or historical atlases
    - for information on early settlement patterns such as trails (including Aboriginal trails), monuments, structures, fences, mills, historic roads, rail corridors, canals, etc.
    - Archives of Ontario holds a large collection of historical maps and historical atlases
    - digital versions of historic atlases are available on the Canadian County Atlas Digital Project
  - commemorative markers or plaques such as local, provincial or federal agencies
  - municipal heritage committee or other local heritage organizations
    - for information on early historic settlements or landscape features (e.g., fences, mill races, etc.)
    - for information on commemorative markers or plaques

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Ontario

Ministry of Tourism, Culture and Sport

Programs & Services Branch
401 Bay Street, Suite 1700
Toronto ON M7A 0A7

Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes

A Checklist for the Non-Specialist

The **purpose of the checklist** is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including – but not limited to:
  - the main project area
  - temporary storage
  - staging and working areas
  - temporary roads and detours

Processes covered under this checklist, such as:

- *Planning Act*
- *Environmental Assessment Act*
- *Aggregates Resources Act*
- *Ontario Heritage Act* – Standards and Guidelines for Conservation of Provincial Heritage Properties

Cultural Heritage Evaluation Report (CHER)

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 – separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

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Project or Property Name

Municipal Class Environmental Assessment Forest - Stormwater Master Plan

Project or Property Location (upper and lower or single tier municipality)

Community of Forest

Proponent Name

Municipality of Lambton Shores

Proponent Contact Information

Alex Williams, Infrastructure Manager, awilliams@lambtonshores.ca

Screening Questions

	Yes	No
1. Is there a pre-approved screening checklist, methodology or process in place?	☐	☑

If Yes, please follow the pre-approved screening checklist, methodology or process.

If No, continue to Question 2.

Part A: Screening for known (or recognized) Cultural Heritage Value

	Yes	No
2. Has the property (or project area) been evaluated before and found **not** to be of cultural heritage value?	☐	☑

If Yes, do **not** complete the rest of the checklist.

The proponent, property owner and/or approval authority will:

- summarize the previous evaluation and
- add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken

The summary and appropriate documentation may be:

- submitted as part of a report requirement
- maintained by the property owner, proponent or approval authority

If No, continue to Question 3.

	Yes	No
3. Is the property (or project area):		
a. identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value?	☐	☑
b. a National Historic Site (or part of)?	☐	☑
c. designated under the *Heritage Railway Stations Protection Act*?	☐	☑
d. designated under the *Heritage Lighthouse Protection Act*?	☐	☑
e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?	☐	☑
f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	☐	☑

If Yes to any of the above questions, you need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

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Part B: Screening for Potential Cultural Heritage Value

	Yes	No
4. Does the property (or project area) contain a parcel of land that:		
a. is the subject of a municipal, provincial or federal commemorative or interpretive plaque?	☐	☑
b. has or is adjacent to a known burial site and/or cemetery?	☐	☑
c. is in a Canadian Heritage River watershed?	☐	☑
d. contains buildings or structures that are 40 or more years old?	☐	☑

Part C: Other Considerations

	Yes	No
5. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):		
a. is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?	☐	☑
b. has a special association with a community, person or historical event?	☐	☑
c. contains or is part of a cultural heritage landscape?	☐	☑

If Yes to one or more of the above questions (Part B and C), there is potential for cultural heritage resources on the property or within the project area.

You need to hire a qualified person(s) to undertake:

- a Cultural Heritage Evaluation Report (CHER)

If the property is determined to be of cultural heritage value and alterations or development is proposed, you need to hire a qualified person(s) to undertake:

- a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No to all of the above questions, there is low potential for built heritage or cultural heritage landscape on the property.

The proponent, property owner and/or approval authority will:

- summarize the conclusion
- add this checklist with the appropriate documentation to the project file

The summary and appropriate documentation may be:

- submitted as part of a report requirement e.g. under the *Environmental Assessment Act, Planning Act* processes
- maintained by the property owner, proponent or approval authority

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Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's Ontario Heritage Toolkit or Standards and Guidelines for Conservation of Provincial Heritage Properties.

In this context, the following definitions apply:

- **qualified person(s)** means individuals – professional engineers, architects, archaeologists, etc. – having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

1. Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

Part A: Screening for known (or recognized) Cultural Heritage Value

2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) - or equivalent - has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

Note: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

i. designated under the *Ontario Heritage Act*

- individual designation (Part IV)
- part of a heritage conservation district (Part V)

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Individual Designation – Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the *Ontario Heritage Act*]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

Heritage Conservation District – Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

---

ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the *Ontario Heritage Act*

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

For more information, contact:

- Ontario Heritage Trust - for an agreement, covenant or easement [clause 10 (1) (c) of the *Ontario Heritage Act*]
- municipal clerk – for a property that is the subject of an easement or a covenant [s.37 of the *Ontario Heritage Act*]
- local land registry office (for a title search)

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iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

Registers include:

- all properties that are designated under the *Ontario Heritage Act* (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

For more information, contact:

- municipal clerk
- municipal heritage planning staff
- municipal heritage committee

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iv. subject to a notice of:

- intention to designate (under Part IV of the *Ontario Heritage Act*)
- a Heritage Conservation District study area bylaw (under Part V of the *Ontario Heritage Act*)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the *Ontario Heritage Act*
- section 34.6 of the *Ontario Heritage Act.* **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

For more information, contact:

- municipal clerk – for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

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v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at registrar@ontario.ca.

3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

3c. Is the property (or project area) designated under the *Heritage Railway Stations Protection Act*?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the Directory of Designated Heritage Railway Stations.

3d. Is the property (or project area) designated under the *Heritage Lighthouse Protection Act*?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the Heritage Lighthouses of Canada website.

3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

Part B: Screening for potential Cultural Heritage Value

4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

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For more information, contact:

- municipal heritage committees or local heritage organizations – for information on the location of plaques in their community
- Ontario Historical Society's Heritage directory – for a list of historical societies and heritage organizations
- Ontario Heritage Trust – for a list of plaques commemorating Ontario's history
- Historic Sites and Monuments Board of Canada – for a list of plaques commemorating Canada's history

4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services – for a database of registered cemeteries
- Ontario Genealogical Society (OGS) – to locate records of Ontario cemeteries, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project – to locate early cemeteries

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the Canadian Heritage River System.

If you have questions regarding the boundaries of a watershed, please contact:

- your conservation authority
- municipal staff

4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- architectural style
- building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

Note: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- residential structure
- farm building or outbuilding
- industrial, commercial, or institutional building
- remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide Heritage Property Evaluation.

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Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- complexes of buildings
- monuments
- ruins

5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- municipal heritage committees or local heritage organizations
- Ontario Historical Society's "Heritage Directory" - for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through Ontario Trails.

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APPENDIX B
PLANNING DOCUMENTS

DRAFT

OVERALL GEOLOGY OF FOREST

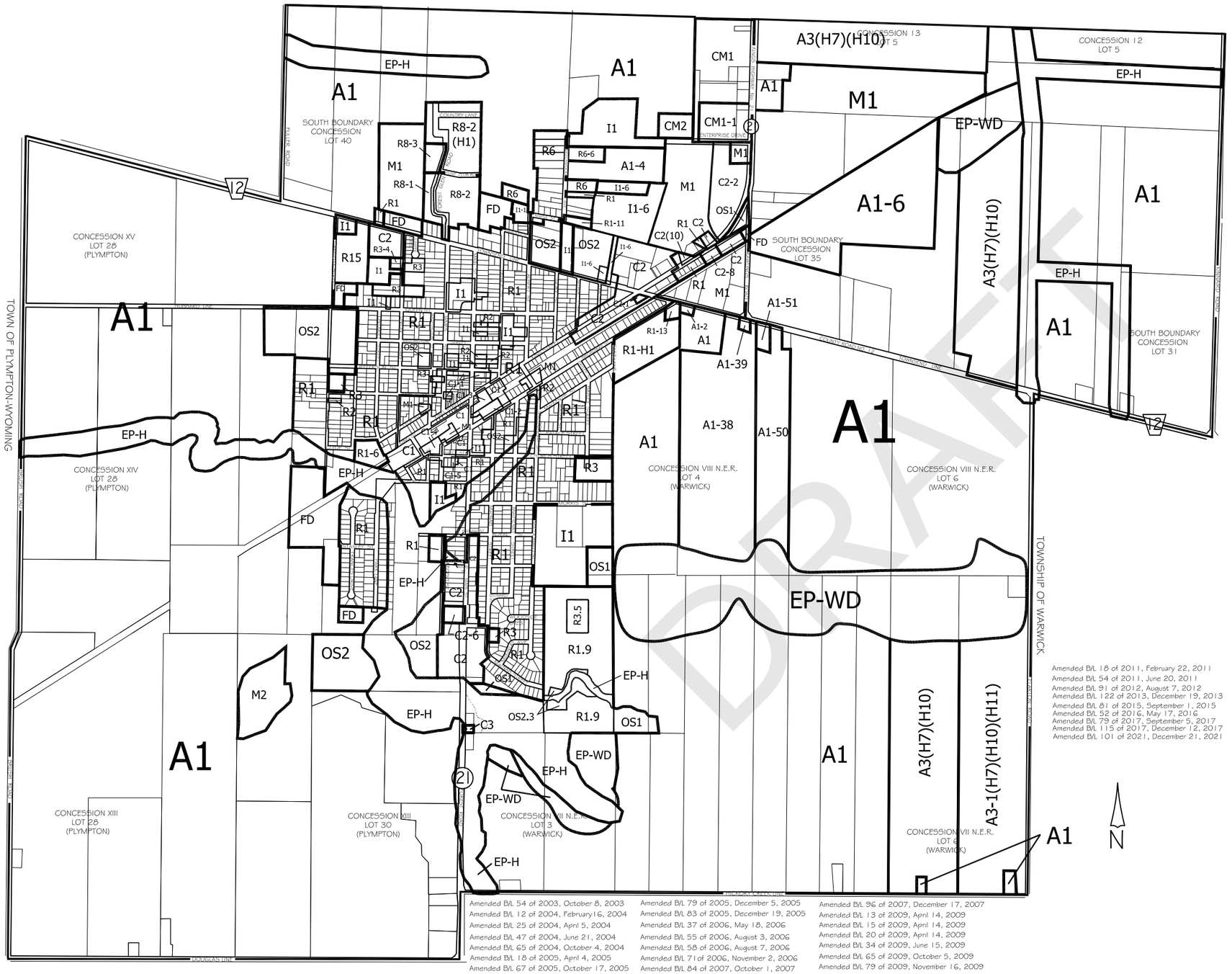
0 250 500
METRES

N

TOWNSEND LINE
HUBBARD LINE
FULLER RD
BEECHWOOD AVE
ENTERPRISE DR
RAWLINGS RD
ARTELECOM PKY
MAPLE ST
BRADLEY ST
JUNIPER PL
UNION ST
PRINCE ST
ALBERT ST
GORE ST
ARTHUR ST
YORK ST
KING ST E
QUEEN ST W
QUEEN ST E
JAMES ST N
MAIN ST N
WELLINGTON ST W
WELLINGTON ST E
JEFFERSON ST W
ARGYLE ST
O'ZIER ROW
EUREKA ST
ANN ST
ONTARIO ST
WASHINGTON ST N
KING ST W
BROADWAY ST
BAYLEY ST
MACKENZIE ST
MACHENRY ST
WATER ST
PALACE ST
CHURCH ST
VICTORIA ST
JAMES ST S
WATT ST
CLYDE ST
GEORGE ST
MORRIS ST
ROYAL ST
STANLEY ST
FRANCES DR
PARK LANE
MAIN ST S
MACHENRY ST
MACDONALD ST
PHIBBS ST
MCKINLAY AVE
HENNESSY ST
FIELD ST
FOREST RD
MACNAB ST
BRUSH RD
ELARTON RD

Urban Boundary
Parcels
Forest Soil Type*
Bottom Land
Brisbane Loam
Brookston Clay
Fox Sandy Loam
Perth Clay
Soil types within urban boundary are assumed

BMROSS
engineering better communities



Amended B/L 18 of 2011, February 22, 2011
Amended B/L 54 of 2011, June 20, 2011
Amended B/L 91 of 2012, August 7, 2012
Amended B/L 122 of 2013, December 19, 2013
Amended B/L 81 of 2015, September 1, 2015
Amended B/L 52 of 2016, May 17, 2016
Amended B/L 79 of 2017, September 5, 2017
Amended B/L 115 of 2017, December 12, 2017
Amended B/L 101 of 2021, December 21, 2021

Amended B/L 54 of 2003, October 8, 2003
Amended B/L 12 of 2004, February16, 2004
Amended B/L 25 of 2004, April 5, 2004
Amended B/L 47 of 2004, June 21, 2004
Amended B/L 65 of 2004, October 4, 2004
Amended B/L 18 of 2005, April 4, 2005
Amended B/L 67 of 2005, October 17, 2005
Amended B/L 79 of 2005, December 5, 2005
Amended B/L 83 of 2005, December 19, 2005
Amended B/L 37 of 2006, May 18, 2006
Amended B/L 55 of 2006, August 3, 2006
Amended B/L 58 of 2006, August 7, 2006
Amended B/L 71 of 2006, November 2, 2006
Amended B/L 84 of 2007, October 1, 2007
Amended B/L 96 of 2007, December 17, 2007
Amended B/L 13 of 2009, April 14, 2009
Amended B/L 15 of 2009, April 14, 2009
Amended B/L 20 of 2009, April 14, 2009
Amended B/L 34 of 2009, June 15, 2009
Amended B/L 65 of 2009, October 5, 2009
Amended B/L 79 of 2009, November 16, 2009

MUNICIPALITY OF LAMBTON SHORES
SCHEDULE "A-8" (FOREST)
TO BY-LAW NO. 1 OF 2003

PASSED THIS 3 DAY OF February, 2003

J.C. IVEY, MAYOR

CAROL McKENZIE, CLERK

LEGEND

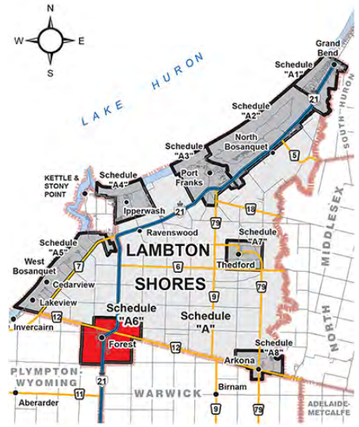
SYMBOL	ZONE
A1	AGRICULTURAL - 1
A3	AGRICULTURAL COMMERCIAL WIND ENERGY CONVERSION SYSTEM - 3
C1	COMMERCIAL - 1
C2	COMMERCIAL - 2
C3	COMMERCIAL - 3
CM1	MIXED COMMERCIAL/INDUSTRIAL - 1
CM2	MIXED COMMERCIAL/INDUSTRIAL - 2
EP-H	ENVIRONMENTAL PROTECTION - HAZARD
EP-WD	ENVIRONMENTAL PROTECTION - WOODLOT
FD	FUTURE DEVELOPMENT
I1	INSTITUTIONAL - 1
M1	INDUSTRIAL-1
M2	INDUSTRIAL-2
OS1	OPEN SPACE - 1
OS2	OPEN SPACE - 2
R1	RESIDENTIAL - 1
R2	RESIDENTIAL - 2
R3	RESIDENTIAL - 3
R6	RESIDENTIAL - 6
R8	RESIDENTIAL - 8
R15	RESIDENTIAL - 15
-H1,-H2..	HOLDING PROVISIONS
- 1,-2,..	EXCEPTIONS

SCALE: 100 0 100 200 400 METRES

PREPARED BY:
COUNTY OF LAMBTON
PLANNING AND DEVELOPMENT
DEPARTMENT
FEBRUARY, 2003

DRAFT

The Municipality of Lambton Shores
OFFICIAL PLAN
Schedule "A6"
(Forest)



DRAFT

See Schedule "A"

See Schedule "A"

See Schedule "A"

Plympton-Wyoming

Warwick

Townsend Line

Hubbard Line

Douglas Line

Hickory Creek Line

Jura Line

Fuller Road

Brush Road

Rawlings Road

Kinnaird Road

Elarton Road

Forest Road

Enterprise Dr.

Amtelecom Pkwy.

Beechwood Ave.

Bradley St.

Queen St.

Union St.

Juniper Pl.

James St. N.

Main St. N.

Prince St.

Albert St.

Gore St.

Arthur St.

York St.

Wellington St. W.

Wellington St. E.

Jefferson St. W.

Jefferson St. E.

King St. E.

Broadway St.

Mackenzie St.

East Ln.

Ann St.

Argyle St.

Ontario St.

Eureka St.

Clyde St.

King St. W.

Victoria St.

Watt St.

George St.

Church St.

Bayley St.

Morris St.

Frances Dr.

Park Ln.

MacNab St.

MacHenry St.

MacDonald St.

Phibbs St.

Woodside Cres.

McKinley Ave.

Hennessy St

Fraser Cres.

Main St.

Forest St.

12

21

DRAFT

LEGEND

- Assessment Parcels
- Rivers - Streams - Drainage
- Roads
- County Road
- Provincial Highway
- Railroad
- Cemetery
- Waterbodies
- Sewage Treatment Works
- Active or Former Waste Disposal Site (Anderson Dataset : Lambton GWS 2004)
- Municipal Boundary
- Schedule Inset Boundary

0 250 500 1,000 Metres

0 500 1,000 2,000 3,000 4,000 Feet

Official Plan - Designations

- Agriculture
- Residential
- Residential Special Policy Area
- Downtown Commercial
- Commercial
- Highway Commercial
- Industrial
- Mixed Commercial/Industrial
- Open Space

Official Plan - Designations

- Wetland (MNR - OWES)
- General Regulation Area (O. Reg 41/24)

Lambton County Official Plan - Designations

- Urban Centre Area Boundary

The settlement area boundary shown is derived from the County of Lambton Official Plan and does not form part of the Lambton Shores Official Plan. It is provided as a visual aid for information purposes only.

Area Estimator

10 Acres

25 Acres

Notes: Area Estimator generalized blocks (shown at left) are scaled to represent typical area measures.

Area Estimator is properly scaled for Main Map ONLY.

Acre area measures can be converted to hectares (ha) by dividing by (2.471).

N W E S

Reference

Disclaimer: These digital mapping products have been produced on the County of Lambton's Geographic Information System. Data provided herein is derived from sources with varying levels of accuracy and currency. This is not a survey product. The County of Lambton disclaims all responsibility for the accuracy or completeness of information contained herein. The County of Lambton assumes no responsibility for errors arising from use of these digital mapping products.

The Official Plan information contained herein is current as of the last recorded amendment noted under "Official Plan Amendments".

- Cadastral database is current to November 2022.

Projection: UTM NAD 83 Zone 17

Consultant : NPG Planning Solutions, August 2024.

COUNTY OF LAMBTON
Planning and Development Services, August 2024.

www.lambtononline.ca

The Municipality of
Lambton Shores
OFFICIAL PLAN
Schedule "A6"
(Forest)

to By-law No. 66 of 2024

Passed this 16 day of August ,2024

Doug Cook, Mayor

Stephanie Troyer-Boyd, Clerk

Official Plan Amendments

OPA # 10, August 16, 2024

APPENDIX C
CONSULTATION

DRAFT

MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

The Municipality of Lambton Shores is initiating a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Town of Forest. The stormwater servicing review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. When completed, the Master Plan will recommend a stormwater servicing strategy that could be implemented in phases as determined by need, to address existing problem areas as well as accommodating future growth and climate change.

THE ENVIRONMENTAL ASSESSMENT PROCESS:

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies First Nation and Métis communities, and affected property owners. This notice is being issued to advise of the start of study investigations.

QUESTIONNAIRE

A drainage questionnaire has been developed to assist with study investigations and to provide additional opportunities for public involvement and input. The questionnaire can be accessed through the municipal website https://www.lambtonshores.ca/en/living-here/storm-water-and-drainage.aspx. Hard copies of the questionnaire are also available upon request.

PUBLIC INVOLVEMENT

The consultation program for the Class EA Master Plan process includes several opportunities for public input and involvement including a public information meeting. For the initial phase of the program, public input into the planning of this study will be accepted until **June 6, 2025.** You may use the contact information below or go to www.Lambtonshores.ca to provide input and ask questions. Any comments collected in conjunction with the Stormwater Master Plan process will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record. Details related to the public meeting will be posted on the municipal website. Additional opportunities for comment will be provided as the process proceeds.

For further information on this project, or to review the Master Plan process, please contact the study engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Phone: (519) 524-2641. **Attn: Kelly Vader, Environmental Planner** (e-mail: kvader@bmross.net).

Alex Williams, Infrastructure Manager
Municipality of Lambton Shores

This Notice issued May 6, 2025

DRAFT

MUNICIPALITY OF LAMBTON SHORES

FOREST STORMWATER MASTER PLAN

Questionnaire

The following survey has been prepared to gather information from residents on existing stormwater and drainage issues affecting the Town of Forest. This questionnaire is being completed in conjunction with a Stormwater Master Plan Study for the Forest settlement area and will include established residential areas as well as future growth areas. In accordance with the Municipal Freedom of Information and Protection of Privacy Act, personal information is collected under the authority of the Municipal Act and will only be used for the purpose of data collection. Please complete by June 30, 2025.

