WEST SIDE COLLECTOR ROAD - MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

Environmental Study Report

April 10, 2024

Prepared for:
Town of Kingsville

Prepared by:
Stantec Consulting Ltd.

Project Number:
165001284

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Executive Summary

Introduction

The Town of Kingsville is undertaking a Municipal Class Environmental Assessment (EA) study to meet long-term transportation needs within the community. The study involves the extension of Heritage Road from Main Street to Road 2 West, creating two local road connecting links, adding active transportation infrastructure and intersection improvements. The improvements will provide a safe and accessible multi-modal transportation network to accommodate future growth and development within the Town.

The study area for this EA is within the Town of Kingsville, along Fox Lane between Road 2 West and Main Street West. The study area includes the intersection at Heritage Road and Main Street West.

This study, known as the West Side Collector Road EA study, was undertaken in accordance with the guidelines of the Municipal Engineers Association (MEA) *Municipal Class Environmental Assessment* document (October 2000, as amended in 2007, 2011 & 2015). Due to the type of project, anticipation for potential effects, and estimated capital costs, the West Side Collector Road EA study is defined as a Schedule 'C' project.

Consultation

A contact list was developed at the outset of the study, which includes relevant government and regulatory agencies, utilities, community organizations, interested members of the public, and Indigenous communities. Project notices issued to date include the Notice of Study Commencement, Notice of Public Information Centre (PIC) #1, and Notice of PIC #2. A Notice of Completion will be issued at the filing of this report.

Two PICs were held throughout the study to ensure stakeholders had an understanding of the project, and to provide opportunities to provide input into the alternative solutions, evaluation criteria, and design alternatives. All input from the public, review agencies, committees, and other stakeholders has been documented. All consultation with Indigenous communities has also been documented in a Consultation Log.

Problem & Opportunity

Based on the review of existing conditions, background studies, planning documents, development proposals, preliminary traffic studies, there are opportunities for improvement within the study area.

The Town of Kingsville is experiencing growth within the community. This growth has created an increase in active transportation, vehicular and truck traffic on the existing transportation network. There is an opportunity to design and implement a 'complete streets' collector road on the west side of Kingsville to meet future traffic and municipal servicing needs. The Town is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. This approach would provide a balanced transportation system that is designed and built for pedestrians, cyclists, automobiles and agricultural vehicles for a twenty-year planning horizon.

In 2022, Kingsville updated their Comprehensive Transportation Master Plan (CTMP) identifying a proposed corridor for a future collector road on the west side of the Town. This corridor closely follows the existing Fox Lane alignment and would serve as a northerly extension for Heritage Road, connecting Main Street and Road 2 West. This new collector road was identified in the CTMP update to support planned future growth in the Town.

In summary, the West Side Collector Road Municipal Class Environmental Assessment (MCEA) study seeks to:

- Use updated traffic analysis and forecasting to understand the capacity needs of the network to service local and regional vehicular traffic, active transportation, and existing and future land uses
- Accommodate growth and development within the Town
- Improve safety and operations at intersections along the study area for all corridor users

Alternative Solutions

Reasonable and technically feasible solutions to the problems and opportunities are identified and evaluated based on their ability to resolve the issues, and their impacts to the socio-economic, natural, cultural, and technical environments.

The following alternative solutions were developed and evaluated:

- Do Nothing
- Limit Development
- Transportation Demand Management
- Improve Other Roadways
- Intersection and/or Operational Improvements

- Construct New West Side Collector Road

The preferred alternative solution to carry forward for the study area is Intersection and/or Operational Improvements and Construct New West Side Collector Road.

Alternative Designs

Alternative design concepts were developed for the following road components:

- Heritage Road and Main Street Intersection
- Extension of Heritage Road Alignment
- Cross-Section of West Side Collector Road

Alternative design concepts were developed and evaluated for the designs of the intersection, road alignment, and cross-section. The alternatives are provided below:

- Heritage Road and Main Street Intersection
    - Signalized Intersection
    - Roundabout
- Extension of Heritage Road Alignment
    - Option 1 – Widen existing Fox Lane to the west
    - Option 2 – Widen existing Fox Lane to the east
    - Option 3 – Widen existing Fox Lane symmetrically (from the existing centreline)
    - Option 4 – New independent alignment east of Fox Lane
- Cross-section of West Side Collector Road
    - Option 1 – Rural Collector with single Multi-Use Trail (MUT)
    - Option 2 – Rural Collector with Fully Paved Shoulders (including buffered bike lanes)
    - Option 3 – Urban Collector Road with Cycle Tracks

Following an evaluation of these design concepts using criteria that considered the natural, socio-economic, cultural and technical environments, the following design alternatives were recommended for the study area:

- Alignment – Option 2 – Widen Fox Lane to the East

- Intersection – Signalized
- Cross-Section – Option C – Urban Collector Road with Cycle Tracks

The Recommended Design Alternative for the road alignment involves using most of the existing Fox Lane road alignment and widening it to the east of its existing platform, signalizing the intersection of Main Street and Heritage Road, and adopting an interim approach to the new road alignment cross-section with a rural collector with paved shoulders, buffered bike lanes, and sidewalks.

The use of the existing Fox Lane platform and alignment and widening it to the east presents technical and environmental advantages when compared to other alignment options. It minimizes private property impacts on agricultural land and future development lands as well as optimizes grading and earth fill opportunities within the future corridor. Based on the future demands forecast for this road network, it is a logical evolutionary upgrade to the existing Fox Lane roadway from its existing narrow gravel road cross-section to a two-lane urbanized cross-section.

The implementation of traffic signals at the intersection of Main Street and Heritage Road presents the best opportunity for a high level of service for traffic operations well into the future while at the same time mitigating property impacts. It is expected that utility impacts and overall cost would be more favorable for a signalized intersection compared to roundabout.

The recommended road cross-section utilizes the entire right-of-way to provide sidewalks, cycle tracks, sewers, boulevard, and a fully paved roadway with curb and gutter. The roadway accommodates all modes of transportation, including motorists, cyclists and pedestrians..

Road Design Elements

The recommended road design elements consist of a proposed collector road extending from Heritage Road to Road 2 West, that includes active transportation infrastructure, as well as improvements at the intersection of Heritage Road and Main Street. The road will also provide water and sanitary services. Stormwater will be managed through roadside ditches.

A 400 mm watermain is recommended to be constructed on the West Side Collector Road with connections on Road 2 West and Main Street. The south connection is proposed to be the 400 mm watermain on Main Street and the north connection is proposed to be the 250 mm on Road 2 West. The existing north watermain run on Road 2 West is anticipated to be upgraded from 250 mm to 400 mm as per the *Kingsville Water Servicing Report*.

The sanitary servicing area is situated along Fox Lane, where Road 2 West runs at the north intersection and Main Street at the south intersection. A 300 mm sanitary pipe

was determined to be adequate for future servicing. A sanitary connection is to be made on a proposed sewer stub near the south end of the West Side Collector Road.

Potential Impacts and Proposed Mitigation

Many of the potential environmental impacts related to this project have been mitigated through the process by which the preferred design was selected. The anticipated impacts and proposed mitigation measures have been described in Section 9.

Potential permits/approvals have been identified and are included in Section 10. Permits and approvals will be sought during detailed design.

Closing

The filing of this Environmental Study Report represents the conclusion of Phase 1 through Phase 4 of the Municipal Class EA planning process as outlined in the MCEA document. Provided that no Section 16 Order requests are received and provided all appropriate environmental and engineering permitting, and approvals are obtained, the Town may proceed with detailed design and implementation (Phase 5) 30 days following the completion of the public review period.

1 Introduction

The Town of Kingsville is undertaking a Municipal Class Environmental Assessment (EA) study to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, active transportation infrastructure and intersection improvements. The improvements will provide a safe and accessible multi-modal transportation network to accommodate future growth and development within the town.

1.1 Study Area

The study area for this EA is within the Town of Kingsville, along Fox Lane between Road 2 West and Main Street West. The study area includes the intersection at Heritage Road and Main Street West.

The approximately limits of the study are shown in **Figure 1**.