Name:

_____

Mailing Address:

_____

Property Address:

_____

PROPERTY INFORMATION:

1. Is your property:

- ☐ Developed
- ☐ Vacant
- ☐ Other (please specify)

_____

_____

2. How long have you lived at the property:

- ☐ 0-5 years
- ☐ 5-10 years
- ☐ 10-15 years
- ☐ 16+ years

3. What are the current uses of the property (check all that apply)

- ☐ Residential
- ☐ Agricultural
- ☐ Commercial
- ☐ Industrial
- ☐ Other (please specify)

_____

4. What is the approximate size of the property?

_____

DRAFT

DRAINAGE INFORMATION:

1. Have you experienced drainage problems with your property?

- ☐ Never
- ☐ 1-2 times a year
- ☐ More than 2 times a year

2. Would you describe your lot drainage as:

- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ (Other (please specify)

_____

_____

3. If you have experienced drainage issues, please circle all that apply:

- ☐ Water ponding in yard
- ☐ Water in basement
- ☐ Water ponding on road surface
- ☐ Other (please specify)

_____

_____

4. If you have a sump pump, how often does it run:

- ☐ Frequently
- ☐ Intermittently
- ☐ Not often
- ☐ We don't have a sump pump

ADDITIONAL COMMENTS/INPUT:

If there is any additional information that you think would be useful to this study, or any additional comments that you wish to make, please include them here (this may include flooding issues noticed on roadways and neighboring lands):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

DRAFT

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 www.bmross.net

File No. 25033

VIA EMAIL ONLY

May 7, 2025

Review Agency
(see attached list)

RE: Municipality of Lambton Shores
Stormwater Master Plan for the Community of Forest

The Municipality of Lambton Shores has initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established, and future development areas in the Community of Forest. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community, and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. When completed the Master Plan will recommend a stormwater management strategy that could be implemented in phases, as determined by need, to address existing problem areas as well as accommodating future growth.

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA), which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies First Nation and Métis communities, and affected property owners.

Your organization has been identified as possibly having an interest in this project and we are soliciting your input. Please forward your response to our office by **June 6, 2025.** If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 519-525-2170.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:et
Encl.
cc. Alex Williams, Municipality of Lambton Shores

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DRAFT

MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

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THE ENVIRONMENTAL ASSESSMENT PROCESS:

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PUBLIC INVOLVEMENT

The consultation program for the Class EA Master Plan process includes several opportunities for public input and involvement including a public information meeting. For the initial phase of the program, public input into the planning of this study will be accepted until **June 6, 2025.** You may use the contact information below or go to www.Lambtonshores.ca to provide input and ask questions. Any comments collected in conjunction with the Stormwater Master Plan process will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record. Details related to the public meeting will be posted on the municipal website. Additional opportunities for comment will be provided as the process proceeds.

For further information on this project, or to review the Master Plan process, please contact the study engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Phone: (519) 524-2641. **Attn: Kelly Vader, Environmental Planner** (e-mail: kvader@bmross.net).

Alex Williams, Infrastructure Manager
Municipality of Lambton Shores

This Notice issued May 6, 2025

DRAFT

MUNICIPALITY OF LAMBTON SHORES

STORMWATER MASTER PLAN STUDY
(COMMUNITY OF FOREST)
PROJECT: 25033

REVIEW AGENCY CIRCULATION LIST: NOTICE OF COMMENCEMENT

REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment, Conservation & Parks Monika Macki, Environmental Resource Planner/Assessment Coordinator, Southwest Region Email: monika.macki@ontario.ca	Mandatory Contact
Ministry of Natural Resources Email: SR.Planning@ontario.ca	Potential Impact on Natural Features
Ministry of Citizenship and Multiculturalism Email: karla.barboza@ontario.ca and joseph.harvey@ontario.ca	Potential Impact to Cultural Heritage Features
Township of Warwick Kyle Chrisholm, Public Works Manager kchrisholm@warwicktownship.ca	Adjacent Municipality
Town of Plympton-Wyoming Paul daSilva, Director of Public Works PdaSilva@plympton-wyoming.ca	Adjacent Municipality
Municipality of Lambton Shores Alex Williams, Public Works Email: awilliams@lambtonshores.ca	Proponent
County of Lambton Corinne Nauta, Planning & Development corinne.nauta@county-lambton.on.ca	- Upper tier Municipality - General Information - Implications for Long-Term Development
St. Clair Conservation Authority Kelsey Oatman, Planning and Regulations Clerk koatman@scrca.on.ca	Potential Impact on Natural Features

DRAFT

MUNICIPALITY OF LAMBTON SHORES

STORMWATER MASTER PLAN STUDY
(COMMUNITY OF FOREST)
PROJECT: 25033

REVIEW AGENCY CIRCULATION LIST: NOTICE OF COMMENCEMENT

REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment, Conservation & Parks Monika Macki, Environmental Resource Planner/Assessment Coordinator, Southwest Region Email: monika.macki@ontario.ca	Mandatory Contact
Ministry of Natural Resources Email: SR.Planning@ontario.ca	Potential Impact on Natural Features
Ministry of Citizenship and Multiculturalism Email: karla.barboza@ontario.ca and joseph.harvey@ontario.ca	Potential Impact to Cultural Heritage Features
Township of Warwick Kyle Chrisholm, Public Works Manager kchrisholm@warwicktownship.ca	Adjacent Municipality
Town of Plympton-Wyoming Paul daSilva, Director of Public Works PdaSilva@plympton-wyoming.ca	Adjacent Municipality
Municipality of Lambton Shores Alex Williams, Public Works Email: awilliams@lambtonshores.ca	Proponent
County of Lambton Corinne Nauta, Planning & Development corinne.nauta@county-lambton.on.ca	- Upper tier Municipality - General Information - Implications for Long-Term Development
St. Clair Conservation Authority Kelsey Oatman, Planning and Regulations Clerk koatman@scrca.on.ca	Potential Impact on Natural Features

DRAFT

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. 25033

VIA EMAIL ONLY

May 7, 2025

Indigenous Community
(see attached list)

RE: Municipality of Lambton Shores
Stormwater Master Plan for the Community of Forest

The Municipality of Lambton Shores has initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established, and future development areas in the Community of Forest. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure within the study area limits. When completed, the Master Plan will recommend a stormwater management strategy that could be implemented in phases as determined by need, to address existing problem areas as well as accommodating future growth.

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies First Nation and Métis communities, and affected property owners.

Your community has been identified as possibly having an interest in this project. Please forward your comments to our office by **June 6, 2025**. If you have any questions or require further information, please contact the undersigned at 519-525-2170 or by e-mail at kvader@bmross.net.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:et
Encl.
cc. Alex Williams, Municipality of Lambton Shores

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MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

The Municipality of Lambton Shores is initiating a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Town of Forest. The stormwater servicing review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. When completed, the Master Plan will recommend a stormwater servicing strategy that could be implemented in phases as determined by need, to address existing problem areas as well as accommodating future growth and climate change.

THE ENVIRONMENTAL ASSESSMENT PROCESS:

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies First Nation and Métis communities, and affected property owners. This notice is being issued to advise of the start of study investigations.

QUESTIONNAIRE

A drainage questionnaire has been developed to assist with study investigations and to provide additional opportunities for public involvement and input. The questionnaire can be accessed through the municipal website https://www.lambtonshores.ca/en/living-here/storm-water-and-drainage.aspx. Hard copies of the questionnaire are also available upon request.

PUBLIC INVOLVEMENT

The consultation program for the Class EA Master Plan process includes several opportunities for public input and involvement including a public information meeting. For the initial phase of the program, public input into the planning of this study will be accepted until **June 6, 2025.** You may use the contact information below or go to www.Lambtonshores.ca to provide input and ask questions. Any comments collected in conjunction with the Stormwater Master Plan process will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record. Details related to the public meeting will be posted on the municipal website. Additional opportunities for comment will be provided as the process proceeds.

For further information on this project, or to review the Master Plan process, please contact the study engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Phone: (519) 524-2641. **Attn: Kelly Vader, Environmental Planner** (e-mail: kvader@bmross.net).

Alex Williams, Infrastructure Manager
Municipality of Lambton Shores

This Notice issued May 6, 2025

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MUNICIPALITY OF LAMBTON SHORES
FOREST STORMWATER MASTERPLAN
BMROSS FILE #25033

ABORIGINAL COMMUNITIES CIRCULATION LIST – May 2025

Aboriginal Community	Contact Method
Chief Janelle Nahmahbin Aamjiwnaang First Nation Aamjiwnaang Administration Office 978 Tashmoo Ave. Sarnia, ON N7T 7H5	Lynn Rosales, Environmental Coordinator: 519-336-8410 ext 296 lrosales@aamjiwnaang.ca Alexandra Beveridge, Environmental Worker: ext 245 Chief Contact: chief.plain@aamjiwnaang.ca
Chief Joe Miskokomon Chippewas of the Thames First Nation 320 Chippewa Road, Muncey, ON N0L 1Y0	Submit through NationsConnect Chief Contact: joemiskokomon@cottfn.com
Chief Todd Cornelius Oneida Nation of the Thames 2212 Elm Ave Southwold, ON N0L 2G0	Brandon Doxtator, Environment Coordinator, Oneida Public Works, 519-652-6922 environment@oneida.on.ca Chief Contact: todd.cornelius@oneida.on.ca
Chief Thomas Lewis Munsee-Delaware Nation RR#1 Muncey, ON N0L 1Y0	Consultation Coordinator: consulatation@munsee.ca Chief Contact: chief@munsee.ca
Chief Leela Thomas Bkejwanong Territory Walpole Island First Nation R.R. #3 Wallaceburg, ON N8A 4K9	Consultation Manager, Dean Jacobs: dean.jacobs@wifn.org Lisa Williams, Community Planner: 519-627-1481, ext 1280 Chief Contact: leela.thomas@wifn.org
President Margaret Froh Métis Nation of Ontario 500D Old St. Patrick St., Unit 3 Ottawa, ON K1N 9G4	Kathleen Anderson, Region 9 Councillor: KathleenA@metisnation.org President Contact: MargaretF@metisnation.org

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Chief Justin Logan Delaware Nation (Moravian of the Thames) 14760 School House Line, R.R. #3 Thamesville, ON N0P2K0	Chief Contact: justin.logan@delawarenation.on.ca
Chief Kimberly Bresette Chippewas of Kettle and Stony Point First Nation 6247 Indian Lane Kettle & Stony Point FN, ON N0N 1J1	KPAssistant@kettlepoint.org and fdesk@kettlepoint.org Chief Contact: kimberely.bressette@kettlepoint.org

Notices e-mailed on

Notice placed in NationsConnect on

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MUNICIPALITY OF LAMBTON SHORES
FOREST STORMWATER MASTERPLAN
BMROSS FILE #25033

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Chief Kimberly Bresette Chippewas of Kettle and Stony Point First Nation 6247 Indian Lane Kettle & Stony Point FN, ON N0N 1J1	KPAssistant@kettlepoint.org and fdesk@kettlepoint.org Chief Contact: kimberely.bressette@kettlepoint.org

Notices e-mailed on

Notice placed in NationsConnect on

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Date: May 16, 2025 (5:35pm)
Subject: 25033 – Community of Forest Stormwater Master Plan
Name: Christa Rigney
E-mail Address: christa.rigney@ontario.ca

E-mail submission from Ministry of Natural Resources:

Dear Kelly,

The Ministry of Natural Resources (MNR) received the Notice of Project Start for the Community of Forest Stormwater Master plan project on May 9, 2025. Thank you for circulating this to our office.

MNR has prepared the attached **MNR Southern Region Information Package – For External Proponent Environmental Assessments** (Package) to help project proponents understand MNR's role as a commenting agency and interests related to environmental assessment within the Ministry's mandate. The Package also provides information on the Ministry's regulatory authority to issue authorizations, permits, licenses and/or approvals. The information provided is subject to change from time to time and it is the proponent's responsibility to ensure the information used to support project planning and compliance with *Environmental Assessment Act* requirements is current and accurate. It is the proponent's responsibility to be aware of, and comply with, all relevant federal or provincial legislation, municipal by-laws and/or other agency approvals.

Please note the ministry has not completed a screening of natural heritage or other resource values at this time. If no MNR interests are identified based on the information contained in this Package, there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. If you have identified any MNR interests in your project planning and require additional technical information, or if you have questions about the content of this Package, please feel free to contact me, or SR.planning@ontario.ca.

Best Regards,

Christa Rigney

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MNR SOUTHERN REGION INFORMATION PACKAGE – FOR EXTERNAL PROPONENT ENVIRONMENTAL ASSESSMENTS

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MNR – SOUTHERN REGION – LUPSI

October 2024

How to Use This Information Package

Environmental Assessment (EA) is a planning and decision-making process used to promote environmentally responsible decision-making. In Ontario, this process is defined and is required pursuant to the *Environmental Assessment Act (EAA)*. The Ministry of Environment, Conservation and Parks (MECP) administers the *EAA*.

The Ministry of Natural Resources (MNR) may be asked by a proponent of a project subject to an EA or Class EA to participate as a commenting agency to ensure provincial interests within MNR's mandate are considered by the proponent in the project planning process.

Use of this Information Package "Package" is intended to help project proponents understand MNR's:

- role as a commenting agency and interests related to environmental assessment within the Ministry's mandate (refer Sections 1 through 8 of this document)
- regulatory authority to issue authorizations, permits, licenses and/or approvals (refer Appendix A – MNR Regulatory Role)

The information provided by MNR and the sources listed in this Package should not be considered exhaustive nor a substitute for consultation with other agencies, site visits and appropriate field studies. The information provided is subject to change from time to time and it is the proponent's responsibility to ensure the information used to support project planning and compliance with *EAA* requirements is current and accurate.

If no MNR interests are identified based on the information contained in this Package there is no need to further circulate MNR as a commenting agency when undertaking consultation and review under the applicable EA process. MNR Southern Region (via sr.planning@ontario.ca) may be contacted if there are any questions about the content of this Package or if specific technical information is required.

This Package is intended for use within MNR's Southern Region (SR) regional boundary only. To view the MNR SR regional boundary please see Ministry of Natural Resources and Forestry work centres | ontario.ca.

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1. MNR Mandate

MNR has a mandate to protect Ontario's biodiversity while promoting economic opportunities in the resource sector and supporting outdoor recreation opportunities by:

- Sustainably managing Ontario's fish and wildlife resources.
- Leading the management of Ontario's public (also referred to as Crown) lands, including the beds of navigable waters, oil, gas, salt and aggregate resources, and access to Crown land for renewable energy projects.
- Ensuring the sustainable management of Ontario's Crown forests.
- Protecting people, property and communities from forest fires, floods, and droughts.
- Developing and applying geographic information to help manage the province's natural resources.

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. Information on the Ministry's regulatory role under applicable legislation can be found in Appendix A.

2. MNR Role as Commenting Agency

MNR's role as a commenting agency on projects subject to *EAA* requirements is to:

- Assist and enable project proponents to access relevant technical and scientific information within the scope of MNR's mandate.
- Provide legislative / regulatory / policy information and direction regarding interests within MNR's mandate.
- Support the identification and consideration of the potential effects of a project on matters within MNR's mandate.
- Identify where the project proponent may need to seek MNR approvals regarding the project.

3. Provincial Planning Policies

Provincial plans together with the *Provincial Policy Statement, 2024* (PPS) issued under section 3(1) of the *Planning Act,* provide policy direction on matters of provincial interest related to land use planning and development in Ontario. The PPS and provincial plans contain policies specific to infrastructure projects.

A summary of matters related to MNR's mandate within specific infrastructure-related provincial planning policies can be found below. Please note, this is not an exhaustive list of provincial policies that may apply to a project and other MNR mandated interests may be applicable. It is the project proponent's responsibility to review the provincial plans and PPS,

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which may be amended from time to time, to determine policies applicable to the proposed project.

Provincial Plan Mapping

Mapping of provincial plan boundaries and natural heritage areas as defined in individual provincial plans is available to view or download through Make A Map: Natural Heritage Areas or Ontario GeoHub (GeoHub) - Natural Heritage System Area.

Greenbelt Plan, 2017

Section 4.2.1.2 of the Greenbelt Plan contains policies which are designed to direct infrastructure away from, or where not possible, to minimize the impacts on the Natural Heritage and Water Resource Systems. It requires that new or expanding infrastructure "shall avoid *key natural heritage features, key hydrologic features or key hydrologic areas* unless need has been demonstrated and it has been established that there is no other reasonable alternative."

Niagara Escarpment Plan (NEP), 2017

The NEP is administered by the Niagara Escarpment Commission, the government agency mandated to develop, interpret, and apply NEP policies that maintain and enhance the Niagara Escarpment's unique environmental and landscape features. In addition to Make A Map: Natural Heritage Areas, mapping of NEP Escarpment Natural Areas and Escarpment Protection Areas may be obtained from your local municipality or the Niagara Escarpment Commission.

Oak Ridges Moraine Conservation Plan (ORMCP), 2017

Section 41 of the ORMCP contains policies specific to the development of new or the upgrading/extension of existing infrastructure. This policy direction includes where development shall not be permitted unless specified criteria have been satisfied (including where applicable that there is no other reasonable alternative) and establishes required documentation to support infrastructure projects. Specific conditions apply to proposed infrastructure development within a natural core area and infrastructure crossings of key natural heritage features.

Lake Simcoe Protection Plan (LSPP), 2009

Policy 6.23-DP of the LSPP directs that development or site alteration in relation to infrastructure shall not be permitted within a key natural heritage feature, a key hydrologic feature or within a related vegetation protection zone unless the need for the project has been demonstrated through an Environmental Assessment or other similar environmental approval and it has been demonstrated there is no reasonable alternative. Some exceptions may apply.

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4. Fish, Wildlife and Natural Heritage

MNR's natural heritage and natural resources geospatial data layers can be accessed through the ministry's GeoHub and Natural Resources Data Access Requests | Ontario GeoHub. Please note, these Geospatial Ontario (formerly known as Land Information Ontario) GIS data layers available from MNR and the sources listed and linked on this webpage should not be considered as a substitute for site visits and appropriate field surveys. Generally, information available from MNR can be regarded as a starting point from which to conduct further field studies, if needed. While this data represents MNR's best available current information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. There are many areas where MNR does not currently have information. On-site assessments can better verify site conditions, identify natural features and values and confirm presence of species at risk and/or their habitats.

The information below provides an overview of MNR's mandated interests in natural heritage to consider within the project study area. A detailed list of provincial technical guidance material used to identify significant natural heritage features in different landscapes can be found in Appendix B.

Fisheries

All permanent and intermittent watercourses and waterbodies have potential to contain fish habitat or contribute to fisheries resources. MNR is responsible for administering and enforcing the Ontario Fishery Regulations under the *Fisheries Act*.

When agency approvals are required for a proposed project, it is the responsibility of the authorizing regulatory agency to set any in-water work timing windows in their authorizations. These timing windows may be based on the MNR's In-water Work Timing Window Guidelines.

Areas of Natural and Scientific Interest

The study area should be screened for the presence of Areas of Natural and Scientific Interest (ANSI). ANSIs are lands and waters containing features that are important for natural heritage protection, scientific study, and education. ANSIs are identified and confirmed by MNR based on their representation of Ontario's significant geological and natural heritage features and are categorized as either Earth Science or Life Science.

Wetlands

Study areas that contain unevaluated or unmapped wet features should be investigated for the presence of wetlands. Wetlands are lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to the surface. Wetlands may

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vary in their significance, and the four major types of wetlands are swamps, marshes, bogs, and fens.

As of January 1, 2023, MNR no longer reviews and confirms wetland evaluations. MNR's role with respect to wetland evaluation includes providing the provincial framework under which wetlands in Ontario are evaluated for significance (OWES), and uploading digital wetland boundary mapping and wetland status into the Geospatial Ontario database.

Significant Wildlife Habitat

Study areas which may contain significant wildlife habitat should be investigated for its presence or absence. Significant wildlife habitat may include features such as: seasonal concentration areas for wildlife species (e.g., snake hibernaculum), rare vegetation communities (e.g., tallgrass prairie), specialized habitats of wildlife (e.g., turtle nesting and over-wintering areas), habitats of species of conservation concern (e.g., Special Concern species as identified on the Species at Risk in Ontario list) and animal movement corridors (e.g., amphibian movement corridors). Provincially tracked species data (generalized to Natural Heritage Information Centre 1 km screening grid) can be viewed in Natural Heritage Make a Map. Detailed geospatial data may be obtained through GeoHub via a data sharing agreement.

Please note, relying on online mapping tools only may not accurately reflect the presence or absence of significant wildlife habitat within the project study area. Surveys or additional site level assessment are often required to confirm presence or absence of natural heritage features and values.

Significant Woodlands

Project study areas that contain wooded areas should be investigated for the presence of significant woodlands. Significant woodlands are areas that are ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to their contribution to the broader landscape; or economically important. Local planning authorities are responsible for identifying significant woodlands in accordance with criteria established by MNR.

Significant Valleylands

Project study areas that occur in a valley or other landform depression that has water for some period of the year should be investigated for the presence of significant valleylands. The identification of valleyland significance is the responsibility of the local planning authority. MNR recommends criteria for determination of valleyland significance.

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5. Natural Hazards

In Ontario, development is generally directed away from areas impacted by natural hazards to prevent risks from inappropriate development on and around these lands and to ensure that the risks to public health and safety are minimized. Keeping people and property out of harm's way is a cost-effective, socially responsible, and proactive approach to addressing natural hazards. Various policies and programs direct people and development outside of natural hazard areas.

Responsibility for natural hazard management and implementation of programs and policies for most natural hazards has been delegated to municipalities and Conservation Authorities (CA) where they exist. MNR supports implementation of natural hazard policies by local municipalities and CAs by providing a series of natural hazard technical guidelines (see Appendix B).