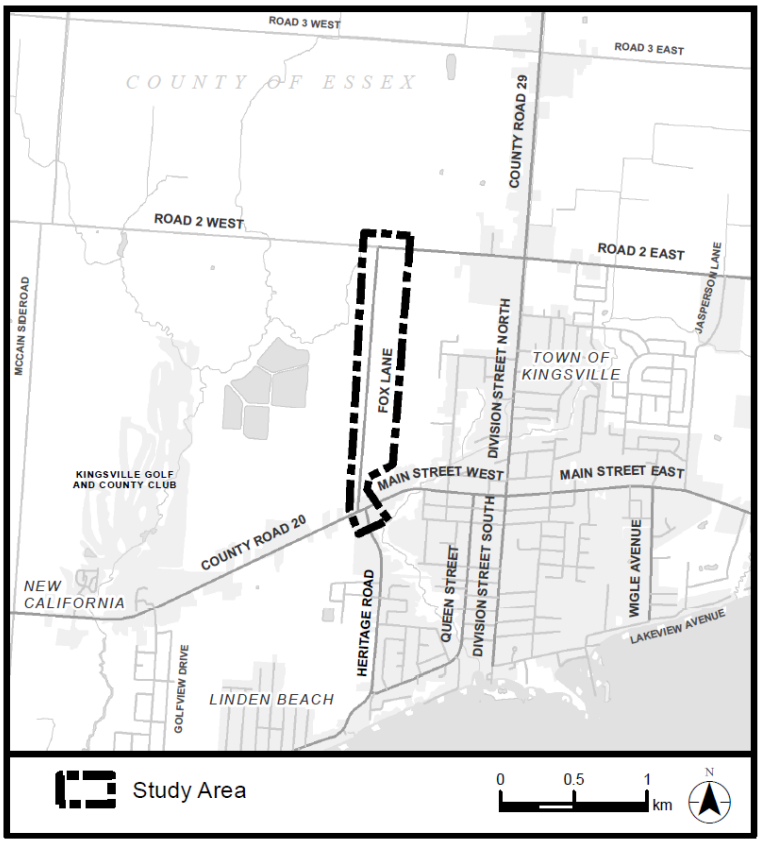


Figure 1: Study Area Map

1.2 Study Team Organization

General direction was provided by the Town with progress meetings held at key points throughout the planning process. Key members of the study team included the following individuals:

Town of Kingsville

- Tim Del Greco, P.Eng., Manager of Engineering
- Andrew Plancke, Director of Infrastructure & Engineering

Stantec Consulting Ltd.

- Isaac Bartlett, P.Eng., Project Director
- Kane Erickson, P.Eng., Project Manager / Transportation Engineer
- Paula Hohner, M.Sc.Pl., MCIP, RPP, Lead Environmental Planner
- Sarah Micks, B.E.S, Environmental Planner

1.3 Municipal Class Environmental Assessment Process

The *Environmental Assessment Act of Ontario* (EAA) provides for the protection, conservation, and management of the environment in Ontario. The EAA applies to municipalities and to activities including municipal road projects. Activities with common characteristics and common potential effects may be assessed as part of a "class" and are therefore approved subject to compliance with the pre-approved Class EA process. The Ministry of the Environment, Conservation and Parks (MECP) is responsible for administration of the EA Act.

The Municipal Class Environmental Assessment (MCEA) is an approved Class EA process that applies to municipal infrastructure projects including roads, water, and wastewater. This process provides a comprehensive planning approach to consider alternative solutions and evaluate their impacts on a set of criteria (e.g., transportation, environmental, social, engineering considerations) and determine mitigating measures to arrive at a preferred alternative for addressing the problem (or opportunity). The Class EA process involves a rigorous public consultation component that includes various provincial and municipal agencies, Indigenous communities and First Nations, and the public, at each of the project stages.

The West Side Collector Road study was undertaken in accordance with the guidelines of the Municipal Engineers Association (MEA) *Municipal Class Environmental Assessment* document (October 2000, as amended in 2007, 2011 & 2015). Due to the type of project, anticipation for potential effects, and estimated capital costs, the West Side Collector Road study is defined as a Schedule 'C' project. A Schedule 'C' project involves either the construction of new facilities or major modifications to existing facilities. Modifications to existing facilities could include road widening, intersection improvements, and/or other operational improvements.

Schedule 'C' projects have the potential for significant environmental impacts and must follow the full planning process specified in the Class EA document, including Phases 1 through 4. The project is documented in an Environmental Study Report (ESR), which is then filed for review by the public, review agencies, and Indigenous communities. Projects generally include the construction of new facilities, and major expansions to existing facilities.

Figure 2 illustrates the Class EA planning process and identifies the steps considered mandatory for compliance with the requirements of the EA Act. The following provides an overview of the five-phase planning process:

- Phase 1 – identify the Problem and Opportunity statement
- Phase 2 – identify and evaluate alternative solutions

- Phase 3 – identify and evaluate alternative design concepts for the preferred solution
- Phase 4 – prepare design plans and Environmental Study Report (ESR) for a minimum 30-day public review period
- Phase 5 –This phase involves detailed design and the preparation of contract/tender documents followed by construction, operation, and monitoring.

The EA process adhered to for this study and shown in Figure 2 follows the MCEA document amended in the year 2015.

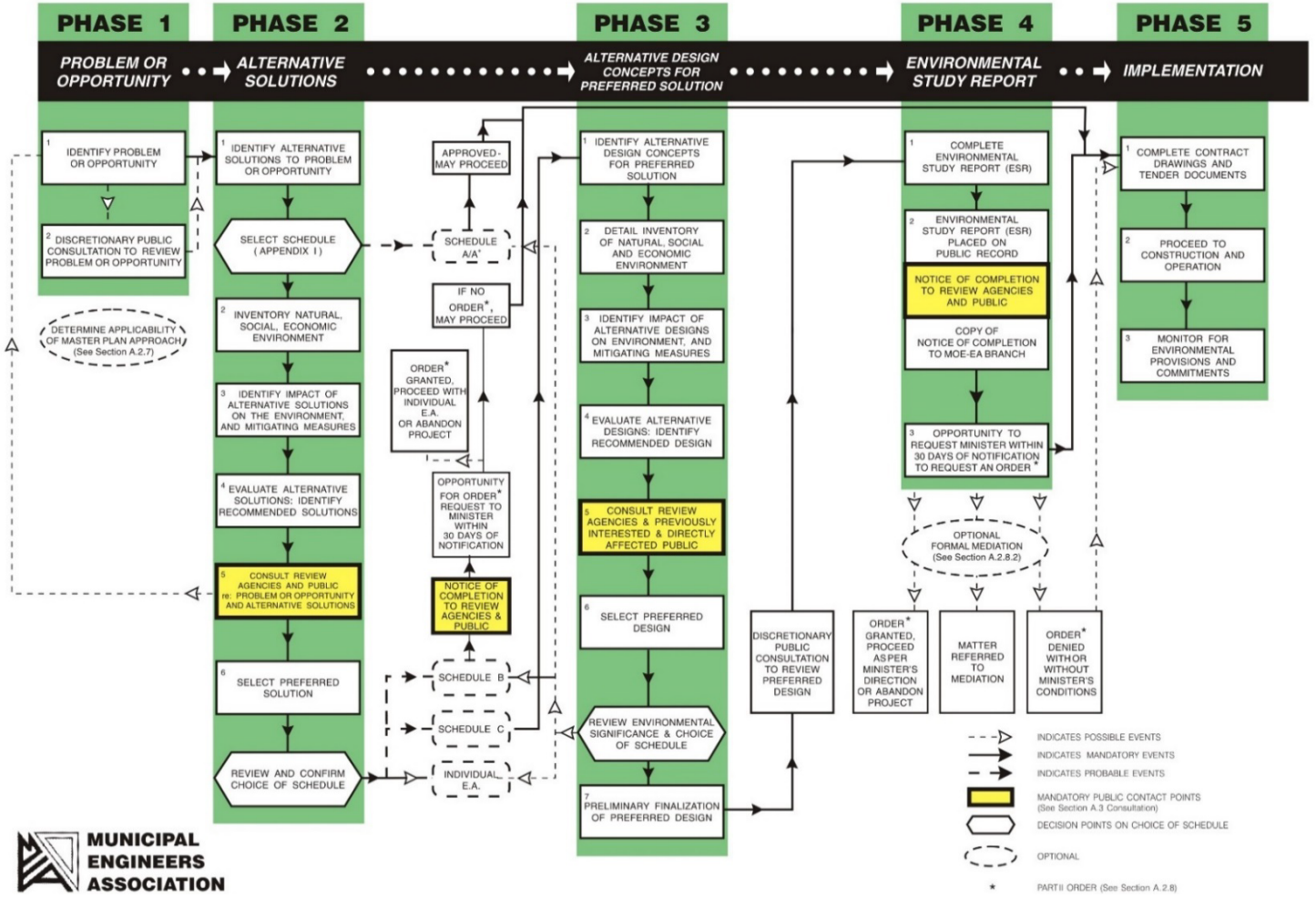


Figure 2: Municipal Class Environmental Assessment Process

1.3.1 Section 16 Order Process

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

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville
tdelgreco@kingsville.ca
519-733-2305

In addition, a request may be made to the Minister of the Environment, Conservation and Parks under Section 16 of the *Environmental Assessment Act* requiring a higher level of study (i.e., requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

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

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

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

and

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

Requests should also be sent to the Town.

1.4 Canadian Environmental Assessment Act

Under the *Canadian Environmental Assessment Act, 2012* (CEAA, 2012), a federal EA study may be required to comply with the physical activities that constitute a "designated project", under the project list identified in the Regulations Amending the Regulations Designating Physical Activities, 2013. This project list ensures that federal environmental assessments are focused on the major projects with the greatest potential for significant adverse environmental impacts to matters of federal jurisdiction.

The West Side Collector Road EA study does not constitute a "designated project" and therefore does not require an EA under the CEAA, 2012. However, the Minister of the Environment, Conservation and Parks may order an assessment for any project not included in the project list, where there may be adverse environmental effects related to federal jurisdiction.

2 Consultation

Consultation is an integral part of the Class EA process. Active engagement with all potentially affected parties including government agencies, community members, special interest groups, and Indigenous communities ensures a transparent and responsible planning process. In addition, the urban design and placemaking elements of this project will benefit immensely from meaningful and engaging consultation with members of the community.

2.1 Project Contact List

A project contact list was created which includes multi-level government agencies and officials, Town of Kingsville staff, committees, emergency service contacts, potentially interested Indigenous communities and First Nations, members of the public, utility services, special interest groups, as well as local property owners within the study area. The list was regularly updated to include those who expressed interest in the study. Addresses for all properties within the study area were compiled and used for the mail out of the initial Notice of Study Commencement. A copy of the contact list is provided in **Appendix A.1**.

2.2 Project Notices

Notices were sent via mail or email (where requested) to property owners within the study area, the project contact list, and Indigenous communities and First Nations. Notices were published in the Southpoint Sun and Essex Free Press. The notice was also posted on the Town's website (https://haveyoursaykingsville.ca/west-side-collector-road). The study notifications are provided in **Appendix A.2**, including:

- Notice of Study Commencement – published on the Town of Kingsville website on August 19, 2022. Mailed and emailed to the project contact list, Indigenous communities and First Nations, and property owners on August 19, 2022.
- Notice of Public Information Centre 1 – published in the Southpoint Sun and Essex Free Press the week of August 15, 2022. The notice was mailed and emailed to the project contact list, Indigenous communities and First Nations, and property owners on September 8, 2022.
- Notice of Public Information Centre 2 – published in the Southpoint Sun and Essex Free Press the week of July 10, 2023. The notice was mailed and emailed to the project contact list, Indigenous communities and First Nations, and property owners on July 7, 2023.

- Notice of Study Completion – will be published in the Southpoint Sun and Essex Free Press, mailed and emailed to the contact list, Indigenous communities and First Nations, and property owners.

2.3 Agency Consultation

Several ministries, agencies and authorities were contacted during project initiation and throughout the study to notify them of the project and to request information related to the study area and feedback pertaining to the study. Agency comments received are included in **Appendix A.3**.

Provincial Agencies

- Ministry of Natural Resources and Forestry
- Ministry of Environment, Conservation and Parks
- Ministry of Citizenship and Multiculturalism
- Ministry of Transportation
- Ministry of Agriculture, Food, and Rural Affairs
- Ministry of Education
- Ministry of Indigenous Affairs
- Infrastructure Ontario
- Essex Region Conservation Authority

Emergency Services

- Town of Kingsville – Fire and Rescue
- Ontario Provincial Police – Kingsville Detachment
- Essex-Windsor Emergency Medical Services

Municipal Agencies

- Town of Kingsville
- County of Essex

Utilities

- Hydro One
- E.L.K. Energy Inc.
- Enbridge
- Cogeco Cable
- WaveDirect
- Xplornet
- MNSi Telecom
- Gosfield North Communication
- Bell Canada

Stakeholders / Schoolboards

- Amico
- Greater Essex County District School Board
- Windsor-Essex Catholic District School Board
- Conseil Scolaire de District des Ecoles Catholiques du Sud-Ouest
- Student Transportation Services

2.4 Stakeholder Meetings

Stakeholder meetings were held to update interested and impacted stakeholders on the study's status, and to provide input to the study team. A summary of each meeting is provided below. The meetings included stakeholders from the following organizations:

- Essex County
- Amico
- Nevan Construction

2.4.1.1.1 Essex County

A meeting was held on June 13, 2023, via Microsoft Teams. The project team presented the recommended solution to Essex County, including the recommended alignment, cross-section, and intersection. Essex County had no concerns with the recommended solution.

2.4.1.1.2 Amico

A meeting was held with Amico on June 21, 2023, via Microsoft Teams. The project team presented the recommended solution to Amico, including the recommended alignment, cross-section, and intersection. Additional details regarding Amico's development plans, stormwater management plans, etc. were discussed. Amico will be consulted during detailed design.

2.4.1.1.3 Nevan Construction

A meeting was held with Nevan Construction on July 6, 2023, via Microsoft Teams. The project team presented the recommended solution to Nevan Construction, including the recommended alignment, cross-section, and intersection. Additional details regarding Nevan Construction's development plans, stormwater management plans, etc. were discussed. Nevan Construction will be consulted during detailed design.

2.5 Indigenous Communities Engagement

The following Indigenous communities were engaged as part of this study:

- Chippewas of the Thames First Nation
- Bkejwanong Territory (Walpole Island)
- MNO Windsor-Essex Metis Council
- Delaware Nation (Moravian of the Thames)
- Chippewas of Kettle & Stony Point First Nation
- Aamjiwnaang First Nation
- Munsee-Delaware Nation
- Oneida of the Thames
- Caldwell First Nation

The first point of contact for this project was the Notice of Study Commencement, which was sent via email to the above communities on August 19, 2022. All public material has been forwarded to the above communities, and follow-up phone calls/emails were completed to ensure that communities had sufficient information to determine consultation interests. As the study progressed, all interested parties were notified and invited to all PICs and given the opportunity to express concerns and provide feedback through an invitation to meet and via telephone calls soliciting discussion.

Caldwell First Nation requested to review the Stage 1 Archaeological Assessment Report, and to participate in any Stage 2 Archaeologist Assessment fieldwork. A copy of the report was provided on November 18, 2022. Caldwell First Nation had no concerns with the recommendations of the Stage 1 Archaeological Assessment Report.

Chippewas of the Thames First Nation requested to review the Stage 1 Archaeological Assessment Report, and to participate in any Stage 2 Archaeologist Assessment fieldwork. A copy of the report was provided on November 18, 2022. Chippewas of the Thames First Nation had no concerns with the recommendations of the Stage 1 Archaeological Assessment Report

A copy of the Indigenous community engagement is provided in **Appendix A.4**.

2.6 Public Consultation

Two Public Information Centres (PICs) were hosted as a component of the consultation process for this project to provide the public with an opportunity to express concerns throughout the study process, while assisting the development of a preferred plan.

2.6.1 Public Information Centre 1

The first PIC was hosted in person at the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Tuesday, September 20, 2022, from 5:00pm to 7:00pm. The purpose of the PIC was to present background information, alternative solutions, and evaluation criteria for the study. The PIC materials were also made available on the Town's website on September 30, 2022. A total of 27 people attended the in-person PIC, and four comments were submitted and answered.