Hazardous Lands (flooding, erosion and dynamic beach hazards)

The project location should be reviewed for the presence of hazardous lands. These may include lands subject to flooding and/or erosion and dynamic beaches. These lands become hazardous when people and property locate in these areas. The local municipality and CA should be contacted for further guidance where required.

Special Policy Areas

Some localized areas of the province may be subject to an approved Special Policy Area (SPA), as defined by the PPS. If the study area is located within or adjacent to a SPA, special consideration for any impacts to the flood plain and site-specific SPA policies may be necessary. Any proposed change or modification to the official plan policies, land use designations or boundaries applying to SPA lands, requires joint approval by the Ministers of the Ministry of Municipal Affairs and Housing (MMAH) and MNR.

Local official plans may be reviewed to identify the presence of SPAs within the study area. MNR may have additional information regarding SPAs which can be made available upon request.

Where applicable, information should be identified at the EA stage regarding any expected changes to the floodplain or potential modifications to the SPA subject to provincial approval.

Hazardous Sites (unstable soils and bedrock)

The project location should be reviewed for the presence of hazardous sites. These may include unstable soils (sensitive marine clays [leda], organic soils) or unstable bedrock (karst topography). General information and mapping tools available to assist in identifying the

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potential presence of hazardous sites (e.g., karst and organic soils) include, but are not limited to:

- GeologyOntario (gov.on.ca) is maintained by the Ministry of Mines and provides access to all Ontario Geological Survey maps, reports and digital datasets.
- Wetland mapping
- Soil information and mapping maintained by the Ministry of Agriculture, Food and Rural Affairs is available at Soil Survey Complex (GeoON) or AgMaps

Hazardous Forest Types for Wildland Fire

Project study areas containing wooded areas should be screened for the presence of hazardous forest types for wildland fire. Data to identify potential areas that meet this definition can be found in GeoHub - Potential Hazardous Forest Types for Wildland Fire. Note that this data layer is based on forest type data at a coarse scale. Complete assessment of risk and determination of appropriate mitigation measures can only be done with confidence on a site-specific basis.

6. Oil, Gas and Salt Resources

Oil, gas or salt wells are regulated under the *Oil, Gas and Salt Resources Act*, and the supporting regulations and operating standards.

To help determine the presence of petroleum wells within the proposed project area, basic mapping information can be found through the GeoHub portal or the Ontario Oil, Gas and Salt Resources Library (www.ogsrlibrary.com). The 'Definitions and Terminology Guide' listed in the publications section on the library website may provide a better understanding of the well and resource information available.

The Ontario Petroleum Institute (OPI) is an industry association that can assist with retaining the services of a consultant who can provide information about the potential resources located below the property.

If any unanticipated petroleum wells or associated works are encountered during a project, the proponent should cease work immediately and contact MNR's Petroleum Operations Section (POS) to further understand the proponent's obligations under the *Oil, Gas and Salt Resources Act*. The POS may be contacted at POSRecords@ontario.ca or 519-873-4634. In the event of a spill, the project proponent should report it to the Spills Action Centre at 416-325-3000, 1-800-268-6060 (toll free), or 1-855-889-5775 (TTY).

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7. Mineral Aggregate Resources

Mineral aggregate resources are usually sand, gravel, clay, earth and bedrock. They are used to make roads, subway tunnels, homes and other structures. Mineral aggregate resources are a non-renewable resource that exist in fixed locations.

MNR has an interest in protecting mineral aggregate resources from incompatible development so they may continue to be available for future extraction. Data to map known deposits of mineral aggregate resources is available from Geology Ontario at GeologyOntario (gov.on.ca).

Project proponents should consider mineral aggregate resources by screening for existing aggregate operations at Find Pits and Quarries | ontario.ca, and consider any potential to preclude or hinder operations and the use of aggregate resource deposits through incompatible development.

8. Crown Lands, Lakes, Rivers and Forests

MNR manages public lands including the beds of most lakes and rivers. Some activities on shore lands (both public and private) are also managed by the MNR.

Public land boundaries (mapping is representative only) and applicable Crown land use policies can be viewed at Crown Land Use Policy Atlas | ontario.ca. Provincial parks and conservation reserves are managed by MECP under the *Provincial Parks and Conservation Reserves Act*.

MNR manages the health of Crown forests so they may continue to provide ecological, economic, and social benefits. Most of Ontario's Crown forests are managed by forest companies under 20-year Sustainable Forest Licences. These companies are responsible for working with government and others to prepare and implement a forest management plan for their licence area, monitoring compliance with the plan and renewing the forest after harvesting trees.

9. Conclusion

The list of interests within MNR's mandate described in this document is not exhaustive. For additional information on legislation and programs the ministry administers see Ministry of Natural Resources | ontario.ca.

If you have identified any MNR interests in your project planning and require additional information, please direct your specific questions to the designated Regional Planner for the project, or to SR.planning@ontario.ca.

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Appendix A – MNR Regulatory Role

MNR's regulatory role is triggered when a project proponent seeks an approval under legislation administered by the Ministry. This Appendix provides information about some of the more commonly applicable approvals issued by MNR. Please note, MNR may not be able to confirm the requirement for an approval until a detailed project and site plan have been provided to the Ministry.

A proposal for an MNR approval may engage the ministry's duty to consult Indigenous peoples.

Where MNR is considering an application, the ministry must also ensure its own obligations under the *EAA* are satisfied prior to a final decision. Where an approval would dispose of rights to Crown Resources for a project that has already completed *EAA* requirements under another process, MNR will require written documentation from the applicant setting out how *EAA* requirements for the project have been met prior to MNR issuing any requested approval.

Fish and Wildlife Conservation Act

The *Fish and Wildlife Conservation Act, 1997* regulates the relocation of fish and wildlife. Accordingly, should a project require:

- The relocation of fish outside of the work area, a Licence to Collect Fish for Scientific Purposes will be required.
- The relocation of wildlife outside of the work area (including amphibians, reptiles, and small mammals), will require a Wildlife Collector's Authorization.
- The destruction, taking or possession of any nests or eggs of species not protected by the *Migratory Birds Convention Act (*MBCA*)* or excluded under section 7(2) of the FWCA may also require a Wildlife Collector's Authorization.

To learn more about the management of Fish and Wildlife in Ontario, or to apply for permits or licenses, please visit the Natural Resources Information Portal.

Aggregate Resources Act

The *Aggregate Resources Act* (ARA) is the primary legislative framework for regulating aggregate resource extraction in Ontario. The MNR administers the *ARA* and issues licenses, permits and approves amendments to existing approvals. Information on existing pits and quarries and when an aggregate permit or license may be required can be accessed from MNR's Aggregates Section or GeoHub – Additional Resources

Lakes and Rivers Improvement Act

The *Lakes and Rivers Improvement Act* (LRIA) provides the MNR with regulatory authority over the design, construction, operation, maintenance and safety of dams in Ontario. For

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information regarding when a MNR approval may be required and how the LRIA is administered by the Ministry visit Lakes and Rivers Improvement Act administrative guide | ontario.ca

Public Lands Act

The use of public land and shore lands are regulated under the *Public Lands Act*. A work permit must be obtained from MNR to undertake certain activities on public land and shore lands. To occupy public lands in Ontario, you must receive prior approval from MNR unless the use is permitted by regulation. Visit Natural Resources Information Portal for information on when a permit or approval is required and how to submit an application.

Crown Forest Sustainability Act

Any activities that involve a proposal to cut Crown forest resources (e.g., trees on Crown land) may require approval under the *Crown Forest Sustainability Act, 1994.*

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Appendix B – Technical Guides

The following technical guides are the province's best available information to support identification of significant natural heritage features in different landscapes:

- Natural Heritage Reference Manual (2010)
- Greenbelt Technical Paper (2005)
- Oak Ridges Moraine Technical Paper 1 (Natural Heritage Features)
- Oak Ridges Moraine Technical Paper 2 (Significant Wildlife Habitat)
- Oak Ridges Moraine Technical Paper 7 (Significant Woodlands)
- Lake Simcoe Protection Plan Technical Paper
- Ontario Wetland Evaluation System (OWES)
- Significant Wildlife Habitat Technical Guide
    - Ecoregion Criterion Schedules for the identification of Significant Wildlife Habitat
        - Ecoregion 5E
        - Ecoregion 6E
        - Ecoregion 7E
    - Significant Wildlife Habitat Mitigation Support Tool (MiST)

Other supporting information may be found at Ontario GeoHub or Natural Resources Data Access Requests | Ontario GeoHub.

The following technical guides are the province's best available information to support implementation of MNR's interest in natural hazards (contact MNR to request pdf copies):

- Understanding Natural Hazards (2001)
- Special Policy Areas Procedures (2009)
- Technical Guide – River & Stream Systems: Flooding Hazard Limit (2002)
- Technical Guide – River & Stream Systems: Erosion Hazard Limit (2002)
- Great Lakes-St. Lawrence River Shorelines: Flooding, Erosion and Dynamic Beaches (2001)
- Technical Guide for Large Inland Lakes Shorelines: Flooding, Erosion and Dynamic Beaches (1996)
- Hazardous Sites Technical Guide (1996)
- Technical Bulletin: Flooding Hazards: Data Survey and Mapping Specifications (2023)
- Wildland Fire Risk Assessment and Mitigation Reference Manual (2017)

The following technical guide is the province's best available information supporting implementation of MNR's mandated interest in mineral aggregate resources (contact MNR to request pdf copy):

- Non-renewable Resources Training Manual (1997)

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Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Operations Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Toronto, ON M5G 1S7
Tel.: 437-212-5945

Ministère des Affaires civiques et du Multiculturalisme

Planification relative au patrimoine
Opérations relatives au patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
5e étage, 400, av. University
Toronto, ON M5G 1S7
Tél.: 437-212-5945

Ontario

May 26, 2025 EMAIL ONLY

Kelly Vader, MCIP, RPP
Environmental Planner
B.M. Ross and Associates Limited
62 North Street
Goderich, ON N7A 2T4
kvader@bmross.net

MCM File	**:**	**0023594**
Proponent	**:**	**Municipality of Lambton Shores**
Subject	**:**	**Municipal Class Environmental Assessment - Master Plan - Notice of Commencement**
Project	**:**	**Stormwater Master Plan, Community of Forest**
Location	**:**	**Municipality of Lambton Shores, County of Lambton**

Dear Kelly Vader:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Notice of Commencement for the above-referenced project.

MCM's interest in this master plan relates to its mandate of conserving Ontario's cultural heritage, which includes archaeological resources, built heritage resources, and cultural heritage landscapes.

MCM understands that master plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental assessment planning principles. The Municipal Class Environmental Assessment (MCEA) outlines a framework for master plans and associated studies which should recognize the planning and design Process of this Class EA and should incorporate the key principles of successful environmental assessment planning identified in Section A.1.1. The master planning process will, at minimum, address Phases 1 and 2 of the Planning and Design Process of the MCEA.

This letter provides advice on how to incorporate consideration of cultural heritage in the above-mentioned master planning process by outlining the technical cultural heritage studies and the level of detail required to address cultural heritage in master plans. In accordance with the MCEA, cultural heritage resources should be identified early in the process in order to determine known and potential resources and potential impacts.

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Master Plan Summary
The Municipality of Lambton Shores is initiating a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Town of Forest. The stormwater servicing review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. When completed, the Master Plan will recommend a stormwater servicing strategy that could be implemented in phases as determined by need, to address existing problem areas as well as accommodating future growth and climate change.

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act.

It is unclear what approach is being taken in accordance with the Master Planning Process outlined in the Municipal Class Environmental Assessment (MCEA). We recommend that you clearly identify your proposed study approach. Any individual undertakings proceeding as part of this master plan should be screened for impacts to cultural heritage resources.

Identifying Cultural Heritage Resources
MCM understands that the final public notice for the master plan could become the notice of completion for the Schedule B and C MCEAs within it and that this approach would likely result in extensive documentation should the master plan include numerous Schedule C MCEA undertakings. In regard to cultural heritage resources, the Master Plan document should:

- identify existing baseline environmental conditions;
- identify expected environmental impacts; and
- Include measures to mitigate potential negative impacts.

Archaeological Resources
Any undertakings included as part of the master plan should be screened using the Ministry's *Criteria for Evaluating Archaeological Potential* and *Criteria for Evaluating Marine Archaeological Potential* (if shoreline or in-water works are proposed) to determine if an archaeological assessment is needed. If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an archaeologist licensed under the Ontario Heritage Act and submitted for MCM review prior to the completion of the master plan.

Built Heritage Resources and Cultural Heritage Landscapes
The Ministry's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* should be completed to help determine whether this EA project may impact known or potential built heritage resources and/or cultural heritage landscapes.

If there is potential for built heritage resources and/or cultural heritage landscapes within the project area, then a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment shall be undertaken for the entire study area during the planning phase and be summarized in the EA Report. This study will:

1. Describe the existing baseline cultural heritage conditions within the study area by identifying all known or potential built heritage resources and cultural heritage landscapes, including a historical summary of the study area. The Ministry has developed screening criteria that may assist with this exercise: *Criteria for Evaluating for Potential Built Heritage Resources and Cultural Heritage Landscapes*.

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2. Identify preliminary potential project-specific impacts on the known and potential built heritage resources and cultural heritage landscapes that have been identified. The report should include a description of the anticipated impact to each known or potential built heritage resource or cultural heritage landscape that has been identified.

3. Recommend measures to avoid or mitigate potential negative impacts to known or potential built heritage resources and cultural heritage landscapes. The proposed mitigation measures are to inform the next steps of project planning and design.

Given that this project covers a large study area, MCM recommends that the Cultural Heritage Report is carried out so that step 1 described above is undertaken early in the planning process. Then, steps 2 and 3 can be undertaken once the preferred alternatives have been selected.

Where a known or potential built heritage resource or cultural heritage landscape may be directly and adversely impacted, and where it has not yet been evaluated for Cultural Heritage Value or Interest (CHVI), completion of a Cultural Heritage Evaluation Report (CHER) is required to fully understand its CHVI and level of significance. The CHER must be completed as part of the final EA report. If a potential resource is found to be of CHVI, then a Heritage Impact Assessment (HIA) will need to be undertaken and included in the final EA report. Please send the HIA to MCM for review and make it available to local organizations or individuals who have expressed interest in review.

While some cultural heritage landscapes are contained within individual property boundaries, others span across multiple properties. For certain cultural heritage landscapes, it will be more appropriate for the CHER and HIA to include multiple properties, in order to reflect the extent of that cultural heritage landscape in its entirety.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, community heritage registers, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Assessment Reporting

Technical cultural heritage studies are to be undertaken by a qualified person who has expertise, recent experience, and knowledge relevant to the type of cultural heritage resources being considered and the nature of the activity being proposed. Please advise MCM whether any technical heritage studies will be completed for this master plan and provide them to MCM before issuing a Notice of Completion.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please remove Joseph Harvey from your contact list as he is no longer associated with this file. Please continue to send any notices, report and/or documentation to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Amanda Antwi-Nsiah, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 437-212-5945 | Amanda.Antwi-Nsiah@ontario.ca

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Thank you for consulting MCM on this project. Please continue to do so through the master plan process and contact me for any questions or clarification.

Sincerely,

Amanda Antwi-Nsiah
Heritage Planner
Amanda.Antwi-Nsiah@ontario.ca

Copied to: Karla Barboza, Team Lead, Heritage Planning Unit, MCM
Émilie Thiffeault, B.M. Ross and Associates Limited

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

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

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery and Procurement, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

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Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

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June 4, 2025

Alex Williams
Municipality of Lambton Shores
awilliams@lambtonshores.ca

BY EMAIL ONLY

Re: **Forest Stormwater Management Masterplan**
Acknowledgement of Notice of Commencement

Dear Alex,

The Ministry of the Environment, Conservation and Parks (MECP) has received your Notice of Commencement for the above project. The proponent is following the masterplan process with respect to project, to which the Municipal Class Environmental Assessment (Class EA) applies.

The **updated** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study.

Based on the ministry's review of the Notice of Commencement, the Municipality of Lambton Shores is required to consult with the following Indigenous communities, who have been identified as being potentially interested or affected by stormwater management undertakings in the area of study:

- Aamjiwnaang First Nation
- Bkejwanong (Walpole Island)

- Caldwell First Nation
- Chippewas of Kettle and Stony Point
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames

The identified Indigenous communities should be contacted directly throughout the planning process. These communities may be interested in the proposed undertakings generally or may have Constitutionally protected Aboriginal or Treaty rights that may be impacted by stormwater management undertakings.

Steps that the proponent may need to take in relation to Indigenous consultation for the proposed undertakings are outlined in the Class EA in section A.3 (Consultation) generally and more specifically in A.3.7.

Proponents are required to contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) if information is shared by an Indigenous community about potential adverse impacts to Aboriginal or Treaty rights or sites of cultural significance, if consultation with any Indigenous communities or other stakeholder has reached an impasse or if a Section 16 Order request is expected. The MECP will then assess whether and what additional steps should be taken, including what role you will be asked to play. While there is currently no across-the-board obligation to provide capacity funding to Indigenous communities being consulted; it is important that communities can effectively engage in the process, and this may require capacity funding. The MECP strongly encourages proponents to consider reasonable requests for such funding.

Please ensure a copy of the Notice of Completion is sent to the ministry's Southwest email account (eanotification.swregion@ontario.ca) after the draft report is reviewed and finalized.

Should you or any members of your project team have any questions regarding the material above, please contact me at monika.macki@ontario.ca.

Sincerely,

Monika Macki

Monika Macki
Regional Environmental Planner –Southwest Region
Project Review Unit, Environmental Assessment Branch

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Enclosed: Areas of Interest

Attached: Client's Guide to Preliminary Screening for Species at Risk

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AREAS OF INTEREST

It is suggested that you check off each section after you have considered / addressed it.

Planning and Policy

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
    - The **Provincial Planning Statement (PPS) (2024)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies in the PPS 2024 should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies. **The PPS 2024 replaces the Provincial Policy Statement (PPS) (2020) and A Place to Grow: Growth Plan for the Greater Golden Horseshoe (APTG) (2019)**.
    - Projects located in MECP Central or Eastern Region may be subject to the **Oak Ridges Moraine Conservation Plan (2017)** or the **Lake Simcoe Protection Plan (2014)**.
    - Projects located in MECP Central, Southwest or West Central Region may be subject to the **Niagara Escarpment Plan (2017)**.
    - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the **Greenbelt Plan (2017)**. Due to Amendment 4 to the Greenbelt Plan, areas within the Greenbelt are still subject to applicable policies in the PPS **(2020)** and APTG **(2019)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011)**.

- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

Source Water Protection

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

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in

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designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if this project is occurring within a vulnerable area, proponents can use Source Protection Information Atlas, which is an online mapping tool available to the public. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The

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mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

Climate Change

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of Class EA projects to:**

1. Consider during the assessment of alternative solutions and alternative designs, the following:
    a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
    b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

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- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.**

- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from*

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Construction and Demolition Activities report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
  - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
  - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
  - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, for projects located in Central Region you may consider the provisions of the Rouge Park Management Plan if applicable.

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

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- For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If a proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed project and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an

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Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the project involves groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by

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this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

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

Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
  - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

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Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the project. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout

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the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Section 16 Order Requests under the Environmental Assessment Act, although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**

- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and to reference any relevant information in the report.

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Notice of Completion

Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

The public can request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister of the Environment, Conservation and Parks

777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

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

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Client's Guide to Preliminary Screening for Species at Risk

DRAFT

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

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1.0 Purpose, Scope, Background and Context

1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

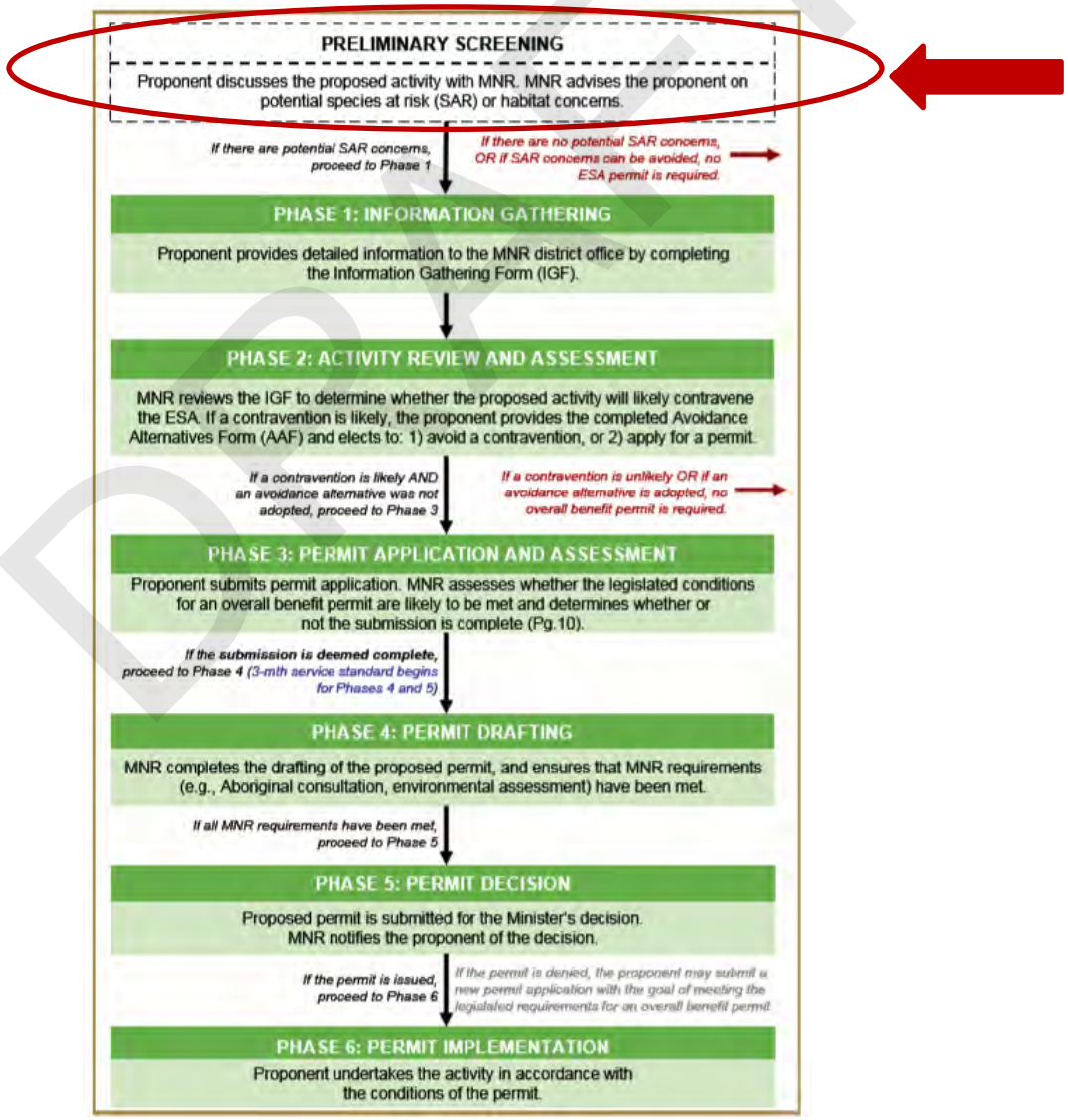
1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

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1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



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2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

Step 1: Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

Step 2: Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

Step 3: Client gathers information identified in the checklist in section 4 of this guide.

Step 4: Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

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3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

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3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

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3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

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4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

DRAFT

Deshkan Ziibiing
Chippewas of the Thames
320 Chippewa Road
Muncey, ON, N0L 1Y0

19-Jun-2025 13:41 EDT

Dear: Kelly Vader

We have received information concerning 25033 - Community of Forest Stormwater Master Plan, dated 14-May-2025. The proposed project is located within the Huron tract Treaty area. It is also located within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN Traditional Territory.

After screening this project, we have identified it to be of moderate concern due to potential impacts to the water. As this time, I am requesting to be kept informed throughout this Master Plan process. Please contact me using the conversation feature to set up a time for a meeting when more information is available (outside of the future PIC). Any new documents can also be uploaded using the conversation feature.

To note, COTTFN requires up to 45 days to respond to projects as outlined in the attached COTTFN Consultation Protocol because of the shear amount of consultation requests we receive. Please adjust future timeframes for responses from COTTFN.

Also please note, if there is an Archaeology Assessment conducted for projects outlined in this Master Plan, we require notification and the opportunity to actively participate by sending First Nation Field Liaisons on behalf of this First Nation

We look forward to continuing this open line of communication. To implement meaningful consultation, COTTFN has developed its own protocols - a document and a process that will guide positive working relationships. We would be happy to meet with you to review COTTFN's Consultation Protocols. As per ‘Appendix C’ of the Wiindmaagewin, we will be sending an invoice based on our time to review the documentation in the future when more information is reviewed. The invoice will come from COTTFN's Finance Department. If you could let us know who we should direct the invoice to, that would be appreciated. Please do not hesitate to contact me if you need further clarification of this letter.

Sincerely,

DRAFT

Original Signed
Erna Leclair
Consultation Analyst
Chippewa of the Thames First Nation
320 Chippewa Road, Muncey, ON, N0L 1Y0
(519) 289-5555 Ext 239
consultation@cottfn.com

wiindmaagewin-consultation-protocol-120623-approved.pdf

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MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

NOTICE OF PUBLIC OPEN HOUSE

THE PROJECT:

The Municipality of Lambton Shores initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Community of Forest in May 2025. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. Preliminary recommendations have now been prepared for problem areas identified during Master Plan investigations. Input from residents is being sought prior to finalizing the preferred approach.

THE ENVIRONMENTAL ASSESSMENT PROCESS:

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies, First Nation and Métis communities, and affected property owners.

PUBLIC INVOLVEMENT:

Public consultation is a key component of this study. A Public Open House is being organized by Lambton Shores in order to obtain input from residents on the status of study investigations. The meeting will share details about the Master Plan process, investigations completed to date and provide preliminary recommendations to study area residents in order to obtain their feedback. Representatives from the Municipality of Lambton Shores and the project engineers, will be present at the meeting to answer questions. Details of the meeting are as follows:

DATE: **Wednesday June 3, 2026**
LOCATION: **Shores Recreation Centre - 7883 Amtelecom Parkway, Forest**
TIME: **6:00 P.M. to 8:00 P.M.**

For further information on this project, or to review the Master Plan process, please contact the project engineers: B.M. Ross and Associates: 62 North Street, Goderich, Ontario, N7A 2T4. Telephone: (519) 524-2641. Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net).

Alex Williams, Infrastructure Manager, Municipality of Lambton Shores
This Notice issued May 27, 2026

CELEBRATING 75 YEARS 1951-2026 BMROSS engineering better communities

Lambton Shores

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MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

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WELCOME

PUBLIC OPEN HOUSE
June 3, 2026
6:00 P.M. to 8:00 P.M.

THE MUNICIPALITY OF
LAMBTON SHORES

CELEBRATING 75 YEARS 1951-2026
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MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

SUMMARY OF MASTER PLAN PROCESS:

- LONG RANGE PLANS DESIGNED TO INTEGRATE INFRASTRUCTURE REQUIREMENTS WITH ENVIRONMENTAL ASSESSMENT PLANNING PRINCIPLES
- EXAMINES A GROUP OF RELATED PROJECTS IN ORDER TO OUTLINE A FRAMEWORK FOR PLANNING FOR SUBSEQUENT PROJECTS AND/OR DEVELOPMENTS
- INVOLVES CONSULTATION WITH THE PUBLIC, REGULATORY AGENCIES, INDIGENOUS COMMUNITIES AND AFFECTED PROPERTY OWNERS

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SCOPE OF THIS STUDY:

- EXAMINE EXISTING STORMWATER DRAINAGE FEATURES AND FACILITIES IN FOREST AND INVENTORY COMPONENTS
- IDENTIFY GENERAL AREAS OF CONCERN WHICH NEED TO BE ADDRESSED
- DEVELOP RECOMMENDATIONS FOR IMPROVEMENTS WITHIN EXISTING DEVELOPED AREAS OF CONCERN
- CONSULT WITH RESIDENTS, INDIGENOUS COMMUNITIES AND REVIEW AGENCIES
- PROVIDE A PROPOSED PHASING PLAN FOR UPGRADES TO IMPLEMENT OVER A 20 - 25 YEAR TIMEFRAME
- PREPARE A REPORT DOCUMENTING THE MASTER PLAN PROCESS AND STUDY RECOMMENDATIONS

MASTER PLAN PROCESS

BACKGROUND REVIEW

EVALUATE PROBLEMS AND IDENTIFY ALTERNATIVE SOLUTIONS

IDENTIFY IMPACT OF ALTERNATIVE SOLUTIONS ON THE ENVIRONMENT, AND MITIGATING MEASURES

EVALUATE ALTERNATIVE SOLUTIONS: IDENTIFY RECOMMENDED SOLUTIONS

CONSULT WITH THE PUBLIC AND REVIEW AGENCIES TO IDENTIFY ANY ISSUES OR CONCERNS WITH DEFINED PROBLEMS AND ALTERNATIVE SOLUTIONS

ASSESS POTENTIAL NEGATIVE AFFECTS: DEVELOP MITIGATION AND IMPACT MANAGEMENT

SELECT PREFERRED STORMWATER DRAINAGE PLAN

PREPARE MASTER PLAN REPORT TO DOCUMENT STUDY FINDINGS

SUBMIT MASTER PLAN TO MUNICIPAL COUNCIL FOR REVIEW

PUBLISH NOTICE OF MASTER PLAN COMPLETION CIRCULATE THE DOCUMENT TO STAKEHOLDERS

IDENTIFY CLASS EA STUDIES NEEDED TO IMPLEMENT THE MASTER PLAN

PRESENT

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PROJECT STUDY AREA



MASTER PLAN TIMELINES

• Preliminary Background Review	March – May 2025
• Initial Notice Published	May 2025
• Identified Known Drainage Issues	May – June 2025
• Review Input from Initial Consultation	July – September 2025
• Identify Major Problem Areas	Fall 2025
• Drainage Inventory and Mapping	Fall & Winter 2026
• Preliminary Recommendations	Winter 2026
• Public Open House	June 2026
• Additional Public/Agency/FN Consultation	June – July 2026
• Additional Engineering Review	July 2026
• Finalize Master Plan	Summer 2026

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THE MUNICIPALITY OF LAMBTON SHORES

Data Collection

- To determine capacity of the existing water, sewage or stormwater systems, modeling of the network is required.
- To undertake the modeling, the existing infrastructure's size and location needs to be verified.
- Existing plans, as-built drawings and existing digital data is reviewed.
- Data gaps are identified and then field work is completed to fill the data gaps.
- A GPS Unit with accuracy to 1cm, is used in the field to collect pipe inverts.
- The data is recorded on an ArcGIS Online FieldMaps App.
- The GPS Unit records the pipe's location using x, y and z coordinates.

Technical staff collecting data



Remove maintenance hole lid



Pipe-Mic attachment to measure pipe dia.



Measuring pipe invert and diameter



Using Trimble Catalyst GPS to record lid

- Once the data is downloaded and all data gaps have been resolved, maps can be produced showing the location of existing infrastructure
- The information can also be used to model existing sewage, water and stormwater systems to determine their capacity
- Modeling data is used to identify areas needing to be upgraded or to determine appropriate sizing for future expansions.

Stormwater Modelling 1D

- Modelling was completed using PCSWMM with a Dual Drainage Network
- To determine the limits of a watershed, a Watershed Delineation Tool (WDT) from PCSWMM has been used, further subdivision and combinations was completed to accurately route stormwater
- Following a raindrop's flow path
    1. Subcatchments – Determine how much water makes it to the sewer and how much soaks into the ground using what is built on the ground, what type of soil, and how steep the surface is.
    2. First Drainage Network – Overland flow paths which include swales, ditches, roads and drainage easements
    3. Second Drainage Network – Underground storm sewer infrastructure. This is linked to the first drainage network by catchbasins and flow curves to ensure the balance of flow between the dual drainage network is accurate

Rainfall Data

- Historical rainfall is measured, and a statistical analysis is completed to generate Intensity-Duration-Frequency (IDF) curves for that area.
- Design Storm with a probability of occurring that year (1:2, 1:100, etc.) can be made.
- These Design Storms are used in the model to find and/or confirm problem areas and solutions
- Using Historical rainfall events and measured depths the model can be calibrated and checked for accuracy

Model components

- Subcatchments – Capture the rain in an area and route it to a junction to enter the model
- Junctions – Start and end of conduits (similar to maintenance holes)
- Conduits – Convey flow through the network (storm sewers, ditches, roads, etc.)
- Storages – Used to model areas that flood and will have standing water that backs up. (Stormwater management Ponds)
- Orifice, Outlets, & Wiers – Used to control flow through the model and connect the overland and underground drainage networks
- Outfalls – The outlet for the water for the model

1-Dimensional Modelling Limits

- 1 dimensional modeling is great for looking at areas with sewers and catchments that don't have larger surface water flooding.
- 2D modelling can be used to better model the limits of flooding in particular areas

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Stormwater Modelling 2D

- Modelling was completed using PCSWMM 2D modelling
- To determine the limits of a watershed, the limits of the subcatchments from the 1D model used
- Following a raindrop's flow path
    1. Rain falls on the model mesh and routes water through the mesh to the lowest point
    2. Low points backup and spill occurs to the next lowest point
    3. Repeat the step until the flow gets to the outlet

Rainfall Data

- Historical rainfall is measured, and a statistical analysis is completed to generate Intensity-Duration-Frequency (IDF) curves for that area.
- Design Storm with a probability of occurring that year (1:2, 1:100, etc.) can be made.
- These Design Storms are used in the model to find and/or confirm problem areas and solutions
- Using Historical rainfall events and measured depths the model can be calibrated and checked for accuracy

Model components

- Model Mesh Network made of nominally spaced junctions and conduits draped over the existing ground data for Overland Flow
- Connections to storm sewers and culverts
- Same sewer components as 1D models

Why 2D modeling

- For complex overland watersheds, it is the best way to model the limits of flooding and flow routes

2-Dimensional Modelling Limits

- Similar assumptions to 1D modelling are to made
- Very computationally expensive

    (It takes a very long time)

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THE MUNICIPALITY OF LAMBTON SHORES

COMMUNITY OF FOREST

Urban Boundary

Parcels

0 150 300

METRES

N

FULLER RD
BEECHWOOD AVE
ENTERPRISE DR
RAWLINGS RD
MAPLE ST
BRADLEY ST
PRINCE ST
JUNIPER PL
AMTELECOM PKY
GILPIN WAY
TOWNSEND LINE
KING ST E
ALBERT ST
GORE ST
ARTHUR ST
YORK ST
QUEEN ST W
QUEEN ST E
JAMES ST N
MAIN ST N
WELLINGTON ST W
WELLINGTON ST E
UNION ST
JEFFERSON ST W
ARGYLE ST
MACDONALD ST
BROADWAY ST
BAYLEY ST
MACKENZIE ST
ANN ST
OZIER ROW
EUREKA ST
ONTARIO ST
WASHINGTON ST N
KING ST W
MACHENRY ST
WATERS ST
PALACE ST
ROTARY WAY
VICTORIA ST
CLYDE ST
WATT ST
CHURCH ST
JAMES ST S
GEORGE ST
PARK LANE
MORRIS ST
ROYAL ST
FRANCES DR
STANLEY ST
MAIN ST S
LEONARD ST
MCLINLAY AVE
HENNESSY ST
PHIBBS ST
FIELD ST
MACNAB ST
FOREST RD
HICKORY CREEK LINE
DOUGLAS LINE
21
12

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OVERALL PLAN OF DRAINAGE CATCHMENTS

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FULLER RD
RAWLINGS RD
ENTERPRISE DR
BEECHWOOD AVE
AMTELECOM PKY
John Coultis Drain
MAPLE ST
Willemse
UNION ST
North Street Drain
MAIN ST N
PRINCE ST
QUEEN ST W
QUEEN ST E
JAMES ST N
WELLINGTON ST W
WELLINGTON ST E
ALBERT ST
GORE ST
ARTHUR ST
YORK ST
KING ST E
McDonald Drain
BROADWAY ST
EAST LANE
TOWNSEND LINE
JEFFERSON ST W
Fairgrounds Outlet
ANN ST
EUREKA ST
ARGYLE ST
ONTARIO ST
CLYDE ST
WASHINGTON ST N
KING ST W
CN Trail
VICTORIA ST
MACHENRY ST
MACKENZIE ST
WATER ST
BAYLEY ST
Lougheed Drain
Unknown Outlet
CLYDE ST
WATT ST
PALACE ST
CHURCH ST
Park Lane
Alexander Drain
GEORGE ST
MORRIS ST
DeJersey Drain
ROYAL ST
STANLEY ST
Park Lane
FRANCES DR
PARK LANE
MAIN ST S
MACNAB ST
MACHENRY ST
MACDONALD ST
Kernohan Drain
PHIBBS ST
Todd Drain 2
FIELD ST
Main / Hickory
Todd Drain
HICKORY CREEK LINE
FOREST RD
21
12

Urban Boundary
Surface Water Channel
Parcels

Drainage Catchments
- Alexander Drain
- CN Trail
- Crossing Queen
- DeJersey Drain
- Fairgrounds Outlet
- John Coultis Drain
- Kernohan Drain
- Lougheed Drain
- Main Hickory
- McDonald Drain
- North Street Drain
- Park Lane
- Queen Street
- Todd Drain
- Todd Drain 2
- Unknown Outlet
- Willemse

0 250 500
METRES

N

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PROBLEM AREA 1

N

0 25 50

METRES

ROYAL ST

WILLIAM ST

MAIN ST S

MACNAB ST

Cut curb to boulevard catch basin

No storm sewers on Royal/MacNab. Need further topo investigation regarding rear yard flow routes.

Further investigation with information from the SCRCA regarding flood levels

Private drain connection to Main Street was not reinstated

Private drain connection to Main Street was not reinstated. No storm sewers on MacNab Street.

Problem Area 1 Properties

200 Existing Storm Sewer (mm dia.)

1050 Existing Drain (mm dia.)

Surface Water Channel

Contour Line (0.5m Interval)

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PROBLEM AREA 2

0 25 50
METRES

N

Urban Boundary

Problem Area 2 Catchment

250 Proposed Improvements Conduit (mm dia.)

200 Existing Storm Sewer (mm dia.)

1050 Existing Drain (mm dia.)

Surface Water Channel

750
900
525
375
JEFFERSON ST W
1050
CROZIER ROW
300
ANN ST
300
200
ARGYLE ST
ONTARIO ST
250
CLYDE ST
EUREKA ST
CLYDE ST

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Notes

Existing

-No storm sewers on Eureka Street for sagged catch basin at Crozier Row.

Proposed

-Add a catch basin lead from Eureka Street down Crozier Row to the existing 1050mm Fairground Drain to provide a piped outlet for this area.

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PROBLEM AREA 3

0 25 50
METRES

N

- Urban Boundary
- Problem Area 3 Catchment
- 250 Proposed Improvements Conduit (mm dia.)
- Proposed Catchbasin
- 200 Existing Storm Sewer (mm dia.)
- 1050 Existing Drain (mm dia.)
- Existing Storm Sewer To Be Upgraded

300
450
200 QUEEN ST W
400
WELLINGTON ST W
UNION ST
ARGYLE ST
EUREKA ST
375 JEFFERSON ST W
300
ONTARIO ST
200
ANN ST
200

Notes

Existing

-No catch basin to collect flows down Wellington Street.
-Storm sewers on Ontario Street and Queen Street are undersized (200mm tiles).

Proposed

-Add twin inlet catch basins in the sag of Wellington Street.
-Upgrade the storm sewers on Ontario Street and Queen Street.

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PROBLEM AREA 4

0 50 100
METRES

N

Urban Boundary
Problem Area 4 Catchment
Proposed Improvements Conduit (mm dia.)
Surface Water Channel

See Additional Poster Boards

900

450

TOWNSEND LINE
JUNIPER PL
UNION ST
MAPLE ST
BEECHWOOD AVE
BRADLEY ST
PRINCE ST
GORE ST
ARTHUR ST
QUEEN ST W
QUEEN ST E
ALBERT ST
MAIN ST N
WELLINGTON ST W
WELLINGTON ST E
WASHINGTON ST N
JAMES ST N
KING ST E
BROADWAY ST
JEFFERSON ST W
JEFFERSON ST E

Notes

Existing
-Large catchment surcharges the sewer on Townsend Line.
-The grade change coming from James Street to Juniper Place causes extra energy to backup into Juniper Place.
-Overland flow on Townsend Line (south side) directed into Juniper Place.
-Juniper Place floods with 500mm depth before overland relief to Townsend Line.

Proposed
-Add a relief open ditch and sewer along the north side of Townsend Line that will activate before the catch basin on Juniper Place.
-Add an overland flow block to prevent Townsend Line flows from flowing into Juniper Place.
-Additional field work to determine the best option.

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PROBLEM AREA 4
Juniper Place

N

PROPOSED MAINTENANCE HOLE

24.5m OF 900Ø STM @ 0.50%

149.8m OF 900Ø STM @ 0.25%

TOWNSEND LINE (COUNTY RD. 12)

Ex. 16.5m OF 1200Ø STM @ 0.44%

Ex. 9.5m OF 1050Ø STM @ 0.66%

Ex. 118.0m OF 900Ø STM @ 0.26%

PROPOSED DITCH INLET CATCH BASIN (DICB)

ENTRANCE FEATURE TO REDIRECT OVERLAND FLOW

TOWNSEND LINE SUPER-ELEVATION OR RAISED SIDEWALK CROSSING

PROPOSED OPEN DITCH

2.5:1

PROPOSED DITCH INLET CATCH BASIN (DICB)

15.5m OF 600Ø STM @ 2.00%

TOWNSEND LINE (COUNTY RD. 12)

Ex. 10.4m OF 675Ø STM @ 0.12%

Ex. 56.4m OF 675Ø STM @ 0.70%

UNION STREET

Ex. 106.3m OF 675Ø STM @ 0.39%

JUNIPER PLACE

Ex. 85.4m OF 300Ø STM @ 0.31%

208.793

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PROPOSED STORM SEWER

EXISTING STORM SEWER

SLOPED DITCH

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Municipality of Lambton Shores

FOREST MASTER PLAN - EA

Juniper Place
Overall Plan

CONTRACT No.

PROJECT No. 25033

SCALE 1:300

DRAWING No. 1

PROBLEM AREA 5

Urban Boundary

Problem Area 5 Catchment

Proposed Willemse Drain Extension

Existing Willemse Drain

0 25 50

METRES

N

300

BEECHWOOD AVE

MAPLE ST

BRADLEY ST

PRINCE ST

ALBERT ST

TOWNSEND LINE

GORE ST

ARTHUR ST

DRAFT

Notes

Existing

-Catch basins on Albert Street and Maple Street have no piped outlet.