The following is an overview of the general theme of comments, areas of interest, and verbal discussions held between the project team and PIC participants:

- Future road cross-section and number of vehicular lanes
- Existing property contamination
- Active transportation opportunities

- Existing trees within the study area
- Farm and agricultural vehicle access

The display boards presented at the PIC are provided in **Appendix A.5**. A copy of comments received throughout the study are provided in **Appendix A.6**.

2.6.2 Public Information Centre 2

The second PIC was hosted in person at the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023, from 5:00pm to 7:00pm. The purpose of the PIC was to present the evaluation of alternative design concepts, and recommended design. The PIC materials were also made available on the Town's website on July 27, 2023. A total of 17 people attended the in-person PIC, and four comments were submitted and answered.

The following is an overview of the general theme of comments, areas of interest, and verbal discussions held between the project team and PIC participants:

- Road alignment
- Cross-section design (i.e., sidewalks, cycling facilities, road width)
- Noise impacts
- Property impacts

The display boards presented at the PIC are provided in **Appendix A.5**. A copy of comments received throughout the study are provided in **Appendix A.6**.

3 Policy Context

A summary of the provincial and municipal planning and policy context is provided below as it relates to the West Side Collector Road Class EA. As the study aims to serve existing and future travel demands, the planning documents reviewed consider long-term recommendations and vision for the study area and surroundings.

3.1 Provincial Policy Statement

The Provincial Policy Statement (PPS 2020) is issued under the Planning Act, R.S.O. 1990, c.P.13 and supports the planning of land uses across the province. The PPS 2020 provides policy direction for the use and management of land, as well as infrastructure, while protecting the environment and resources and to ensure opportunities for employment and residential development.

Sections of the PPS 2020 that are applicable to the planning of transportation infrastructure include Part V Policies. Specifically, Section 1.6.7 outlines the policies for infrastructure and public service facilities under transportation systems. The policies state that, “Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.” A multimodal transportation system is to provide connectivity within and amongst the transportation systems. Improving connections across jurisdictional boundaries should be considered where possible. Land use patterns should be planned to minimize the length and number of vehicle trips, as well as to support existing and future active transportation and transit services.

Through the PPS 2020, the province seeks to ensure that its resources are managed in a sustainable manner to protect essential ecological processes and public health and safety, minimizing environmental and social impacts to meet long terms needs.

3.2 Comprehensive Transportation Master Plan

The Town of Kingsville completed a Comprehensive Transportation Master Plan (CTMP) in 2022, to provide a strategy for multi-modal investments to implement to accommodate forecasted growth in the Town to the year 2037. The CTMP recommendations strive to provide a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability, while accommodating future growth and development.

The CTMP identified recommendations to construct an extension of Heritage Road between Main Street West and Road 2 West. These improvements were identified as a short-term need (generally within the next 5 years). The preferred scenario includes

local road network improvements, and active transportation connections that leverage the Essex County, County-wide Active Transportation System. The new road will accommodate goods movement, allowing truck traffic to bypass driving through Downtown. The CTMP recommends the signalization of the Main Street West and Heritage Road intersection.

The recommended cross-section for the West Side Collector Road was a 22 m Collector Road right-of-way, with 2 vehicular travel lanes, one-way cycle tracks on both sides of the road, and sidewalks on both sides of the road. The right-of-way also showed a boulevard for landscaping, and streetlights.

3.3 Town of Kingsville Official Plan

The Town of Kingsville Official Plan (2012) provides the goals, objectives and policies intended to guide future land use and development within the Town of Kingsville. Part of the purpose of the plan is to ensure that transportation facilities required for the efficient movement of people and goods within, to and from the Town are appropriate or will be available.

The Official Plan identifies Arterial Roads as main traffic routes for ingress and egress to the Town. They are intended to provide fast, efficient vehicular connections from one section of the Town to another. Parking, for the most part, is prohibited along arterial roads. Collector Roads are intended to provide movement of moderate volumes of traffic between Local Roads and Arterial Roads, while providing access to abutting properties. Local Roads are expected to provide direct access to various abutting land uses, and through traffic is discouraged.

3.4 County Wide Active Transportation System Master Plan

The County of Essex developed a comprehensive County-Wide Active Transportation (CWAT) Master Plan in 2012 to guide the County and local area municipalities in implementing a County-wide network of cycling and pedestrian facilities. The County and local municipalities developed a framework and implementation strategy for improving conditions for active transportation.

The CWAT includes a proposed network of cycling routes that aim to foster a safe, comfortable, bicycle and pedestrian friendly environment by encouraging people of all ages and abilities to engage in non-motorizes activities for transportation and recreation.

The CWAT identifies Heritage Road as having local on-road facilities; a multi-use path on the east side of the road, ending at Dieppe Crescent, and a sidewalk on the west

side of the road, starting at Dieppe Crescent. The CWAT recommends an On-Road Route for active transportation, in the form of conventional bike lanes, buffered bike lanes, paved shoulders, signed routes, and other bike lane alternatives.

3.5 Essex Region Conservation Authority

The *Conservation Authorities Act* (CAA) was created with the purpose of conservation, restoration, development, and management of natural resources in watersheds in Ontario. The CAA is administered by the Ministry of Natural Resources and Forestry (MNRF) and established Conservation Authorities with regulatory responsibility within their respective jurisdictions. The CAA was created in part to protect and manage water and other natural resources at the watershed level.

The study area is in the jurisdiction of the Essex Region Conservation Authority (ERCA). ERCA has the responsibility to regulate activities in wetlands, watercourses, and hazard lands (e.g., area in and near rivers, streams, floodplains, wetlands, slopes, and shorelines) through the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (O. Reg 158/06). The ERCA implements the regulation by issuing permits for works in or near watercourses, valleys, wetlands, or shorelines when required.

Some areas within the study area fall within the ERCA Regulated Area and 1:100-year Flood Line.

3.6 Climate Change

The MECP's guide, *Consideration of Climate Change in the Environmental Assessment Process*, outlines two approaches for consideration and addressing climate change in project planning including:

- Reducing a projects impact on climate change (climate change mitigation).
- Increasing the projects and local ecosystems resilience to climate change (climate change adaptation).

The objectives of the climate change document have been considered and incorporated into the generation and evaluation of alternatives and mitigation approaches.

4 Existing Conditions

4.1 Socio-Economic Environment

Existing land use within the study area is predominantly agricultural with some residential properties adjacent to Main Street and Road 2 West. Land use designations within the study area, as identified on Schedule “A” of the Official Plan, include the following:

- Agricultural
- Residential
- Highway Commercial

4.2 Cultural Environment

4.2.1 Archaeological Resources

A Stage 1 archaeological assessment (AA) was undertaken to evaluate the study area’s archaeological potential within an approximately 54.2 hectare (ha) area, including existing municipal road rights-of-way, gravel shoulders, drainage ditches, gravel and asphalt laneways, residential areas, scrubland, and agricultural fields. Initial background research compiled information concerning registered and/or potential archaeological resources within the study area. In addition, a property inspection was conducted, which involved spot-checking the entirety of the study area to identify the presence or absence of features of archaeological potential in accordance with Section 1.2 of the Ministry Citizenship and Multiculturalism (MCM) *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Likelihood is dependent on variables, such as proximity to registered archaeological sites, distance to types of water source, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Extensive land disturbance can eradicate archaeological potential.

The Stage 1 archaeological assessment of the study area determined that much of the study area, approximately 84.4%, retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MCM’ 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), Stage 2 archaeological assessment is

required for any portion of the Project's anticipated construction activities which impact an area of archaeological potential. The remaining 15.6% of the study area retains low to no archaeological potential due to deep and extensive modern disturbance and/or previous AA.

A copy of the *Stage 1 AA* is provided in **Appendix B**. Additional details regarding the requirements for the Stage 2 AA, to be completed during detailed design, are provided in Section 9.4.

4.2.2 Cultural Heritage Resources

In accordance with the EA process, a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment has been completed to identify known and potential built heritage resources and cultural heritage landscapes and screens the potential built heritage resources and cultural heritage landscapes for potential cultural heritage value or interest (CHVI). The study area for the assessment included a 50-metre boundary around the project location.

Historical research, municipal and agency data requests, and the field investigation conducted identified five previously identified built heritage resources (BHR):

- 172 Main Street West (BHR-1)
- 190 Main Street West (BHR-2)
- 189 Main Street West (BHR-3)
- 289 Main Street West (BHR-4)
- 389 County Road 20 (BHR-5)

Where a BHR was identified within the study area, an assessment of potential impacts resulting from the project was undertaken. Potential indirect impacts were identified for BHR-1, BHR-2, BHR-3 and BHR-4. Details regarding avoiding and mitigating impacts to the BHR's is provided in Section 9.5.

A copy of the *Cultural Heritage Report: Existing Conditions and Preliminary Impacts* is provided in **Appendix C.**

4.3 Natural Environment

4.3.1 Background Information Review

Background documents and information sources were consulted to obtain natural heritage designations for the study area. Online natural heritage databases, wildlife atlases and SAR mapping were reviewed to identify flora and fauna records for the

Study area. Records of SAR and Species of Conservation Concern (SOCC), occurrences of amphibians, reptiles, birds and mammals, Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and fish and fish habitat data were obtained from the following sources:

- Natural Heritage Information Centre (NHIC) (MNRF 2023a)
- Land Information Ontario (LIO) (MNRF 2023b)
- Ontario Ministry of Agriculture, Food and Rural Affairs Ag. Maps (OMAFRA) (OMAFRA 2023)
- Essex Region Natural Heritage System Study (ERNHSS) (Essex Region 2013)
- Essex Region Conservation Authority (ERCA) Public Interactive Mapping (ERCA 2022)
- Town of Kingsville Official Plan (OP) and Schedule B of the OP (Town of Kingsville 2011)
- Species at Risk in Ontario (SARO) List (MECP 2023)
- Species List on Schedule 1 of the Species at Risk Act (SARA) (Government of Canada 2023)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map (DFO 2023)
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature 2019)
- Ontario Breeding Bird Atlas (OBBA) (Cadman et al. 2007)
- Ontario Butterfly Atlas (OBA) (Toronto Entomologists' Association [TEA] 2023a)
- Ontario Moth Atlas (OMA) (TEA) 2023b)
- eBird Online Database (eBird 2023)
- iNaturalist Online Observations (iNaturalist 2023)

Many of the above-listed resources do not provide the exact locations of a species occurrence, with accuracy ranging from 1-km² (e.g., NHIC) to 10-km² (wildlife atlases). As such they are used as an indicator of potential occurrence in the study area.

The *Natural Heritage Assessment* report is provided in **Appendix D.**

Natural Heritage Landscape

The study area is in Ecoregion 7E in (Ecodistrict 7E-1). This is the most southerly ecoregion and district in Canada. The district is dominated by agriculture (~90%). Natural areas such as deciduous woodlots occupy a small portion of the land.

The study area is situated in a rural section of the Town. Agricultural lands (row crops) are the predominant land use within the study area, in addition to rural residential, and oil mining infrastructure (pump jacks and tanks). Natural habitat is limited within the study area which includes woodlots, hedgerows, a headwater drainage feature, and watercourses. Large ponds are located to the west of the study area which are assumed to be sewage treatment lagoons.

Other natural areas located outside of, but nearby, the study area are the Cedar Creek Wetland Complex Provincially Significant Wetland (PSW) and Wigle Creek to the west of the study area, a woodlot to the east of the study area and Mill Creek and associated forested corridor to the South of the study area.

Ecodistrict 7E-1 is in Ontario's Carolinian floristic zone. The district has a high concentration of rare flora compared to other areas of Ontario including species not found elsewhere in Canada. Natural areas in this district have a greater potential to harbour rare plant species than other areas of Ontario.

4.3.1.2 Natural Heritage Designations and Features

Natural heritage designations are present within the study area.

Terrestrial Ecosystems

Essex Region and ERCA document two features within the study area which are considered Existing Natural Features. These include a treed area at the south end of the study area, and the Mill Creek forested riverine corridor.

There are no Areas of Natural and Scientific Interest (ANSIs), no PSWs and no Environmentally Significant Areas within the study area.

Aquatic Ecosystems

A watercourse known as Scratch Kennedy Drain is present in the study area on the north side of Road 2 West. Scratch Kennedy Drain is an open municipal drain that has been classified by Fisheries and Oceans (DFO) as a drain class F. Class F drains have an intermittent flow. Scratch Kennedy Drain begins in agricultural fields to the north of the study area and converges with Wigle Creek to the west of the study area. The drain is known to have a warmwater thermal regime. There are no fish community records for Scratch Kennedy Drain. Given that Scratch Kennedy Drain is connected to Wigle Creek,

there is potential for species to also be found in the Scratch Kennedy Drain when flow is present.

Parts of the study area fall within the ERCA Regulation Limit, Ontario Regulation 158/06, however, Project overlap within the regulation limit only occurs at Road 2 West. At this location, the regulation limit is associated with the Scratch Kennedy Drain.

4.3.1.3 Species of Conservation Concern

Species of Conservation Concern (SOCC) are those species that are provincially rare (S1-S3 ranked species), listed as special concern (SC) on the SARO list or are listed as threatened or endangered on Schedule 1 of the *Species at Risk Act, 2002*. Species that are protected by the *Endangered Species Act, 2007* (ESA) are not SOCC; they are considered SAR and discussed in the following section.

Status rankings (S-ranks) for wildlife are based on the number of occurrences in Ontario and have the following meanings:

- S1: extremely rare; usually 5 or fewer occurrences in the province
- S2: very rare; usually between 5 and 20 occurrences in the province
- S3: rare to uncommon; usually between 20 and 100 occurrences in the province
- S4: common; usually more than 100 occurrences in the province
- S#B: breeding status rank
- S#N: Non-breeding status rank
- S?: Rank uncertain

Twenty-five (25) SOCC were identified in the background review as having potential to be present within or near the study area, as noted in Table 1. The potential for SOCC to be present in the study area is limited by the presence of suitable habitat in the study area.

Table 1: Species of Conservation Concern Known to Occur Near or in the Study Area

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA
Birds				
Barn Swallow	*Hirundo rustica*	S4B	SC	THR
Bald Eagle	*Haliaeetus leucocephalus*	S4	SC	NAR

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA
Common Nighthawk	*Chordeiles minor*	S4B	SC	THR
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC
Short-eared Owl	*Asio flammeus*	S4?B,S2S3N	SC	SC
Tufted Titmouse	*Baeolophus bicolor*	S3	-	-
Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR
Insects				
Carolina Sphinx	*Manduca sexta*	S2	-	-
Cicada Killer	*Sphecius speciosus*	S1S2	-	-
Duke's Skipper	*Euphyes dukesi*	S2	-	-
Monarch	*Danaus plexippus*	S2N,S4B	SC	SC
Mammals				
Eastern Mole	*Scalopus aquaticus*	S2	SC	SC
Plants				
American Alumroot	*Heuchera americana*	S1	-	-
Biennial Gaura	*Oenothera gaura*	S3	-	-
Climbing Prairie Rose	*Rosa setigera*	S2S3	SC	
Field Dodder	*Cuscuta campestris*	S2	-	-
Illinois Carrionflower	*Smilax illinoensis*	S2	-	-
Many-fruited Seedbox	*Ludwigia polycarpa*	S2	-	-
Pawpaw	*Asimina triloba*	S3	-	-
Schweinitz's Flatsedge	*Carex schweinitzii*	S3	-	-
Swamp Rose-mallow	*Hibiscus moscheutos*	S3	SC	SC
Woodland Lettuce	*Lactuca floridana*	S1S2	-	-
Reptiles				
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	SC
Northern Map Turtle	*Graptemys geographica*	S3	SC	SC
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC

4.3.1.4 Species at Risk

Species at Risk are those species that are listed as endangered (END), threatened (THR) or extirpated (EXP) under the provincial ESA.

The ESA was created to protect SAR and their habitats. Endangered, threatened, and extirpated species listed on the SARO automatically receive legal protection from harm or harassment. The habitat of a given species is classified as either general habitat protection or regulated habitat protection (i.e., defined under regulation).

Sixteen (16) SAR were identified in the background review as having potential to be present within or near the study area (Table 2). The potential for SAR to be present in the study area is limited by the presence of suitable habitat in the study area.