Proposed

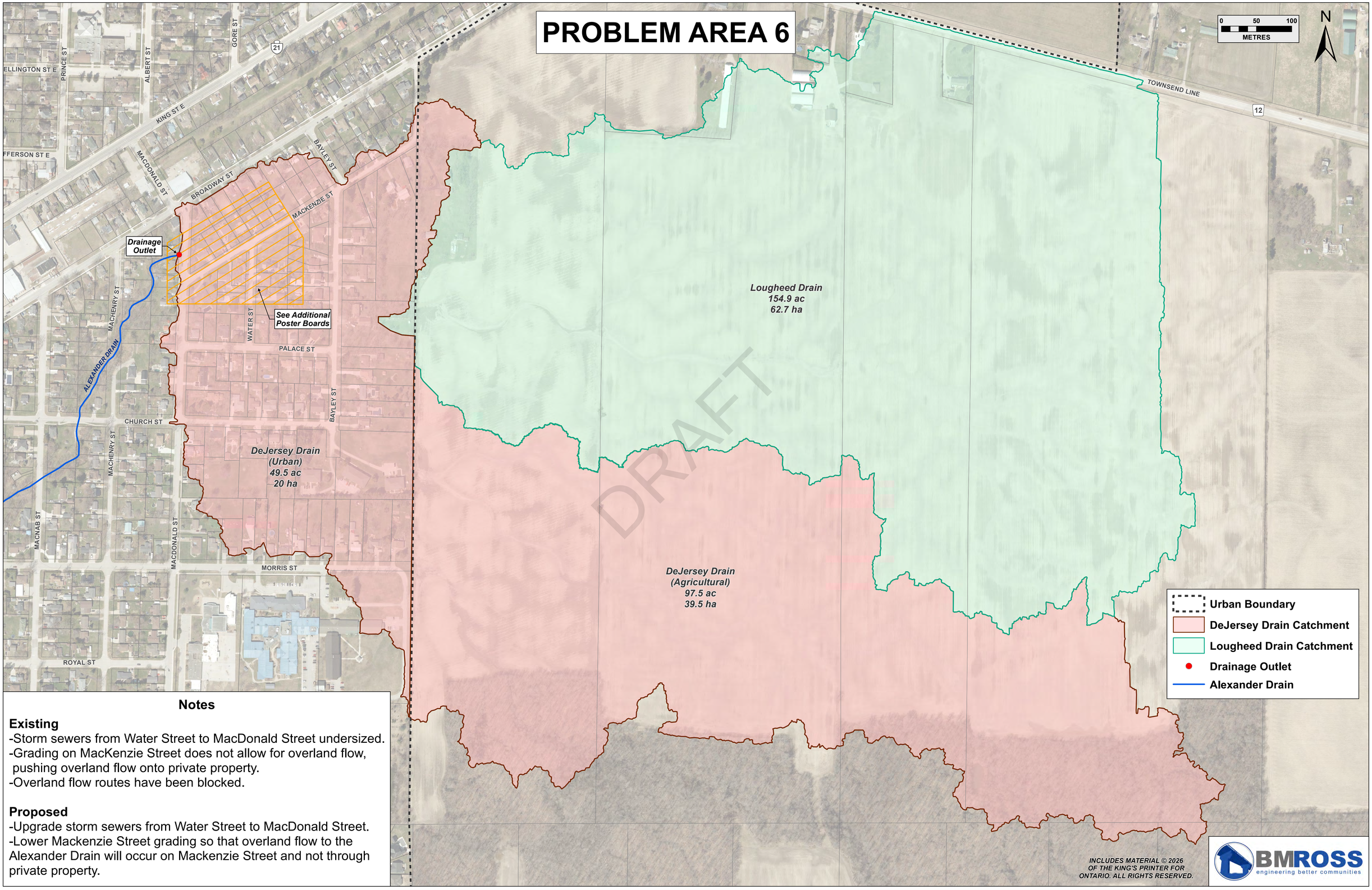
-Extend the Willemse Drain onto Albert Street and/or Maple Street.

-Limits of extension to be determined in detailed design.

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PROBLEM AREA 6



Notes

Existing

-Storm sewers from Water Street to MacDonald Street undersized.
-Grading on MacKenzie Street does not allow for overland flow, pushing overland flow onto private property.
-Overland flow routes have been blocked.

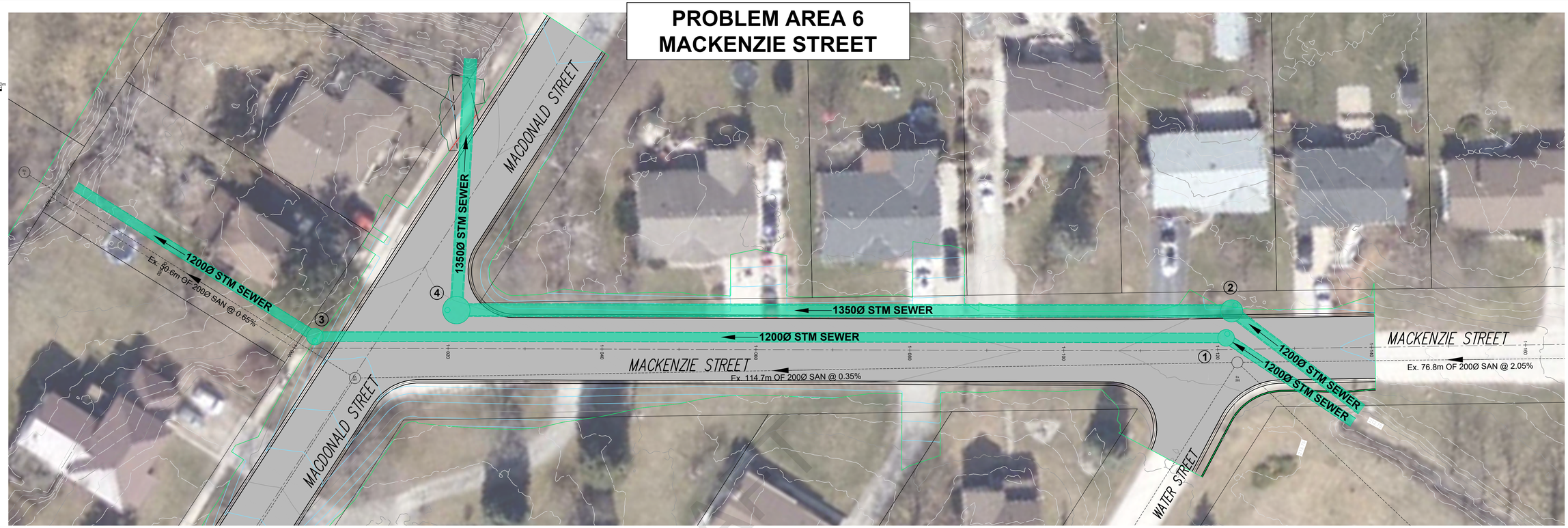
Proposed

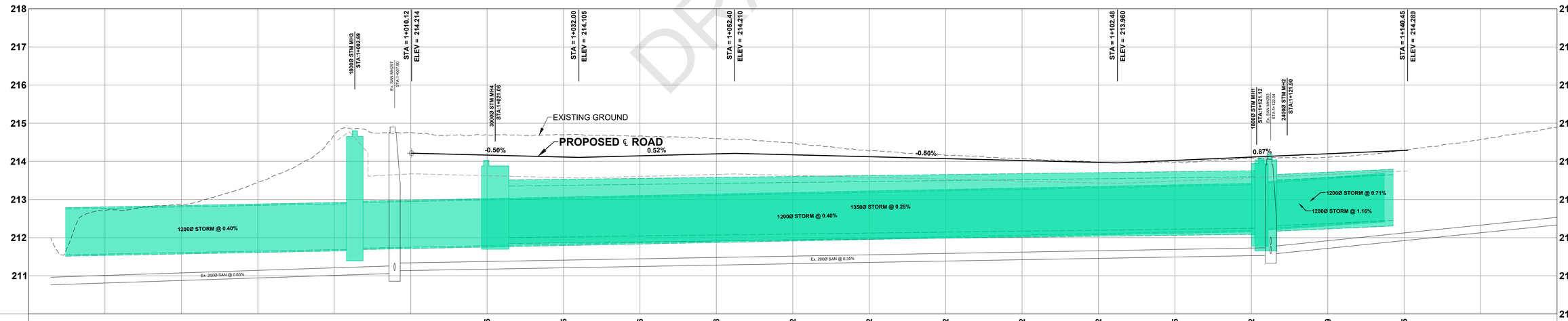
-Upgrade storm sewers from Water Street to MacDonald Street.
-Lower Mackenzie Street grading so that overland flow to the Alexander Drain will occur on Mackenzie Street and not through private property.

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PROBLEM AREA 6
MACKENZIE STREET





Station	0+970	0+980	0+990	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070	1+080	1+090	1+100	1+110	1+120	1+130	1+140	1+150
Existing Grade	212.715	212.881	213.448	214.700	214.759	214.699	214.696	214.665	214.597	214.484	214.275	214.162	214.074	213.981	213.971	214.088	214.108	214.290	214.573
Proposed Grade						214.165	214.115	214.146	214.198	214.172	214.122	214.072	214.022	213.972	214.025	214.112	214.199	214.285	

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PROPOSED STORM SEWER

EXISTING STORM SEWER

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Municipality of Lambton Shores

FOREST MASTER PLAN - EA
DeJersey Drain
MacKenzie P&P

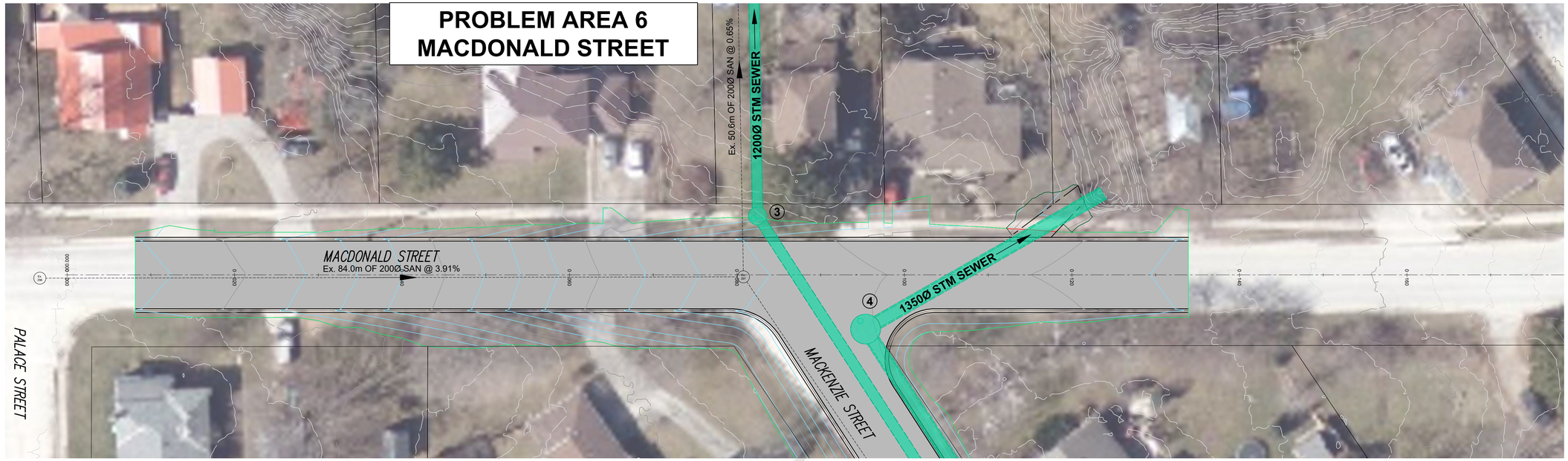
CONTRACT No.

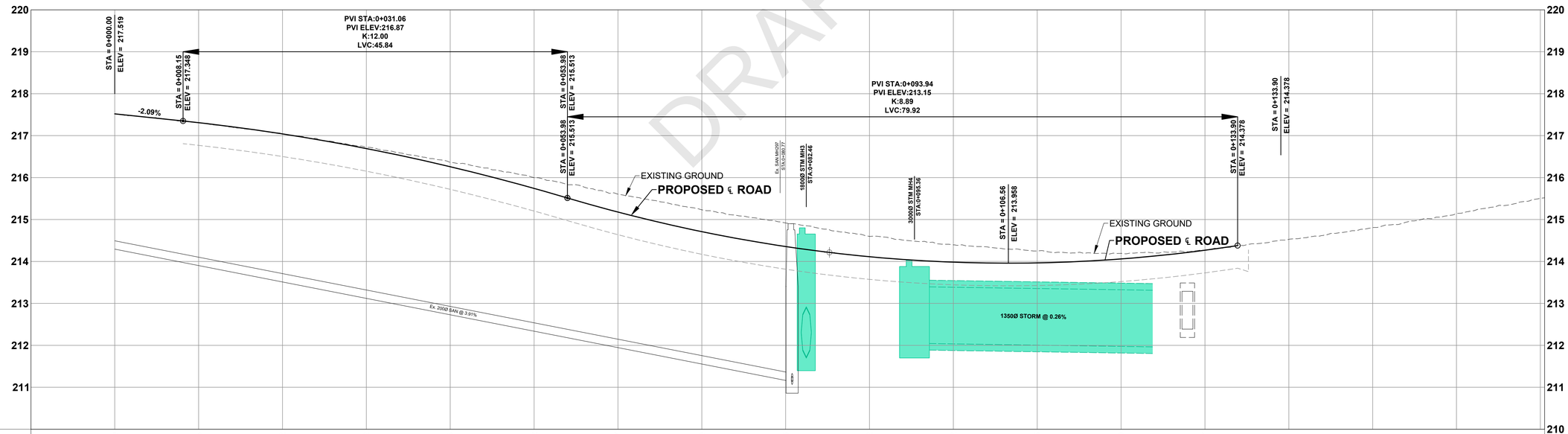
PROJECT No. 25033

SCALE
Horizontal : 1:250
Vertical : 1:50

DRAWING No. 1 of 2

PROBLEM AREA 6
MACDONALD STREET





Proposed Grade	217.519	217.308	217.042	216.692	216.258	215.742	215.177	214.710	214.355	214.112	213.982	213.965	214.060	214.267				
Existing Grade	217.519	217.309	217.049	216.719	216.363	215.996	215.605	215.231	214.917	214.596	214.397	214.250	214.193	214.265	214.527	214.807	215.140	215.502
Station	0+000	0+010	0+020	0+030	0+040	0+050	0+060	0+070	0+080	0+090	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170

PROPOSED STORM SEWER

EXISTING STORM SEWER

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FOREST MASTER PLAN - EA
DeJersey Drain
MacDonald P&P

CONTRACT No.

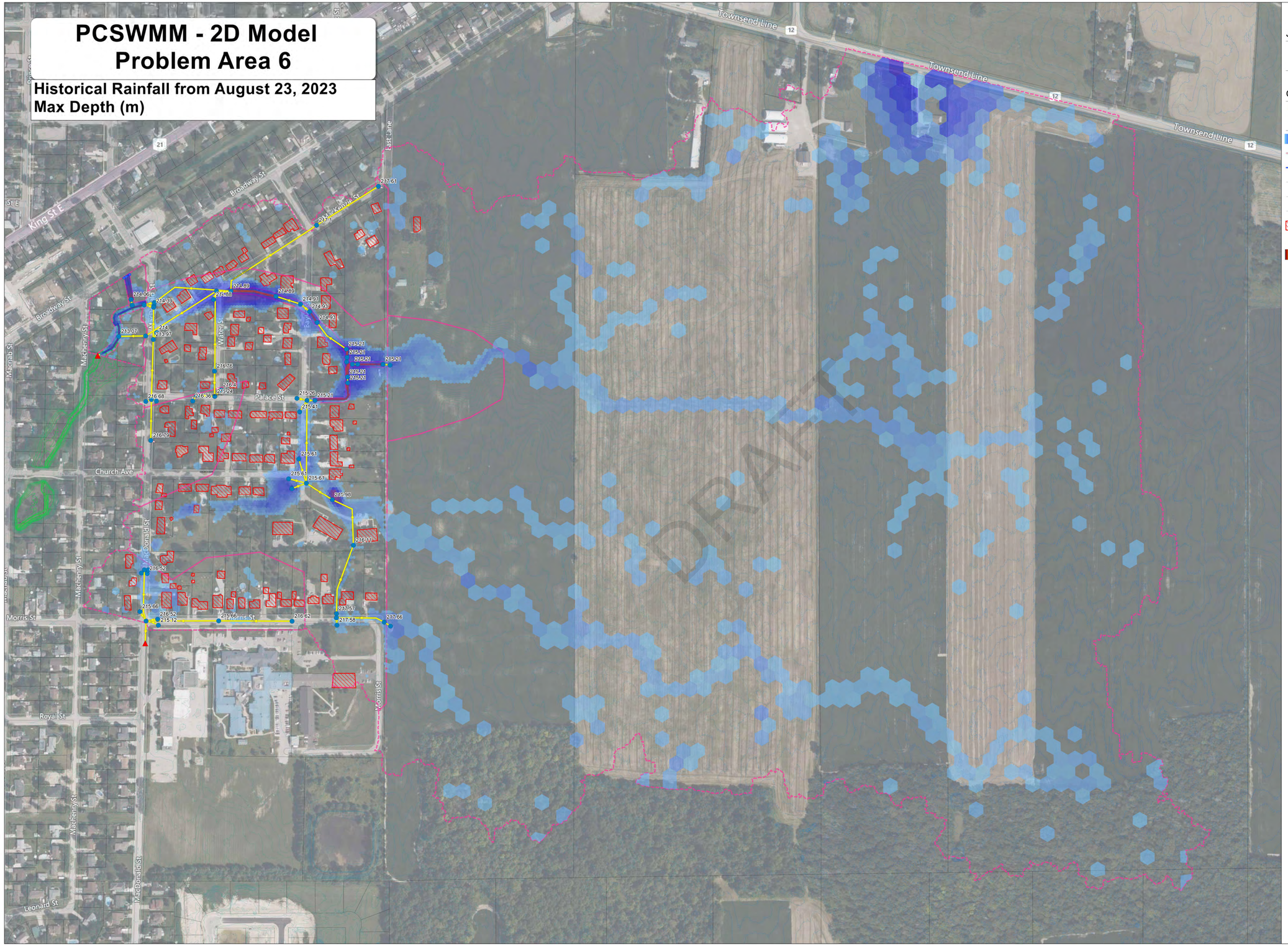
PROJECT No. 25033

SCALE
Horizontal : 1:250
Vertical : 1:50

DRAWING No. 2 of 2

PCSWMM - 2D Model
Problem Area 6

Historical Rainfall from August 23, 2023
Max Depth (m)



Legend

Junctions
- Visible
- 2D Inflow Nodes
- Outfalls

Conduits
- Visible
- 2D Inflow Links

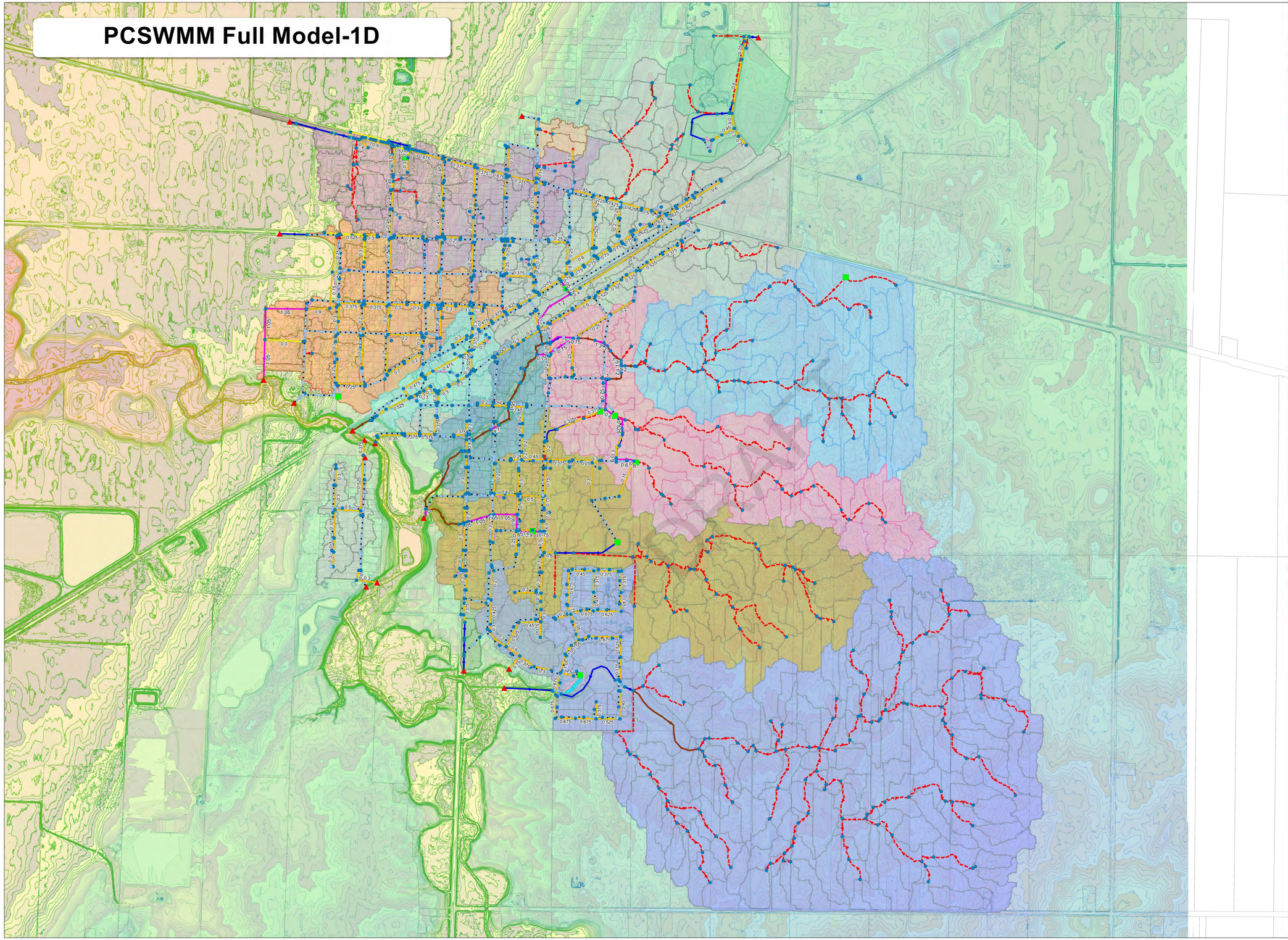
- 2D cells - Max. Depth (m)
- Orifices
- 2DInflows
- Area6_Hydrographs
- 2D_Alexander_CL
- 2D_Area6_Boundary_Out
- 2D Obstructions
- 25033-Parcel Background
- DM2022_25033_CSRS

N

250 m

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PCSWMM Full Model-1D



Legend

Junctions
- Visible
- No_Inv
- No_Rim_Inv
- Major

- Outfalls
- Storages

Conduits
- Visible
- Major_(Streets)
- Box
- Open
- Channel
- Drain
- Minor
- WDT
- Visible>300
- Proposed
- Major_(Proposed)

- Orifices
- Weirs
- Outlets

Subcatchments
- Visible
- Alexander Drain
- CN Trail
- Crossing Queen Street
- DeJersey Drain
- Fairgrounds Outlet
- Kernohan Drain
- Lougheed Drain
- John Coultis Drain
- McDonald Drain
- North Street Drain
- Park Lane
- Todd Drain
- Todd Drain 2
- Willemse Drain
- Unknown

- DM2022_25033_CSRS
- 25033-Parcel Background

N

0.5 km

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. 25033

MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST – STORMWATER MASTER PLAN

OPEN HOUSE NOTES

Details: Wednesday, June 3, 2026
Shores Recreation Centre – 7883 Amtelecom Parkway, Forest

Open House: 6:00 p.m. to 8:00 p.m.