Table 2: Species at Risk Known to Occur Near or in the Study Area

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA
Birds				
Bank Swallow	*Riparia riparia*	S4B	THR	THR
Barn Owl	*Tyto alba*	S1	END	END
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR
Chimney Swift	*Chaetura pelagica*	S3B	THR	THR
Eastern Meadowlark	*Sturnella magna*	S4B,S3N	THR	THR
Eastern whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END
Mammals				
Little Brown Myotis	*Myotis lucifugus*	END	END	S3
Northern Myotis	*Myotis septentrionalis*	END	END	S3
Small-footed Myotis	*Myotis leibii*	END	NL	S2S3
Tri-coloured Bat	*Perimyotis subflavus*	END	END	S3?
Plants				
Butternut	*Juglans cinerea*	S2?	END	END
Willowleaf Aster	*Symphyotrichum praealtum*	S2	THR	THR
Reptiles				
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	END

Eastern Foxsnake	*Pantherophis gloydi pop. 2*	S2	END	END
Massasauga	*Sistrurus catenatus pop. 2*	S1	END	END

4.3.2 Field Investigations

Field investigations occurred on August 23, August 25, 2022, and July 24, 2023. On all three site visits, weather conditions were clear and hot, with an air temperature of 26 to 28°C and light winds. The field investigation was completed where land access was permitted and included the area within the Project location and portions of the study area. Private lands in the study area were assessed from the limit of accessible lands.

4.3.2.1 Ecological Land Classification

Ecological Land Classification (ELC) surveys were completed to identify and map natural and anthropogenic vegetation communities in the study area. Vegetation surveys were completed in the late summer during the growing season when naturally occurring woody and herbaceous vegetation could be accounted for and characterized accurately.

SAR and SOCC plants such as the endangered butternut (*Juglans cinerea)* tree or the threatened willowleaf (*Symphyotrichum praealtum)* aster were surveyed for and mapped if encountered. A botanical inventory of vascular plants occurring in the study area was completed during site investigations. A detailed of vascular plant species observed in the study area is provided in **Appendix D.**

4.3.2.2 Bat Maternity Roost Tree Survey

Trees in the Project location were assessed for potential suitability as bat maternity roosts. The assessment followed the recommended methods in the MNRF Guelph District *Bat and Bat Habitat Surveys of Treed Habitats* which was based in part on the *Bat and Bat Habitat Guidelines*. According to the MNRF Guelph District protocol, the best candidate trees for maternity colonies are likely to contain several characteristics (to be considered a potential treed roost habitat, not all habitat characteristics listed below needed to be present), which include:

- Height – where trees are tallest in the stand
- Diameter – where trees have a large diameter at breast height (DBH)
- Loose/peeling bark – where trees have a large amount of peeling/loose bark
- Cavity height – where cavity height is high on the tree (>10 m high)

- Open canopy – located in an area of open canopy for accessibility in and out of tree
- Decay – where the tree exhibits early stages of decay

Trees in the study area but outside the project location (e.g., trees in the Mill Creek corridor and SWDM4) were not assessed because tree removals are not anticipated at those locations.

4.3.2.3 Bats

There were no trees within the project location that were suitable for bat maternity roost habitat. Trees providing potential bat maternity roost habitat features were present in the study area outside the project location. Individual trees were not assessed because tree removals within these features are not proposed for the project.

4.3.2.4 Vegetation

The study area is predominantly row crop agricultural land mixed with rural residences at the north end and low density residential at the edge of town at the south end. A few shrubby thicket hedgerows occur along or adjacent the proposed road. A couple of small woodland areas occur at the periphery of the study area outside of the proposed road alignment.

Apart from the forested area at the south end of the study area along Mill Creek, natural features such as deciduous forests or grassland habitat does not occur due to the active use of land in the study area. Approximately 50% of the plant species observed during the botanical inventory are non-native (exotic) species, which is a high percentage of exotic species. This high percentage of exotics and absence of highly sensitive plant species is indicative of the disturbed conditions found in the study area. The complete list of vascular plants recorded is provided in **Appendix D**.

An SOCC plant was observed in the study area, however, the species is known to be common in Essex County.

Vegetation communities present within the study area are described in **Appendix D.**

4.3.2.5 Significant Wildlife Habitat Assessment

The MNRF Significant Wildlife Habitat Technical Guide (SWHTG) describes significant wildlife habitat (SWH) in four categories:

1. Seasonal concentration areas
2. Rare vegetation communities or specialized habitats for wildlife
3. Habitat for SOCC (excluding habitat for endangered or threatened species)

4. Animal movement corridors

Habitats within the study area were assessed for candidate SWH, as defined in the Ecoregion 7E Criterion Schedule. Wildlife observations and evidence of wildlife (e.g., tracks, burrows, vocalizations) were recorded during the site visit. Targeted species-use surveys are generally required to determine if candidate features qualify as confirmed SWH. Because targeted species-use surveys were not conducted, identified SWH features were considered candidate, unless they were confirmed through direct observations or background review.

Evaluation criteria and the SWH assessment results appear in **Appendix D.** A brief description of the four SWH categories and the result of the assessment is provided below:

Seasonal Concentration Areas

Seasonal concentration areas are those sites where large numbers of a species gather at one time of the year, or where several species congregate. Only the best examples of these concentration areas are usually designated as SWH.

The following seasonal concentration areas were determined to be potentially present in the study area:

- **Bat Maternity Colonies (Candidate)**: Habitat for Bat Maternity Colonies occurred within the study area.
- **Turtle Wintering Areas (Candidate):** Habitat for Turtle Wintering Areas occurred within the study area.

Rare Vegetation Communities and Specialized Habitat for Wildlife

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species.

Rare vegetation communities were not present in the study area. However, one type of specialized habitat for wildlife may be present in the study area:

- **Amphibian Breeding Habitat (Woodland) (Candidate)**: Habitat for Amphibian Breeding Habitat (Woodland) occurred within the study area.

Species of Conservation Concern

There are four types of SOCC: those which are rare, those whose populations are significantly declining, those which have been identified as being at risk from certain common activities and those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: globally rare, federally rare with designations by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), provincially rare with designations by the Committee on the Status of Species at Risk in Ontario (COSSARO), regionally rare (at the Site Region level), and locally rare (in the municipality or Site District). This is also the order of priority that should be assigned to the importance of maintaining species. While these species are considered rare, they are not regulated under the ESA or the federal *Species at Risk Act*. Species designated as special concern provincially or federally are included as SOCC. A habitat assessment for SOCC that fall into this category that have ranges that overlap with the study area is in **Appendix D**. The presence or absence of these species would need to be assessed through completion of targeted surveys at the appropriate time of year.

Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated significant wildlife habitat. Examples include species vulnerable to habitat loss such as marsh, open country, and shrub/early successional breeding birds.

The results of the SOCC habitat assessment are presented in **Appendix D**. Candidate habitat for ten (10) and confirmed habitat for one (1) of the 25 SOCC identified in the background review was present in the study area, including the following species:

Candidate Habitat for SOCC:

- **Birds** – Common Nighthawk, Eastern Wood-Pewee
- **Insects -** Cicada Killer
- **Mammals -** Eastern Mole
- **Plants -** Biennial Gaura, Climbing Prairie Rose, Field Dodder, Many-fruited Seedbox, Pawpaw
- **Reptiles -** Midland Painted Turtle, Snapping Turtle

Confirmed Habitat for SOCC:

Plants

- Shellbark Hickory

After the plant inventory that was completed during the July 24, 2023, site visit, one of the SOCC plants was confirmed to be present in the study area, the shellbark hickory. None of the other potential SOCC were documented.

Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move to one habitat from another. This is usually in response to different seasonal habitat requirements. There is one type of animal movement corridor in Ecoregion 7E - amphibian movement corridors.

- **Amphibian Movement Corridors (Candidate)**: Amphibian Movement Corridor habitat occurred within the study area. The headwater drainage feature may also act as a movement corridor.

4.3.2.6 Species at Risk

Suitable habitat for seven (7) of the sixteen (16) SAR identified in the background review was present in the study area.