In Attendance:

Nick Verhoeven, Director of Public Works	Municipality of Lambton Shores
Alex Williams, Infrastructure Manager	
Ryan Griffin, Drainage Superintendent	
Dale Erb, Project Engineer	B.M. Ross and Associates (BMROSS)
Simon Van Reenen, Project Engineer	
Becky Adams, Planning Ecologist	
Kelly Vader, Environmental Planner	

Members of the public: 30

6:00 pm – 8:00 pm - Open House Component

Public Arrival

- Members of the public signed in upon arrival.
- Poster boards were on display for the public to view *(attached)*.
- Representatives of BMROSS and the Municipality were available to answer questions from the public as they viewed the presentation material.

6:00 pm – 8:00 pm– Questions

Questions asked by members of the public as they viewed the material are summarized below.

Summary of Questions and Answers

Q. A resident was concerned that the proposed work in Problem Area 6 will not sufficiently address flooding in that area.
A. BMROSS staff acknowledged their concerns and further discussed potential alternatives.

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Q. A resident located in Problem Area 6 was concerned that a proposed clean-out of the Alexander Drain, proposed as part of the stormwater upgrades, would negatively impact their property. They were concerned about how equipment would access the drain, if trees would be removed and if their property size would change.
A. Their concerns were noted on a comment sheet for consideration.

Q. A resident stated that their property floods during intense rainfall events and that there is a lot of runoff from surrounding agricultural lands.
A. Their concerns were noted on a comment sheet for consideration.

Q. A business owner located near Main Street indicated that their parking lot floods following rainfall events. The problems started after a building was demolished and they are concerned the flooding could impact their business.
A. Their concerns were noted on a comment sheet for consideration.

Q. A resident that resides on Arthur Street stated that their property floods during rainfall events.
A. Their concerns were noted for consideration.

Q. A business owner indicated that the parking lot for their building has been flooding since 2023.
A. Their concerns were noted for consideration.

Should there be any errors or omissions to these meeting notes, please notify the undersigned.

Meeting Notes Prepared by
B. M. ROSS AND ASSOCIATES LIMITED

Kelly Vader, Environmental Planner

KV:hv
Distribution
Nick Verhoeven, Municipality of Lambton Shores
Alex Williams, Municipality of Lambton Shores
Ryan Griffin, Municipality of Lambton Shores
Dale Erb, BMROSS
Simon Van Reenen, BMROSS
Becky Adams, BMROSS
Kelly Vader, BMROSS

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MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST - STORMWATER MASTER PLAN

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WELCOME

PUBLIC OPEN HOUSE
June 3, 2026
6:00 P.M. to 8:00 P.M.

THE MUNICIPALITY OF
LAMBTON SHORES

CELEBRATING 75 YEARS 1951-2026
BMROSS
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MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

SUMMARY OF MASTER PLAN PROCESS:

- LONG RANGE PLANS DESIGNED TO INTEGRATE INFRASTRUCTURE REQUIREMENTS WITH ENVIRONMENTAL ASSESSMENT PLANNING PRINCIPLES
- EXAMINES A GROUP OF RELATED PROJECTS IN ORDER TO OUTLINE A FRAMEWORK FOR PLANNING FOR SUBSEQUENT PROJECTS AND/OR DEVELOPMENTS
- INVOLVES CONSULTATION WITH THE PUBLIC, REGULATORY AGENCIES, INDIGENOUS COMMUNITIES AND AFFECTED PROPERTY OWNERS

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SCOPE OF THIS STUDY:

- EXAMINE EXISTING STORMWATER DRAINAGE FEATURES AND FACILITIES IN FOREST AND INVENTORY COMPONENTS
- IDENTIFY GENERAL AREAS OF CONCERN WHICH NEED TO BE ADDRESSED
- DEVELOP RECOMMENDATIONS FOR IMPROVEMENTS WITHIN EXISTING DEVELOPED AREAS OF CONCERN
- CONSULT WITH RESIDENTS, INDIGENOUS COMMUNITIES AND REVIEW AGENCIES
- PROVIDE A PROPOSED PHASING PLAN FOR UPGRADES TO IMPLEMENT OVER A 20 - 25 YEAR TIMEFRAME
- PREPARE A REPORT DOCUMENTING THE MASTER PLAN PROCESS AND STUDY RECOMMENDATIONS

MASTER PLAN PROCESS

BACKGROUND REVIEW

EVALUATE PROBLEMS AND IDENTIFY ALTERNATIVE SOLUTIONS

IDENTIFY IMPACT OF ALTERNATIVE SOLUTIONS ON THE ENVIRONMENT, AND MITIGATING MEASURES

EVALUATE ALTERNATIVE SOLUTIONS: IDENTIFY RECOMMENDED SOLUTIONS

CONSULT WITH THE PUBLIC AND REVIEW AGENCIES TO IDENTIFY ANY ISSUES OR CONCERNS WITH DEFINED PROBLEMS AND ALTERNATIVE SOLUTIONS

ASSESS POTENTIAL NEGATIVE AFFECTS: DEVELOP MITIGATION AND IMPACT MANAGEMENT

SELECT PREFERRED STORMWATER DRAINAGE PLAN

PREPARE MASTER PLAN REPORT TO DOCUMENT STUDY FINDINGS

SUBMIT MASTER PLAN TO MUNICIPAL COUNCIL FOR REVIEW

PUBLISH NOTICE OF MASTER PLAN COMPLETION CIRCULATE THE DOCUMENT TO STAKEHOLDERS

IDENTIFY CLASS EA STUDIES NEEDED TO IMPLEMENT THE MASTER PLAN

PRESENT

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PROJECT STUDY AREA



MASTER PLAN TIMELINES

• Preliminary Background Review	March – May 2025
• Initial Notice Published	May 2025
• Identified Known Drainage Issues	May – June 2025
• Review Input from Initial Consultation	July – September 2025
• Identify Major Problem Areas	Fall 2025
• Drainage Inventory and Mapping	Fall & Winter 2026
• Preliminary Recommendations	Winter 2026
• Public Open House	June 2026
• Additional Public/Agency/FN Consultation	June – July 2026
• Additional Engineering Review	July 2026
• Finalize Master Plan	Summer 2026

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Data Collection

- To determine capacity of the existing water, sewage or stormwater systems, modeling of the network is required.
- To undertake the modeling, the existing infrastructure's size and location needs to be verified.
- Existing plans, as-built drawings and existing digital data is reviewed.
- Data gaps are identified and then field work is completed to fill the data gaps.
- A GPS Unit with accuracy to 1cm, is used in the field to collect pipe inverts.
- The data is recorded on an ArcGIS Online FieldMaps App.
- The GPS Unit records the pipe's location using x, y and z coordinates.

Technical staff collecting data



Remove maintenance hole lid



Pipe-Mic attachment to measure pipe dia.



Measuring pipe invert and diameter



Using Trimble Catalyst GPS to record lid

- Once the data is downloaded and all data gaps have been resolved, maps can be produced showing the location of existing infrastructure
- The information can also be used to model existing sewage, water and stormwater systems to determine their capacity
- Modeling data is used to identify areas needing to be upgraded or to determine appropriate sizing for future expansions.

Stormwater Modelling 1D

- Modelling was completed using PCSWMM with a Dual Drainage Network
- To determine the limits of a watershed, a Watershed Delineation Tool (WDT) from PCSWMM has been used, further subdivision and combinations was completed to accurately route stormwater
- Following a raindrop's flow path
    1. Subcatchments – Determine how much water makes it to the sewer and how much soaks into the ground using what is built on the ground, what type of soil, and how steep the surface is.
    2. First Drainage Network – Overland flow paths which include swales, ditches, roads and drainage easements
    3. Second Drainage Network – Underground storm sewer infrastructure. This is linked to the first drainage network by catchbasins and flow curves to ensure the balance of flow between the dual drainage network is accurate

Rainfall Data

- Historical rainfall is measured, and a statistical analysis is completed to generate Intensity-Duration-Frequency (IDF) curves for that area.
- Design Storm with a probability of occurring that year (1:2, 1:100, etc.) can be made.
- These Design Storms are used in the model to find and/or confirm problem areas and solutions
- Using Historical rainfall events and measured depths the model can be calibrated and checked for accuracy

Model components

- Subcatchments – Capture the rain in an area and route it to a junction to enter the model
- Junctions – Start and end of conduits (similar to maintenance holes)
- Conduits – Convey flow through the network (storm sewers, ditches, roads, etc.)
- Storages – Used to model areas that flood and will have standing water that backs up. (Stormwater management Ponds)
- Orifice, Outlets, & Wiers – Used to control flow through the model and connect the overland and underground drainage networks
- Outfalls – The outlet for the water for the model

1-Dimensional Modelling Limits

- 1 dimensional modeling is great for looking at areas with sewers and catchments that don't have larger surface water flooding.
- 2D modelling can be used to better model the limits of flooding in particular areas

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Stormwater Modelling 2D

- Modelling was completed using PCSWMM 2D modelling
- To determine the limits of a watershed, the limits of the subcatchments from the 1D model used
- Following a raindrop's flow path
    1. Rain falls on the model mesh and routes water through the mesh to the lowest point
    2. Low points backup and spill occurs to the next lowest point
    3. Repeat the step until the flow gets to the outlet

Rainfall Data

- Historical rainfall is measured, and a statistical analysis is completed to generate Intensity-Duration-Frequency (IDF) curves for that area.
- Design Storm with a probability of occurring that year (1:2, 1:100, etc.) can be made.
- These Design Storms are used in the model to find and/or confirm problem areas and solutions
- Using Historical rainfall events and measured depths the model can be calibrated and checked for accuracy

Model components

- Model Mesh Network made of nominally spaced junctions and conduits draped over the existing ground data for Overland Flow
- Connections to storm sewers and culverts
- Same sewer components as 1D models

Why 2D modeling

- For complex overland watersheds, it is the best way to model the limits of flooding and flow routes

2-Dimensional Modelling Limits

- Similar assumptions to 1D modelling are to made
- Very computationally expensive

    (It takes a very long time)

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THE MUNICIPALITY OF LAMBTON SHORES

COMMUNITY OF FOREST

Urban Boundary

Parcels

0 150 300
METRES

N

FULLER RD
BEECHWOOD AVE
ENTERPRISE DR
RAWLINGS RD
AMTELECOM PKY
GILPIN WAY
MAPLE ST
BRADLEY ST
PRINCE ST
JUNIPER PL
TOWNSEND LINE
KING ST E
ALBERT ST
GORE ST
ARTHUR ST
YORK ST
QUEEN ST W
QUEEN ST E
JAMES ST N
MAIN ST N
WELLINGTON ST W
WELLINGTON ST E
UNION ST
JEFFERSON ST W
ARGYLE ST
MACDONALD ST
BROADWAY ST
BAYLEY ST
MACKENZIE ST
ANN ST
OZIER ROW
EUREKA ST
ONTARIO ST
WASHINGTON ST N
KING ST W
MACHENRY ST
WATERS ST
PALACE ST
ROTARY WAY
VICTORIA ST
CLYDE ST
WATT ST
CHURCH ST
JAMES ST S
GEORGE ST
PARK LANE
MORRIS ST
ROYAL ST
FRANCES DR
STANLEY ST
MAIN ST S
LEONARD ST
MCKINLAY AVE
HENNESSY ST
PHIBBS ST
FIELD ST
MACNAB ST
FOREST RD
HICKORY CREEK LINE
DOUGLAS LINE
21
12

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OVERALL PLAN OF DRAINAGE CATCHMENTS

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- Urban Boundary
- Surface Water Channel
- Parcels

Drainage Catchments

- Alexander Drain
- CN Trail
- Crossing Queen
- DeJersey Drain
- Fairgrounds Outlet
- John Coultis Drain
- Kernohan Drain
- Lougheed Drain
- Main Hickory
- McDonald Drain
- North Street Drain
- Park Lane
- Queen Street
- Todd Drain
- Todd Drain 2
- Unknown Outlet
- Willemse

0 250 500
METRES

N

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PROBLEM AREA 1

N

0 25 50

METRES

ROYAL ST

WILLIAM ST

MAIN ST S

MACNAB ST

Cut curb to boulevard catch basin

No storm sewers on Royal/MacNab. Need further topo investigation regarding rear yard flow routes.

Further investigation with information from the SCRCA regarding flood levels

Private drain connection to Main Street was not reinstated

Private drain connection to Main Street was not reinstated. No storm sewers on MacNab Street.

1050

200

300

400

600

Problem Area 1 Properties

Existing Storm Sewer (mm dia.)

Existing Drain (mm dia.)

Surface Water Channel

Contour Line (0.5m Interval)

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PROBLEM AREA 2

0 25 50
METRES

N

Urban Boundary

Problem Area 2 Catchment

250 Proposed Improvements Conduit (mm dia.)

200 Existing Storm Sewer (mm dia.)

1050 Existing Drain (mm dia.)

Surface Water Channel

750
900
525
375
JEFFERSON ST W
1050
CROZIER ROW
300
ANN ST
300
200
EUREKA ST
ARGYLE ST
ONTARIO ST
250
CLYDE ST
CLYDE ST

DRAFT

Notes

Existing

-No storm sewers on Eureka Street for sagged catch basin at Crozier Row.

Proposed

-Add a catch basin lead from Eureka Street down Crozier Row to the existing 1050mm Fairground Drain to provide a piped outlet for this area.

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PROBLEM AREA 3

0 25 50
METRES

N

- Urban Boundary
- Problem Area 3 Catchment
- 250 Proposed Improvements Conduit (mm dia.)
- Proposed Catchbasin
- 200 Existing Storm Sewer (mm dia.)
- 1050 Existing Drain (mm dia.)
- Existing Storm Sewer To Be Upgraded

300
450
200 QUEEN ST W
400
WELLINGTON ST W
UNION ST
ARGYLE ST
EUREKA ST
JEFFERSON ST W
ONTARIO ST
ANN ST
200
300
525
250
750
900
1050
375

Notes

Existing

-No catch basin to collect flows down Wellington Street.
-Storm sewers on Ontario Street and Queen Street are undersized (200mm tiles).

Proposed

-Add twin inlet catch basins in the sag of Wellington Street.
-Upgrade the storm sewers on Ontario Street and Queen Street.

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PROBLEM AREA 4

0 50 100
METRES

N

Urban Boundary
Problem Area 4 Catchment
Proposed Improvements Conduit (mm dia.)
Surface Water Channel

See Additional Poster Boards

900

450

TOWNSEND LINE
JUNIPER PL
UNION ST
QUEEN ST W
WELLINGTON ST W
WASHINGTON ST N
JAMES ST N
JEFFERSON ST W
MAIN ST N
JEFFERSON ST E
PRINCE ST
BRADLEY ST
MAPLE ST
BEECHWOOD AVE
QUEEN ST E
ALBERT ST
WELLINGTON ST E
GORE ST
ARTHUR ST
KING ST E
BROADWAY ST

Notes

Existing
-Large catchment surcharges the sewer on Townsend Line.
-The grade change coming from James Street to Juniper Place causes extra energy to backup into Juniper Place.
-Overland flow on Townsend Line (south side) directed into Juniper Place.
-Juniper Place floods with 500mm depth before overland relief to Townsend Line.

Proposed
-Add a relief open ditch and sewer along the north side of Townsend Line that will activate before the catch basin on Juniper Place.
-Add an overland flow block to prevent Townsend Line flows from flowing into Juniper Place.
-Additional field work to determine the best option.

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PROBLEM AREA 5

Urban Boundary

Problem Area 5 Catchment

Proposed Willemse Drain Extension

Existing Willemse Drain

0 25 50

METRES

N

300

BEECHWOOD AVE

MAPLE ST

BRADLEY ST

PRINCE ST

ALBERT ST

TOWNSEND LINE

GORE ST

ARTHUR ST

DRAFT

Notes

Existing

-Catch basins on Albert Street and Maple Street have no piped outlet.

Proposed

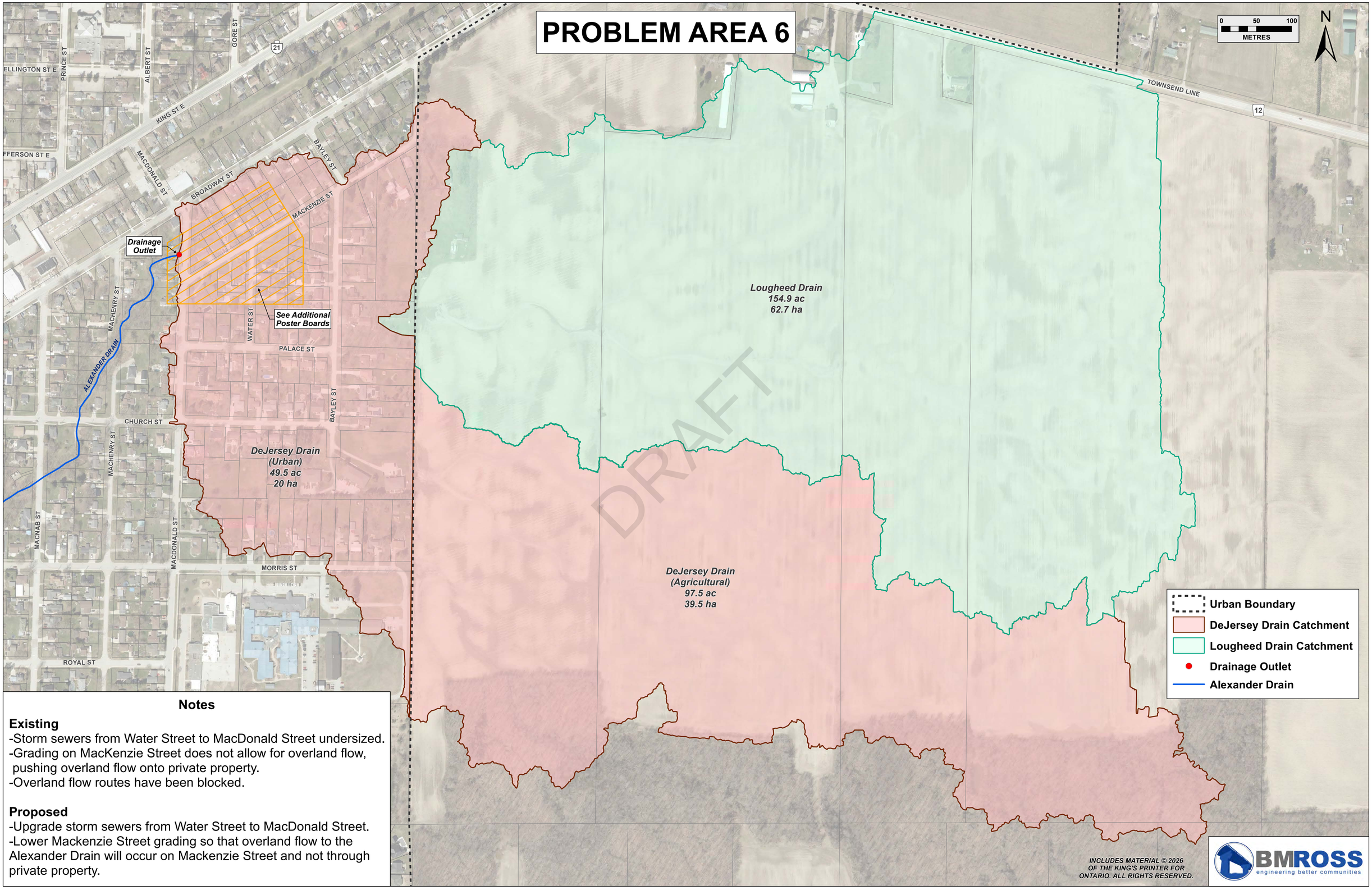
-Extend the Willemse Drain onto Albert Street and/or Maple Street.