The results of the SAR habitat suitability assessment are on file with the Town. Habitat in the study area was found to be suitable for the following SAR:

- **Birds -** Red-headed Woodpecker
- **Mammals -** Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-coloured Bat
- **Plants –** Butternut, Willowleaf Aster
- **Reptiles -** Eastern Foxsnake

Eastern Foxsnake

Suitable habitat for Eastern Foxsnake in Essex County within 1500 m of an Eastern Foxsnake observation is considered Regulated Habitat under Ontario Regulation 242/08 of the ESA.

According to the habitat regulation, protected sites include those used for nesting, hibernation, and communal shedding and basking, as well as areas within 1500 metres of an Eastern Foxsnake occurrence that are suitable for it to carry out its life processes (e.g., foraging and thermoregulation). The regulation applies where the snake occurs within the county of Essex.

According to the COSEWIC Status Report on the Eastern Foxsnake, the main habitat for this species in Essex/Kent County (Essex-Kent Regional Population) consists of

unforested, early successional habitat. Hedgerows bordering farm fields and riparian zones along drainage canals are regularly used.

The most important components of Eastern Foxsnake habitat include the following, which are captured under the habitat regulation:

- hibernation sites
- egg laying (oviposition) sites location
- shedding and basking (thermoregulation) sites

Other supporting habitat features include:

- shelter sites – sites that provide shelter include brush or branch piles, logs, stone piles, or other structures large enough for the snakes to seek refuge in.
- foraging habitat – The main diet of the Eastern Foxsnake includes small mammals and birds (including eggs and nestlings). Areas that support rodents or breeding birds are likely to be ideal foraging habitat.
- seasonal movement corridors – include corridors between the other components of its habitat.

Further to these features, the habitat regulation also protects any part of a prairie, savannah, hedgerow, shoreline, marsh, old field, forest, sand dune or similar area that is being used by an Eastern Foxsnake (Carolinian population) or on which an Eastern Foxsnake (Carolinian population) directly depends to carry on its life processes.

The presence of supporting features within these habitats generally increases the likelihood of Eastern Foxsnake occurrences. Supporting features would include, but are not limited to brush piles, branch pruning's, rotting logs, log piles, stone piles, concrete, box culverts, large rocks, abandoned farm machinery and stone foundations.

Some of the preferred habitat types for the Eastern Foxsnake were documented in the study area including hedgerows, forest, forest edge, watercourse, old field, and debris / concrete piles. Snake habitat features (concrete piles) present in the study area. Potential hibernacula is not anticipated as subterranean access was not observed at these features. More likely, these features may provide cover objects for snakes using habitat in the area. Given that the Project location is within predominantly active row crop agriculture, there is minimal natural habitat in the study area, there are no permanently flowing watercourses or drains in proximity to the Project location, and lands east of the Project location are mainly agricultural field and residential, there is a low likelihood that the Project will impact important habitat for the Eastern Foxsnake. However, because of the generalist nature of the species and its ability to persist in agricultural landscapes, and the fact that there are supporting habitat features, Eastern

Foxsnake should be considered present in the study area. Correspondence with the MECP prior to project construction is recommended. Mitigation to protect the species from harm is anticipated to be required.

4.3.2.7 Fish Habitat Assessment

The fish habitat assessment characterized potential fish habitat in the Scratch Kennedy Drain and Mill Creek based on the presence/absence of aquatic habitat elements such as channel morphology, substrate types, instream cover, aquatic and riparian vegetation, and water depth. Both watercourses were surveyed by walking the shoreline and visually documenting habitat characteristics. If present, fish habitat features were identified, characterized, and recorded digitally with Stantec field forms on data collection software (ArcGIS) and a digital camera. Fish community sampling was not conducted during the field investigation. Headwater drainage features encountered in the study area during the site visit were also documented.

Based on habitat characteristics documented by Stantec on August 25, 2022, the Scratch Kennedy Drain, and Mill Creek provide fish habitat within the study area. One headwater drainage feature was observed in the study area. During the site visit the headwater drainage feature was dry. The ecological function of the headwater drainage feature is likely limited to indirect (contributing) habitat through providing ephemeral source water to Scratch Kennedy Drain / Wigle Creek.

4.3.2.8 Ecosite SWDM4

There is a small swamp area is located to the east of the proposed road alignment. It is comprised of a small pond surrounded by cottonwood and lowland Phragmites area. SWDM4 is identified within **Appendix D** and contains potential for significant wildlife habitat.

4.3.2.9 Natural Heritage Features Summary

This section provides a summary of natural heritage features that were identified in the study area:

Natural Heritage Designations

- Two ‘Existing Natural Features’ as per Essex Region and ERCA:
- Part of the study area is within the ERCA Regulation Limit, Ontario Regulation 158/06.

Significant Wildlife Habitat

- Candidate: Bat Maternity Colonies

- Candidate: Turtle Wintering Areas
- Candidate: Snake Hibernaculum
- Candidate Specialized Wildlife Habitat: Amphibian Breeding Habitat (Woodland)
- Suitable habitat for SOCC including Common Nighthawk, Eastern Wood-pewee, Cicada Killer, Eastern Mole, biennial gaura, climbing prairie rose, field dodder, many-fruited seedbox, pawpaw, Midland Painted Turtle, Snapping Turtle
- Confirmed habitat and presence of one SOCC, the shellbark hickory
- Candidate: Amphibian Movement Corridor

Species at Risk Habitat

- Suitable habitat for SAR birds: Red-headed Woodpecker
- Suitable habitat for SAR bats: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tricoloured Bat
- Suitable habitat for SAR plants: butternut, willowleaf aster (probable presence of willowleaf aster)
- Suitable habitat for SAR reptiles: Eastern Foxsnake

Fish Habitat and Headwater Drainage Features

- Intermittent fish habitat is present in Scratch Kennedy Drain
- Permanent fish habitat is present in Mill Creek
- One headwater feature is present which provides land drainage and seasonal contributing habitat for Scratch Kennedy Drain / Wigle Creek.

4.4 Drinking Water Source Protection

The study area is located within the Essex Source Protection Area, which contains policies for the protection of municipal drinking water sources within the Town of Kingsville in accordance with the *Clean Water Act.* Information provided by interactive mapping through the Drinking Water Source Protection website indicates that an Intake Protection Zone (IPZ) 3, Significant Groundwater Recharge Area (SGRA), and Highly Vulnerable Aquifer (HVA) have a slight overlap with the south end of the study area.

Impacts to the IPZ, HVA and SGRA are not anticipated as part of this project. Therefore, no threats to drinking water are anticipated.

4.5 Assessment of Past Uses

An Assessment of Past Uses (APU) was completed to inform future planning for excess soil management. The objective of the APU was to determine if Areas of Potential Environmental Concern (APECs) exist in the project area, which may be present as a result of current and/or past Potentially Contaminating Activities (PCAs) in the project area or adjacent/neighbouring properties.

To fulfill the objective of the APU, historical records and documentation available for the project area and the surrounding areas were reviewed, and a site reconnaissance was completed on November 19, 2021. Following the review of available information, PCAs in or near the project area were identified and were evaluated to determine if they contributed to APECs. Table 3 includes a summary of the identified APECs.