-Limits of extension to be determined in detailed design.

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PROBLEM AREA 6



Notes

Existing

-Storm sewers from Water Street to MacDonald Street undersized.
-Grading on MacKenzie Street does not allow for overland flow, pushing overland flow onto private property.
-Overland flow routes have been blocked.

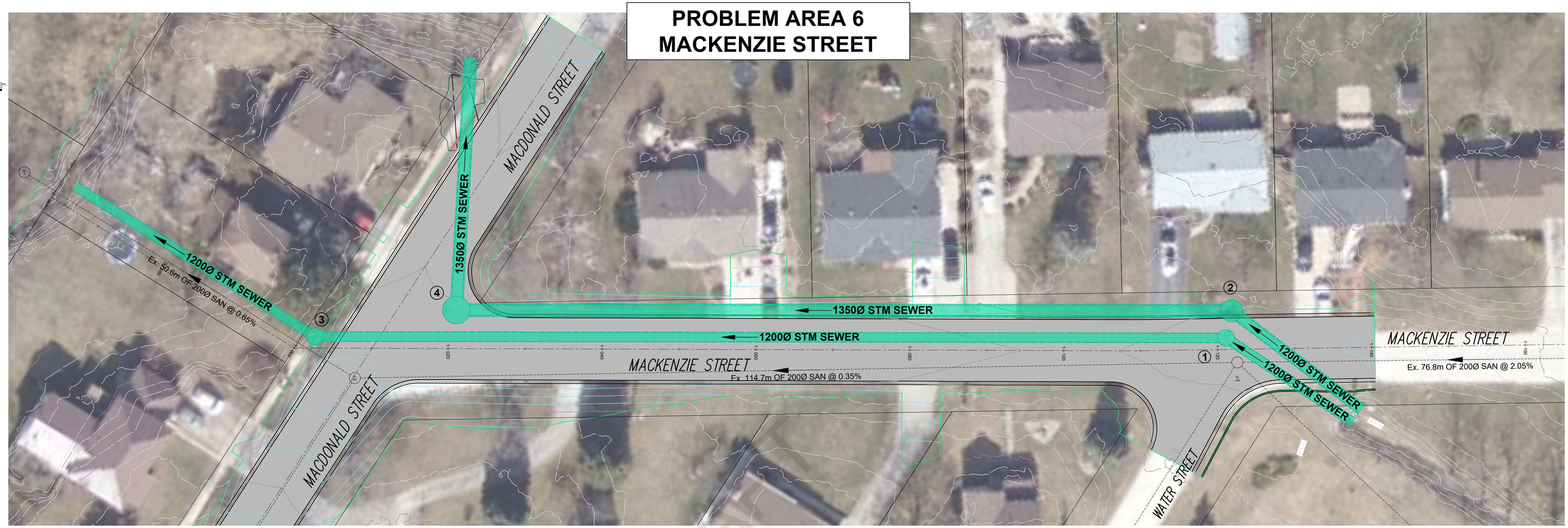
Proposed

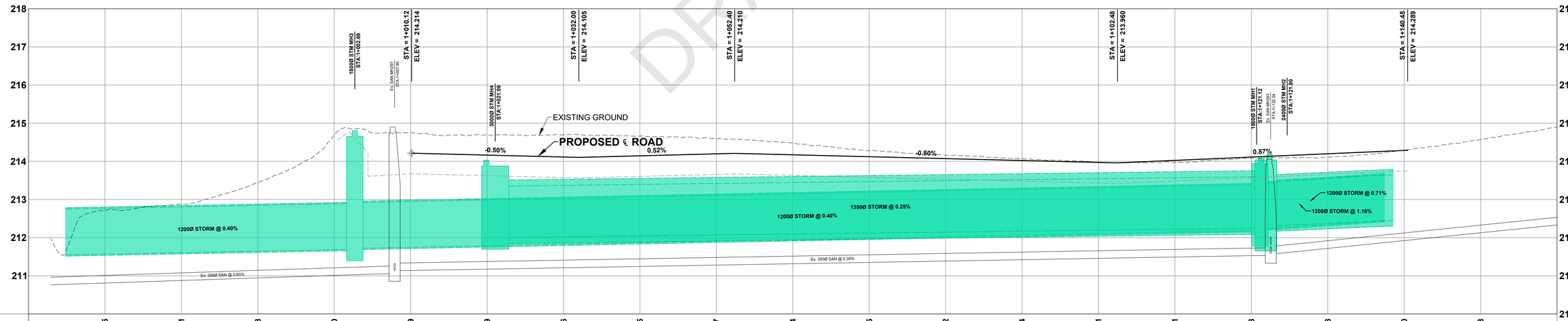
-Upgrade storm sewers from Water Street to MacDonald Street.
-Lower Mackenzie Street grading so that overland flow to the Alexander Drain will occur on Mackenzie Street and not through private property.

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PROBLEM AREA 6
MACKENZIE STREET





Proposed Grade	212.715	212.881	213.448	214.700	214.759	214.699	214.696	214.665	214.597	214.484	214.275	214.162	214.074	213.981	213.971	214.088	214.108	214.290	214.573
Existing Grade	212.715	212.881	213.448	214.700	214.759	214.699	214.696	214.665	214.597	214.484	214.275	214.162	214.074	213.981	213.971	214.088	214.108	214.290	214.573
Station	0+970	0+980	0+990	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070	1+080	1+090	1+100	1+110	1+120	1+130	1+140	1+150

DRAFT

PROPOSED STORM SEWER

EXISTING STORM SEWER

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Goderich | Kincardine | Mount Forest | Sarnia

Municipality of Lambton Shores

FOREST MASTER PLAN - EA
DeJersey Drain
MacKenzie P&P

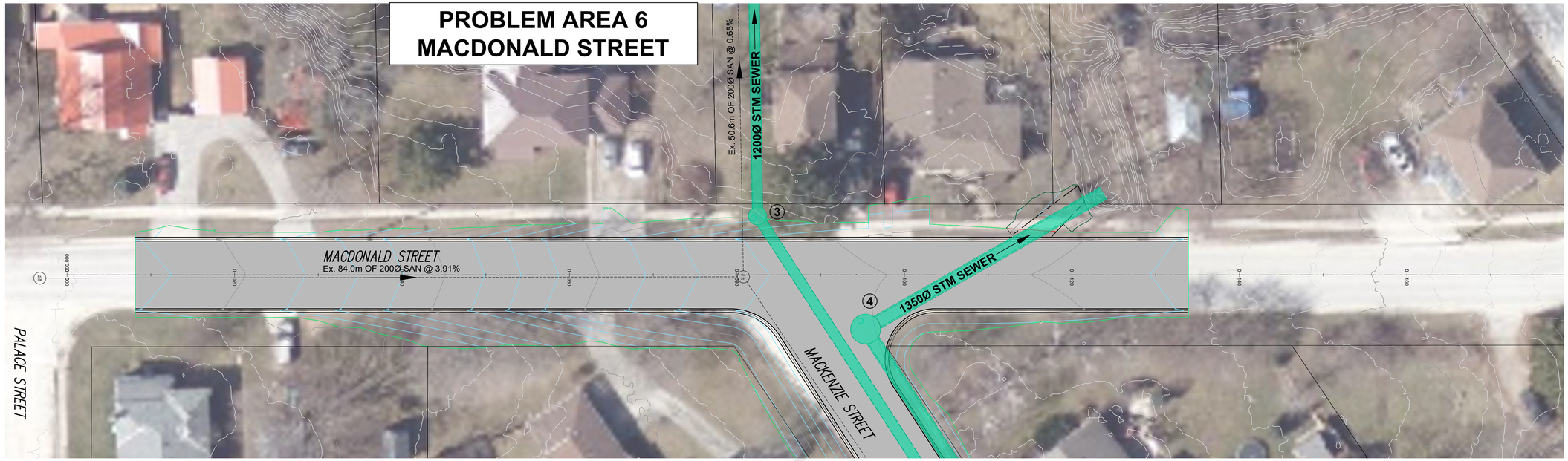
CONTRACT No.

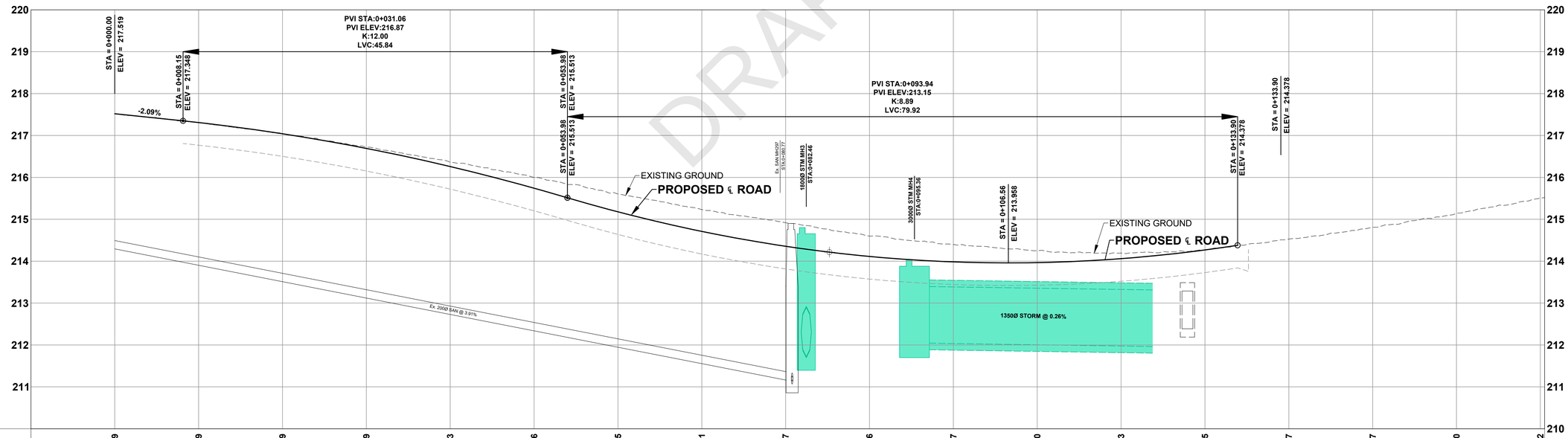
PROJECT No. 25033

SCALE
Horizontal : 1:250
Vertical : 1:50

DRAWING No. 1 of 2

PROBLEM AREA 6
MACDONALD STREET





Proposed Grade	217.519	217.309	217.049	216.719	216.363	215.996	215.605	215.231	214.917	214.596	214.397	214.250	214.193	214.265	214.527	214.807	215.140	215.502
Existing Grade	217.519	217.309	217.049	216.719	216.363	215.996	215.605	215.231	214.917	214.596	214.397	214.250	214.193	214.265	214.527	214.807	215.140	215.502
Station	0+000	0+010	0+020	0+030	0+040	0+050	0+060	0+070	0+080	0+090	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170

PROPOSED STORM SEWER

EXISTING STORM SEWER

DRAFT

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Goderich | Kincardine | Mount Forest | Sarnia

Municipality of Lambton Shores
FOREST MASTER PLAN - EA
DeJersey Drain
MacDonald P&P

CONTRACT No.

PROJECT No. 25033

SCALE
Horizontal : 1:250
Vertical : 1:50

DRAWING No. 2 of 2

PROBLEM AREA 4
Juniper Place

N

PROPOSED MAINTENANCE HOLE

24.5m OF 900Ø STM @ 0.50%

149.8m OF 900Ø STM @ 0.25%

TOWNSEND LINE (COUNTY RD. 12)

Ex. 16.5m OF 1200Ø STM @ 0.44%

Ex. 9.5m OF 1050Ø STM @ 0.66%

Ex. 118.0m OF 900Ø STM @ 0.26%

PROPOSED DITCH INLET CATCH BASIN (DICB)

ENTRANCE FEATURE TO REDIRECT OVERLAND FLOW

TOWNSEND LINE SUPER-ELEVATION OR RAISED SIDEWALK CROSSING

PROPOSED OPEN DITCH

2.5:1

PROPOSED DITCH INLET CATCH BASIN (DICB)

TOWNSEND LINE (COUNTY RD. 12)

15.5m OF 600Ø STM @ 2.00%

Ex. 10.4m OF 675Ø STM @ 0.12%

Ex. 56.4m OF 675Ø STM @ 0.70%

UNION STREET

Ex. 106.3m OF 675Ø STM @ 0.39%

JUNIPER PLACE

Ex. 65.4m OF 300Ø STM @ 0.31%

208.793

DRAFT

PROPOSED STORM SEWER

EXISTING STORM SEWER

SLOPED DITCH

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Goderich | Kincardine | Mount Forest | Sarnia

Municipality of Lambton Shores

FOREST MASTER PLAN - EA

Juniper Place
Overall Plan

CONTRACT No.

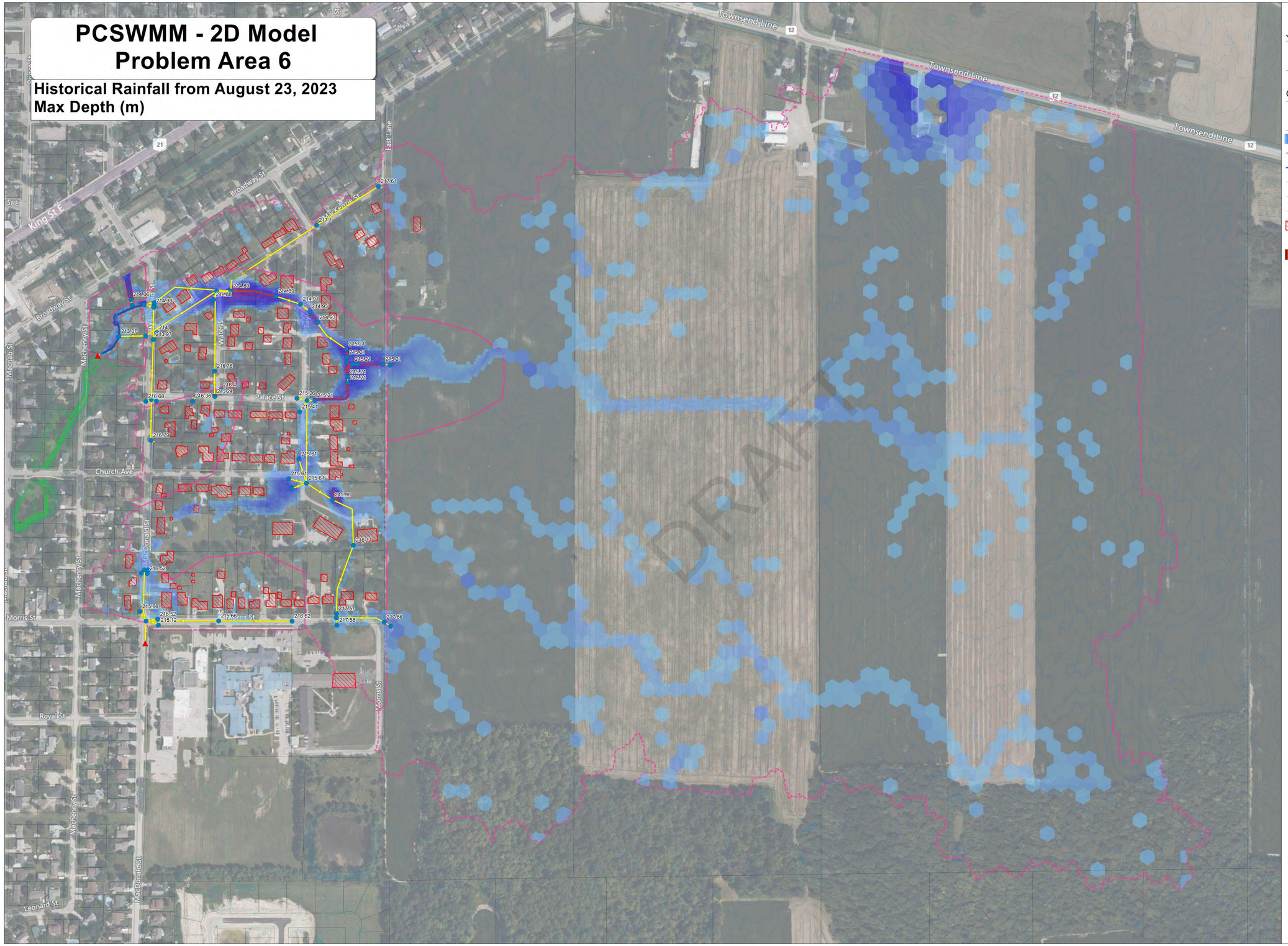
PROJECT No. 25033

SCALE 1:300

DRAWING No. 1

PCSWMM - 2D Model
Problem Area 6

Historical Rainfall from August 23, 2023
Max Depth (m)



Legend

Junctions
- Visible
- 2D Inflow Nodes
- Outfalls

Conduits
- Visible
- 2D Inflow Links

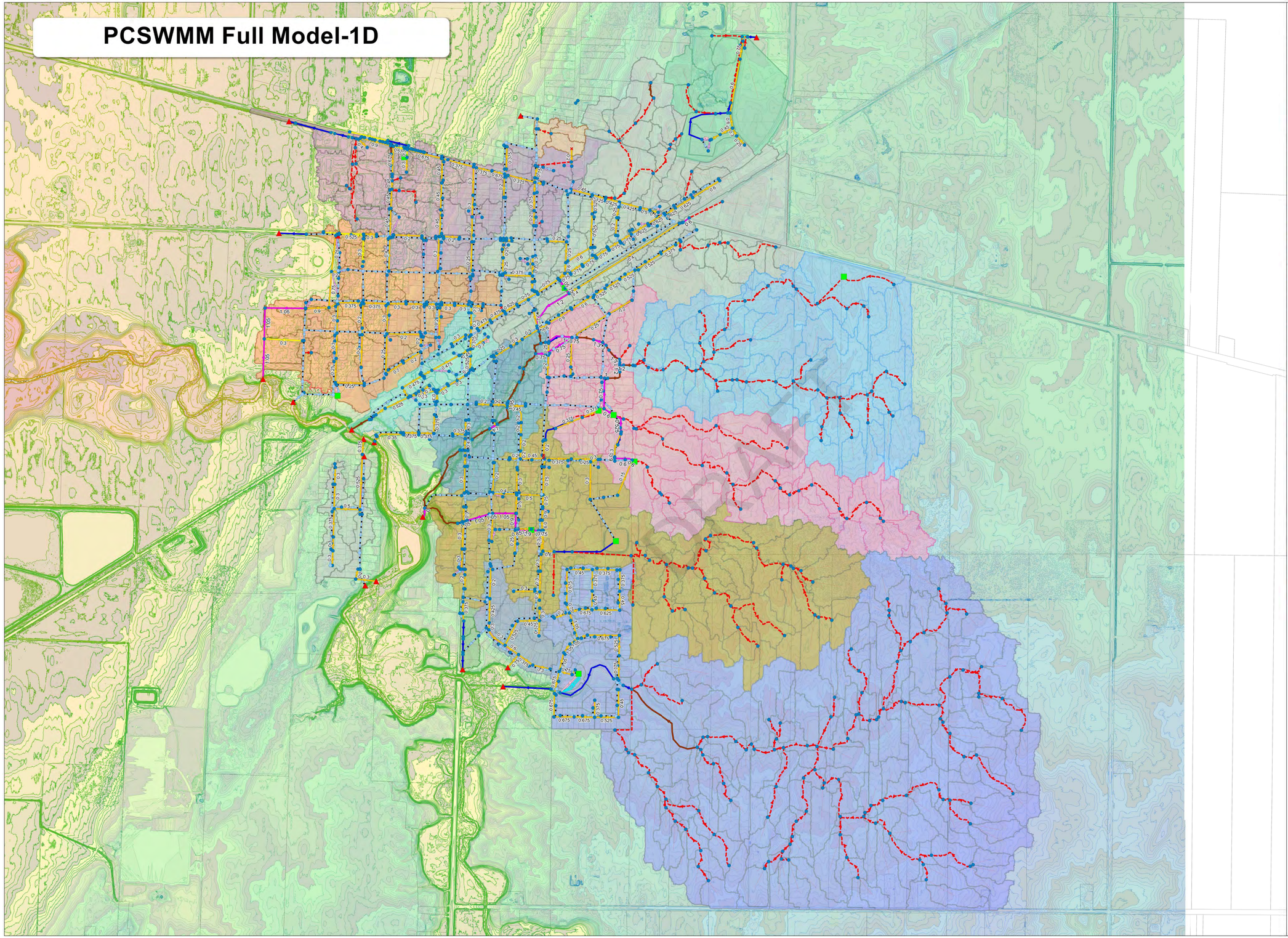
- 2D cells - Max. Depth (m)
- Orifices
- 2DInflows
- Area6_Hydrographs
- 2D_Alexander_CL
- 2D_Area6_Boundary_Out
- 2D Obstructions
- 25033-Parcel Background
- DM2022_25033_CSRS

N

250 m

DRAFT

PCSWMM Full Model-1D



Legend

Junctions
- Visible
- No_Inv
- No_Rim_Inv
- Major

- Outfalls
- Storages

Conduits
- Visible
- Major_(Streets)
- Box
- Open
- Channel
- Drain
- Minor
- WDT
- Visible>300
- Proposed
- Major_(Proposed)

- Orifices
- Weirs
- Outlets

Subcatchments
- Visible
- Alexander Drain
- CN Trail
- Crossing Queen Street
- DeJersey Drain
- Fairgrounds Outlet
- Kernohan Drain
- Lougheed Drain
- John Coultis Drain
- McDonald Drain
- North Street Drain
- Park Lane
- Todd Drain
- Todd Drain 2
- Willemse Drain
- Unknown

- DM2022_25033_CSRS
- 25033-Parcel Background

N

0.5 km

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. 25033

VIA EMAIL ONLY

May 22, 2026

Review Agency
(see attached list)

RE: Forest Stormwater Master Plan

The Municipality of Lambton Shores initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Community of Forest in May 2025. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. Preliminary recommendations have now been prepared for problem areas identified during Master Plan investigations. Input from residents, review agencies and Indigenous Communities, is being sought prior to finalizing the preferred approach.

The Stormwater Master Plan is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (Class EA) which is an approved process under the Environmental Assessment Act. Master Plan projects incorporate Phases 1 & 2 of the Class EA process and also include consultation with the general public, government review agencies First Nation and Métis communities, and affected property owners.

Your organization was previously contacted about this project, and we are soliciting your input on the preliminary project recommendations. A **Public Open House** has been scheduled to advise residents of the current status of the project and to receive additional input from interested parties. Details of the Open House are as follows:

Date: **Wednesday, June 3, 2026**
Time: **6:00 P.M. to 8:00 P.M.**
Place: **Shores Recreation Centre (7883 Amtelecom Parkway, Forest)**

Hard copies of the presentation material could be provided by mail or email if requested.

DRAFT

Please forward any comments on the project by **July 15, 2026**. If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 1-888-524-2641.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:sd
Encl.
cc. Alex Williams, Infrastructure Manager, Municipality of Lambton Shores

DRAFT

MUNICIPALITY OF LAMBTON SHORES

STORMWATER MASTER PLAN STUDY
(COMMUNITY OF FOREST)
PROJECT: 25033

REVIEW AGENCY CIRCULATION LIST – MAY 2026

REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment, Conservation & Parks Monika Macki, Regional Environmental Planner – Southwest Region Email: monika.macki@ontario.ca	Mandatory Contact
Ministry of Natural Resources Email: SR.Planning@ontario.ca Christa Rigney, Email: christa.rigney@ontario.ca	Potential Impact on Natural Features
Ministry of Citizenship and Multiculturalism Email: Karla Barboza, Team Lead - Heritage karla.barboza@ontario.ca Amanda Antwi-Nsiah, Heritage Planner Amanda.Antwi-Nsiah@ontario.ca	Potential Impact to Cultural Heritage Features
Township of Warwick Kyle Chisholm, Public Works Manager kchisholm@warwicktownship.ca	Adjacent Municipality
Town of Plympton-Wyoming Paul daSilva, Director of Public Works PdaSilva@plympton-wyoming.ca	Adjacent Municipality
Municipality of Lambton Shores Alex Williams, Public Works Email: awilliams@lambtonshores.ca	Proponent
County of Lambton Corrine Nauta, Manager, Development Services corrine.nauta@county-lambton.on.ca	- Upper tier Municipality - General Information - Implications for Long-Term Development

DRAFT

St. Clair Conservation Authority Kelsey Oatman, Planning and Regulations Clerk koatman@scrca.on.ca	Potential Impact on Natural Features

DRAFT

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p. (519) 524-2641 www.bmross.net

File No. 25033

VIA EMAIL ONLY

May 22, 2026

Aboriginal Community
(see attached list)

DRAFT

RE: Forest Stormwater Master Plan

The Municipality of Lambton Shores initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for established and future development areas in the Community of Forest in May 2025. The stormwater review is being undertaken in order to inventory and evaluate existing drainage infrastructure within the community and to investigate the most cost effective and efficient manner to provide improved drainage infrastructure. Preliminary recommendations have now been prepared for problem areas identified during Master Plan investigations. Input from residents, review agencies and Indigenous Communities, is being sought prior to finalizing the preferred approach.

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Your Community was previously contacted about this project and we are seeking your input on the preliminary project recommendations. A **Public Open House** has been scheduled to advise residents of the current status of the project and to receive additional input from interested parties. Details of the Open House are as follows:

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Place: **Shores Recreation Centre (7883 Amtelecom Parkway, Forest)**

Hard copies of the presentation material could be provided by mail or email if requested.

Please forward any comments on the project by **July 15, 2026**. If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 1-888-524-2641.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
cc. Alex Williams, Infrastructure Manager, Municipality of Lambton Shores

DRAFT

MUNICIPALITY OF LAMBTON SHORES
FOREST STORMWATER MASTERPLAN
BMROSS FILE #25033

ABORIGINAL COMMUNITIES CIRCULATION LIST – May 2026

Aboriginal Community	Contact Method
Chief Janelle Nahmahbin Aamjiwnaang First Nation Aamjiwnaang Administration Office 978 Tashmoo Ave. Sarnia, ON N7T 7H5	Lynn Rosales, Environmental Coordinator: 519-336-8410 ext 296 lrosales@aamjiwnaang.ca Alexandra Beveridge, Environmental Worker: ext 245 Chief Contact: chief.plain@aamjiwnaang.ca
Chief Joe Miskokomon Chippewas of the Thames First Nation 320 Chippewa Road, Muncey, ON N0L 1Y0	Submit through NationsConnect Erna Leclair, Consultation Analyst, email: consultation@cottfn.com Chief Contact: joemiskokomon@cottfn.com
Chief Todd Cornelius Oneida Nation of the Thames 2212 Elm Ave Southwold, ON N0L 2G0	Jenelle Cornelius, Environment and Consultation Coordinator, environment@oneida.on.ca Chief Contact: todd.cornelius@oneida.on.ca
Chief Roger Thomas Munsee-Delaware Nation 289 Jubilee Road Muncey, ON N0L 1Y0	Stacey Phillips: consultation@munsee.ca Chief Contact: chief@munsee.ca
Chief Leela Thomas Bkejwanong Territory Walpole Island First Nation 117 Tahgahoning Road Wallaceburg, ON N8A 4K9	Consultation Manager, Dean Jacobs: dean.jacobs@wifn.org Chief Contact: leela.thomas@wifn.org
Métis Nation of Ontario Suite 1100 – 66 Slater Street Ottawa, ON K1P 5H1	Consultation email: consultations@metisnation.org
Chief Justin Logan	Chief Contact:

DRAFT

Delaware Nation (Moravian of the Thames) 14760 School House Line, R.R. #3 Thamesville, ON N0P2K0	justin.logan@delawarenation.on.ca
Chief Kimberly Bressette Chippewas of Kettle and Stony Point First Nation 6247 Indian Lane Kettle & Stony Point FN, ON N0N 1J1	Jana George, email: consultation@kettlepoint.org Chief Contact: kimberly.bressette@kettlepoint.org

Notices e-mailed on

Notice placed in NationsConnect on

DRAFT

Becky Adams

From: Antwi-Nsiah, Amanda (MCM) <Amanda.Antwi-Nsiah@ontario.ca>
Sent: June 4, 2026 5:19 PM
To: Becky Adams
Cc: kvader@bmross.net; Barboza, Karla (She/Her) (MCM)
Subject: MCM Response - 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan [MCM File: 0023594]

Categories: Archived

Hello Becky,

Thank you for sending the poster boards from the Public Open House to MCM and for confirming the Master Plan Approach you will be using for this project. We look forward to reviewing the EA report.

Best regards,

Amanda Antwi-Nsiah
Heritage Planner | Heritage Operations Branch | Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
437-212-5945 | Amanda.Antwi-Nsiah@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

---

From: Becky Adams <badams@bmross.net>
Sent: June 4, 2026 1:45 PM
To: Antwi-Nsiah, Amanda (MCM) <Amanda.Antwi-Nsiah@ontario.ca>
Subject: RE: MCM Response - 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan [MCM File: 0023594]

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Amanda,

Attached are additional poster boards.

Thanks,
Becky

From: Becky Adams <badams@bmross.net>
Sent: June 4, 2026 1:41 PM
To: Antwi-Nsiah, Amanda (MCM) <Amanda.Antwi-Nsiah@ontario.ca>; kvader@bmross.net
Cc: Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: RE: MCM Response - 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan [MCM File: 0023594]

Hi Amanda,

DRAFT

Attached are the poster boards with project information that were displayed for the public to view at the meeting.

We plan to use Master Plan Approach #2 for this project.

Thanks,

Becky Adams, B.Sc., EP
Planning Ecologist
B. M. Ross and Associates Limited
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4

Ph: (519) 524-2641
Cell: (519) 441-7633

badams@bmross.net
https://link.edgepilot.com/s/45c990d0/lEb0-0p_gky3TXtVYk5jGA?u=http://www.bmross.net/

From: Antwi-Nsiah, Amanda (MCM) <Amanda.Antwi-Nsiah@ontario.ca>
Sent: June 2, 2026 12:00 PM
To: kvader@bmross.net
Cc: Becky Adams <badams@bmross.net>; Barboza, Karla (She/Her) (MCM) <Karla.Barboza@ontario.ca>
Subject: MCM Response - 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan [MCM File: 0023594]

Hello Kelly Vader,

Thank you for sending the Notice of Public Open House to the Ministry of Citizenship and Multiculturalism (MCM). Would you be able to send a copy of the presentation materials to MCM? Could you also please confirm which Master Plan Approach the Forest Stormwater Master Plan will be following? Will it be following Approach #1, #2, or #3 as outlined in Section A.2.7 of the Municipal Class EA document? Thank you.

Best regards,

Amanda Antwi-Nsiah
Heritage Planner | Heritage Operations Branch | Citizenship, Inclusion and Heritage Division
Ministry of Citizenship and Multiculturalism | Ontario Public Service
437-212-5945 | Amanda.Antwi-Nsiah@ontario.ca

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---

From: Becky Adams <badams@bmross.net>
Sent: May 22, 2026 4:18 PM
To: Antwi-Nsiah, Amanda (MCM) <Amanda.Antwi-Nsiah@ontario.ca>
Subject: 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

To Ms. Antwi-Nsiah,

The Municipality of Lambton Shores is undertaking a Stormwater Master Plan in the Community of Forest.

DRAFT

Please review the attached document which includes details regarding a public open house.

If you have any questions or comments, please contact Kelly Vader, Environmental Planner at kvader@bmross.net.

Kind regards,

Becky Adams, B.Sc., EP
Planning Ecologist
B. M. Ross and Associates Limited
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4

Ph: (519) 524-2641
Cell: (519) 441-7633

badams@bmross.net
https://link.edgepilot.com/s/45c990d0/lEb0-0p_gky3TXtVYk5jGA?u=http://www.bmross.net/

DRAFT

Becky Adams

From: Rigney, Christa (MNR) <Christa.Rigney@ontario.ca>
Sent: June 5, 2026 4:59 PM
To: Kelly Vader
Cc: Becky Adams
Subject: RE: 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan

Categories: Archived

Hi Kelly,
We received the notice of open house for the Forest Stormwater Master Plan. Could you please forward us a copy of the materials for consideration as we have been unable to find them online.
Thank you,
Christa

_____
Christa Rigney, MSc (she/her)
Regional Planner | Southern Region, Land Use Planning and Strategic Issues Section
Ministry of Natural Resources (MNR)
705-465-6277 | christa.rigney@ontario.ca

Ontario

Please note: As part of providing accessible customer service, if you have any accommodation needs, require communication supports, or alternate formats please let me know.

From: Becky Adams <badams@bmross.net>
Sent: May 22, 2026 2:35 PM
To: Rigney, Christa (MNR) <Christa.Rigney@ontario.ca>; Southern Region Planning Inbox (MNR) <SR.Planning@ontario.ca>
Subject: 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

To Ms. Rigney,

The Municipality of Lambton Shores is undertaking a Stormwater Master Plan in the Community of Forest.

Please review the attached document which includes details regarding a public open house.

If you have any questions or comments, please contact Kelly Vader, Environmental Planner at kvader@bmross.net.

Kind regards,

Becky Adams, B.Sc., EP
Planning Ecologist
B. M. Ross and Associates Limited
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4

DRAFT

Ph: (519) 524-2641
Cell: (519) 441-7633

badams@bmross.net
https://link.edgepilot.com/s/45c990d0/lEb0-0p_gky3TXtVYk5jGA?u=http://www.bmross.net/

DRAFT

Kelly Vader

From: Kelly Vader <kvader@bmross.net>
Sent: September 28, 2026 4:21 PM
To: Kelly Vader
Subject: FW: 25033 - Municipality of Lambton Shores - Forest Stormwater Master Plan

---

From : Jana George [Jana.George@threefires.com]
To : Becky Adams [badams@bmross.net]
Cc : Jessica Wakefield [Jessica.Wakefield@threefires.com], Dennica Monague-Sands [Dennica.Monague-Sands@threefires.com], Consultation [consultation@kettlepoint.org], Chief Kimberly Bressette [kimberly.bressette@kettlepoint.org]
Date : Friday, September 25 2026 12:02:29

Good afternoon Becky,

Thank you for following up. Our team has completed our review of the Forest Stormwater Master Plan and have a few questions that we are hoping you can help to provide additional information on.

- 1.4.3 Consideration of Climate Change: Can you provide more details on how the impacts associated with climate change are being considered?
- Table 3.14 - Environmental Effects Analysis: Are there more details that can be provided on what sediment and erosion control measures will be implemented?

Additionally, we would appreciate being notified and provided an opportunity to review any archaeological assessments that are completed for any of the proposed solutions for the problem areas. Even if only a Stage 1 or Stage 2 assessment is completed, we would like to review the reports. If Stage 2 assessments are completed, we would also like to have a community monitor participate. Given the close proximity to our community, it is important that we remain involved in any archaeological assessments that are completed in this area.

We look forward to hearing from you.

Thank you,

Three Fires GROUP

Jana George
Consultation & Monitoring Coordinator
Email: jana.george@threefires.com

A-9119 W Ipperwash Rd
Kettle & Stony Point First Nation
Ontario N0N 1J1
https://link.edgepilot.com/x/hXJfg_-i485ZSnR7bKy8zp4?u=http://www.threefires.com/

From: Becky Adams <badams@bmross.net>
Sent: September 24, 2026 2:31 PM

DRAFT

Kelly Vader

From: Erna Leclair via NationsConnect <support@nationsconnect.ca>
Sent: September 25, 2026 3:34 PM
To: kvader@bmross.net
Subject: NationsConnect: Decision regarding consultation: Community of Forest Stormwater Master Plan regarding Community of Forest Stormwater Master Plan

Categories: Archived

A reply has been sent from Erna Leclair and you have been involved in the conversation or were indicated as a person to notify.

Subject: Decision regarding consultation: Community of Forest Stormwater Master Plan

Body:

Hello Becky,

Miigwech for providing Chippewas of the Thames First Nation (COTTFN) with the opportunity to review the Draft Stormwater Master Plan for the Town of Forest.

The Draft Master Plan identifies a number of stormwater infrastructure improvements throughout Forest, including upgrades to municipal drains and storm sewers and the creation of additional stormwater storage. Several of the recommended projects will ultimately increase stormwater drainage being conveyed toward Hickory Creek. Stormwater runoff, if improperly designed, can impact Aboriginal and Treaty rights by degrading water quality, altering aquatic habitat and affecting fish, plants, and other resources relied upon for the exercise of those rights. Because of this, COTTFN previously identified this project as being of moderate concern.

COTTFN provides the following comments and recommendations without prejudice to the Aboriginal and Treaty rights of COTTFN or to any future positions COTTFN may take regarding this project:

Water Quality and Quantity: COTTFN requests that detailed design consider both water quantity and water quality impacts associated with increased stormwater conveyance. Where projects increase flows to the Alexander Drain, Hickory Creek or other receiving watercourses, the Municipality should ensure that the works do not contribute to increased erosion, degradation of aquatic habitat or deterioration of water quality. COTTFN would like the Municipality to incorporate natural Low Impact Development (LID) measures wherever feasible as projects move into detailed design. Measures such as vegetated swales, infiltration features and other naturalized approaches could help reduce runoff and promote infiltration, while also presenting an opportunity to enhance and restore riparian habitat along drains and creeks within Forest. This would provide broader ecological and water quality benefits rather than focusing solely on stormwater conveyance.

Tree Removal and Replacement: Where tree or shrub removal is required to accommodate stormwater infrastructure, removal should be minimized. COTTFN requests that trees

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removed as a result of the proposed works be replaced at a minimum 3:1 ratio, using appropriate native species wherever possible. The Draft Master Plan identifies that some tree and shrub removal may be required, particularly in association with drainage improvements near the Alexander Municipal Drain.

Archaeology and AFL Participation: The Draft Master Plan commits to completing Stage 1–2 Archaeological Assessments for previously undisturbed areas prior to construction. COTTFN reiterates that all projects involving archaeological assessment or ground disturbance with archaeological potential must be brought forward to COTTFN, including projects classified as exempt from further Class EA requirements. Prior to archaeological fieldwork, the Municipality or its consultant should contact COTTFN to obtain and execute COTTFN's Archaeological Field Liaison (AFL) Agreement and provide COTTFN the opportunity to have AFLs participate in the assessment.

Continued Consultation: COTTFN notes that the Master Plan considers most of the identified projects sufficiently reviewed through the Master Plan/Class EA process and that additional Class EA investigations are generally not anticipated, with the exception of Problem Area 6B. Please submit the project to NationsConnect when the time comes.

Changes to the Master Plan or Individual Projects: COTTFN requests to be notified of any substantive changes to the preferred alternatives, project locations, footprints, proposed outlets, stormwater storage locations, construction methods, archaeological requirements or environmental mitigation measures that may occur as a result of further consultation on the final master plan document set to occur in the near future.

COTTFN appreciates that the Draft Master Plan includes commitments relating to erosion and sediment control, restoration of disturbed areas, archaeological assessment and environmental mitigation. COTTFN looks forward to receiving a response with the above recommendations incorporated.

Miigwech,

Erna Leclair Consultation Analyst Chippewas of the Thames First Nation Treaties, Lands and Environment

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View conversation in NationsConnect

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MUNICIPALITY OF LAMBTON SHORES

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOREST – STORMWATER MASTER PLAN

NOTICE OF MASTER PLAN COMPLETION

THE PROJECT:

In the May 2025, the Municipality of Lambton Shores initiated a Municipal Class Environmental Assessment (Class EA) process to develop a Stormwater Master Plan for the community of Forest. The Master Plan was undertaken in order to inventory and evaluate existing stormwater facilities within Forest and to investigate the most cost effective and efficient manner to provide additional stormwater servicing, where required, within established areas of the community. The Master Plan process has now been completed. A preferred stormwater management strategy has been identified, which will be implemented as determined by need and resources, within established areas of Forest.

THE ENVIRONMENTAL ASSESSMENT PROCESS:

The Stormwater Master Plan was conducted in accordance with the requirements of Approach 2 for Master Plans under the Municipal Class Environmental Assessment (MCEA), dated October 2000, as amended in 2007, 2011, 2015 and 2024. Following the completion of this Master Plan, the Municipality may proceed with the implementation of the Schedule B and exempt projects noted below. The solution for Problem Area 6B will require additional study to fulfill MCEA requirements prior to implementation as a location has not yet been identified for the additional stormwater storage. The following projects are the preferred stormwater solutions:

RECOMMENDED PROJECTS	CLASS EA SCHEDULE
- Problem Area 2 – New storm sewer on Crozier ROW	- Schedule B
- Problem Area 3 – Twin inlet catch basins & storm sewer upgrades	- Exempt
- Problem Area 4 – Upsize storm sewer on Townsend Line	- Exempt
- Problem Area 5 – Extend Willemse Drain (easement required)	- Schedule B/ Drainage Act
- Problem Area 6A – Upgrade DeJersey Drain and improve overland flow path (easement may be required)	- Schedule B/Drainage Act
- Problem Area 6B – Add additional stormwater storage	- Schedule B/Drainage Act

PUBLIC INVOLVEMENT:

For further information on the Master Plan please contact the project engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Telephone: (519) 524-2641. Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net), prior to **November 6, 2026**. Information will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. A Master Plan Report, documenting the environmental assessment conducted for this project, will be available for public review on the Lambton Shores website at www.lambtonshores.ca as of October 8, 2026. Interested persons may provide written comments to the project team by November 6, 2026. All comments and concerns should be sent directly to Alex Williams, Infrastructure Manager at Lambton Shores. In addition, if concerns regarding any individual Schedule B project(s) identified in this Master Plan cannot be resolved in discussions with the Municipality of Lambton Shores, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the 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 or by email to:

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

&

Director, Environmental Assessment Branch
Ministry of Environment, Conservation & Parks
40 St. Clair Avenue West, 11th Floor
Toronto ON M4V 1M2
EABDirector@ontario.ca

Requests should also be sent to the Municipality of Lambton Shores by mail or by e-mail.

Alex Williams, Infrastructure Manager
Municipality of Lambton Shores
awilliams@lambtonshores.ca

This Notice issued October 8, 2026

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