Table 3: Summary of Areas of Potential Environmental Concern

APEC #	Location of APEC	Description of PCA	Approximate Distance of PCA from the Site	Contaminant(s) of Potential Concern
1	Roadways throughout entire project area	PCA 30 - Importation of Fill Material of Unknown Quality	On-Site	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
2	Vicinity of southmost oil derrick and AST	PCA 30 – Importation of Fill Materials of Unknown Quality PCA 14 – Crude Oil Refining, Processing, and Bulk Storage	On-Site	PHC F1-F4. BTEX. PAHs, Metals, Inorganics
3	Vicinity of central oil derrick and AST	PCA 30 – Importation of Fill Material of Unknown Quality PCA 14 – Crude Oil Refining, Processing, and Bulk Storage	On-Site	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
4	Vicinity of northeastern oil derrick and AST	PCA 30 – Importation of Fill Material of Unknown Quality	On-Site	PHC FR-F4, BTEX, PAHs, Metals, Inorganics

APEC #	Location of APEC	Description of PCA	Approximate Distance of PCA from the Site	Contaminant(s) of Potential Concern
		PCA 14 – Crude Oil Refining, Processing, and Bulk Storage		
5	Vicinity of northwestern oil derrick and AST	PCS 14 – Crude Oil Refining, Processing, and Bulk Storage	Approximately 50 m west of the project area	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
6	South of the residential dwelling in the northeastern portion of the project area	PCA 30 – Importation of Fill Material of Unknown Quality	On-Site	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
7	North of the northmost oil storage tanks, immediately west of Fox Lane	PCA 30 – Importation of Fill Material of Unknown Quality	On-Site	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
8	Approximately 80m north of Main Street, immediately west of Fox Lane	PCA 30- Importation of Fill Material of Unknown Quality	On-Site	PHC F1-F4, BTEX, PAHs, Metals, Inorganics
9	Central western portion of project area	PCA 40 – Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications	On-Site	Pesticides, Metals
10	Central eastern	PCA 58 – Waste Disposal and Waste Management, including	Off-Site	PHC F1-F4, VOCs,

APEC #	Location of APEC	Description of PCA	Approximate Distance of PCA from the Site	Contaminant(s) of Potential Concern
	portion of project area	thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners		Metals, Inorganics

Note(s):
PHC F1-F4 - Petroleum hydrocarbons fractions 1 to 4
BTEX - Benzene, toluene, ethylbenzene, and xylene
PAHs - Polycyclic aromatic hydrocarbons

Recommendations for handling the areas of potential concern is provided in Section 9.3.

4.6 Municipal Infrastructure

The existing municipal infrastructure is identified in the *Utility Composite Plan,* available in **Appendix E.** A summary is also provided in the subsections below.

4.6.1 Stormwater and Drainage

The delineation of the existing conditions drainage pattern of the project area and the sites outlet locations are provided by **Figure 3**. The delineation was determined through analysis of the Essex Region Conservation Authority's (ERCA) provided Subwatershed delineations, the Town's online GIS data and the Ontario Digital Elevation Model (SWOOP 2015).

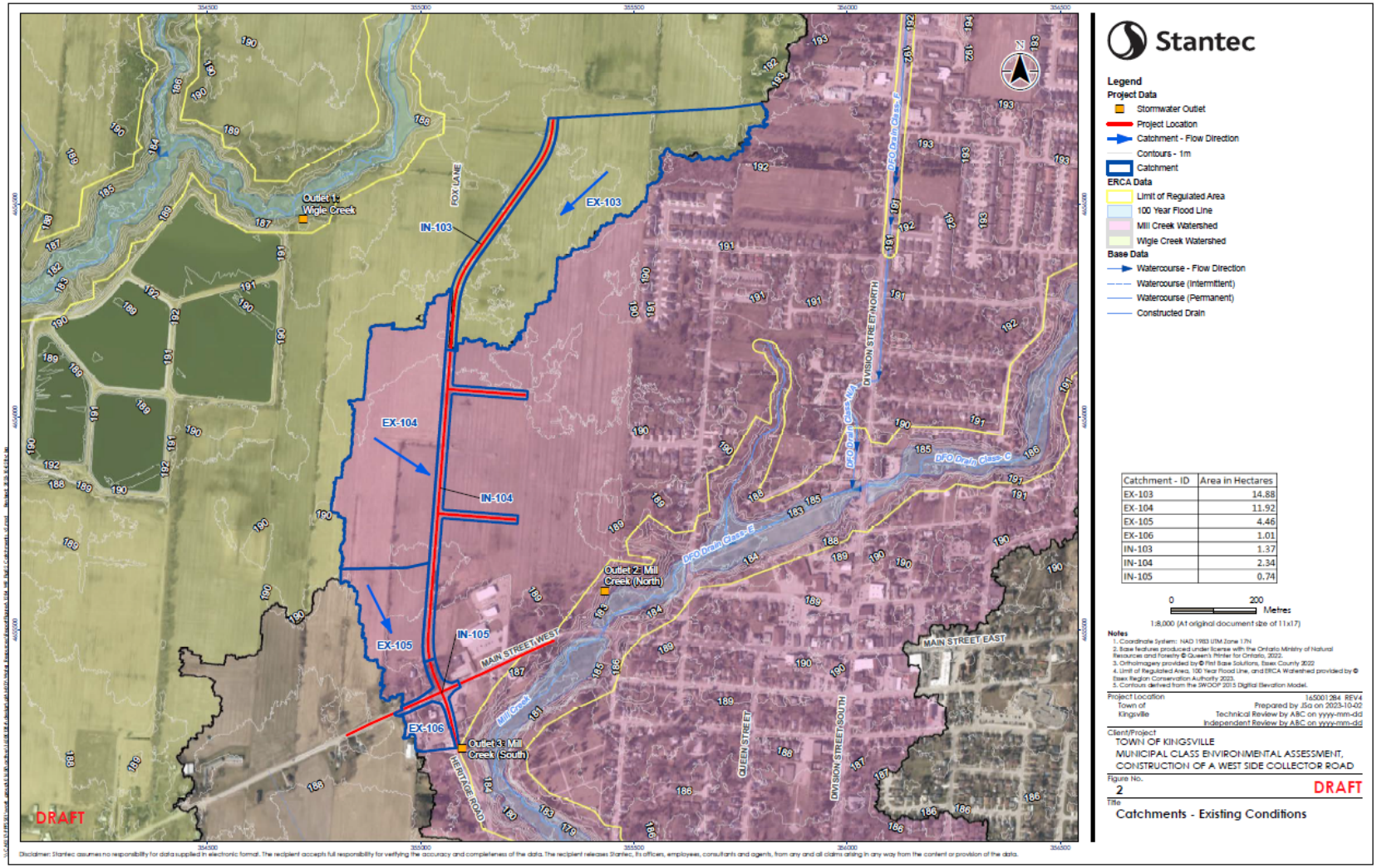


Figure 3: Catchments - Existing Conditions

The subcatchments are categorized as internal (IN), referring to the area where the proposed roadway right-of-way (ROW) will be constructed, or external (EX), representing the areas adjacent to the proposed roadway that drain to the proposed ROW.

In existing conditions, drainage within the study area is mainly influenced by the topography of the land and agricultural tile drains. The project area is within the Essex Region Conservation Authority (ERCA) jurisdiction. The project limits are split between two watersheds: the Wigle Creek Watershed to the west, and the Mill Creek Watershed to the east of the study area.

There are three outlets from the study area summarized as the following:

Outlet 1 – Wigle Creek: This outlet is to the northwest of the development area. Wigle Creek is regulated by ERCA and discharges flow southerly, ultimately discharging to Lake Erie. In existing conditions, flow is directed to this outlet through overland flow.

Outlet 2 – Mill Creek (North): This outlet is located to the southeast of the development area. The outlet is to Mill Creek, north of Main Street West. Mill Creek is a DFO Drain Class E. In existing conditions, flow is directed to this outlet through overland flow.

Outlet 3 - Mill Creek (South): This outlet is located to the south of the development area and south of Main Street West. In existing conditions, flow is directed to this outlet through overland flow and collected by existing storm infrastructure in Heritage Road. Stormwater is then discharged to Mill Creek via storm sewer outlet, located to the south of the development area.

Additional information related to the existing catchment conditions are provided in the *Road 2 West Main Street West Municipal Class Environmental Assessment Stormwater Management Report* available in **Appendix F**.

The existing stormwater infrastructure includes a 250 mm storm sewer along the east side of Heritage Road with two crossings to the west side of Heritage Road south of Main Street. There is also a 200 mm storm sewer along the southeast quadrant of the Heritage Road / Main Street intersection with a crossing to the north side of Main Street.

4.6.2 Watermain

There is currently no watermain installed along the proposed Fox Lane right of way. There is an existing 250mm PVC watermain running east west on Road 2 West at the northern limits of Fox Lane and an existing 400mm PVC watermain running east west on Main Street West at the southern end of Fox Lane. Currently there are no existing valves located on Road 2 West in the vicinity of the proposed Fox Lane intersection. Main Street West does have several isolation valves located in the proposed

intersection of Fox Lane and Main Street West which includes an existing 400mm stub to the north in line with the approximate centerline of Fox Lane.

Figure 4 below shows all existing watermain infrastructure network in the nearby vicinity of Fox Lane.

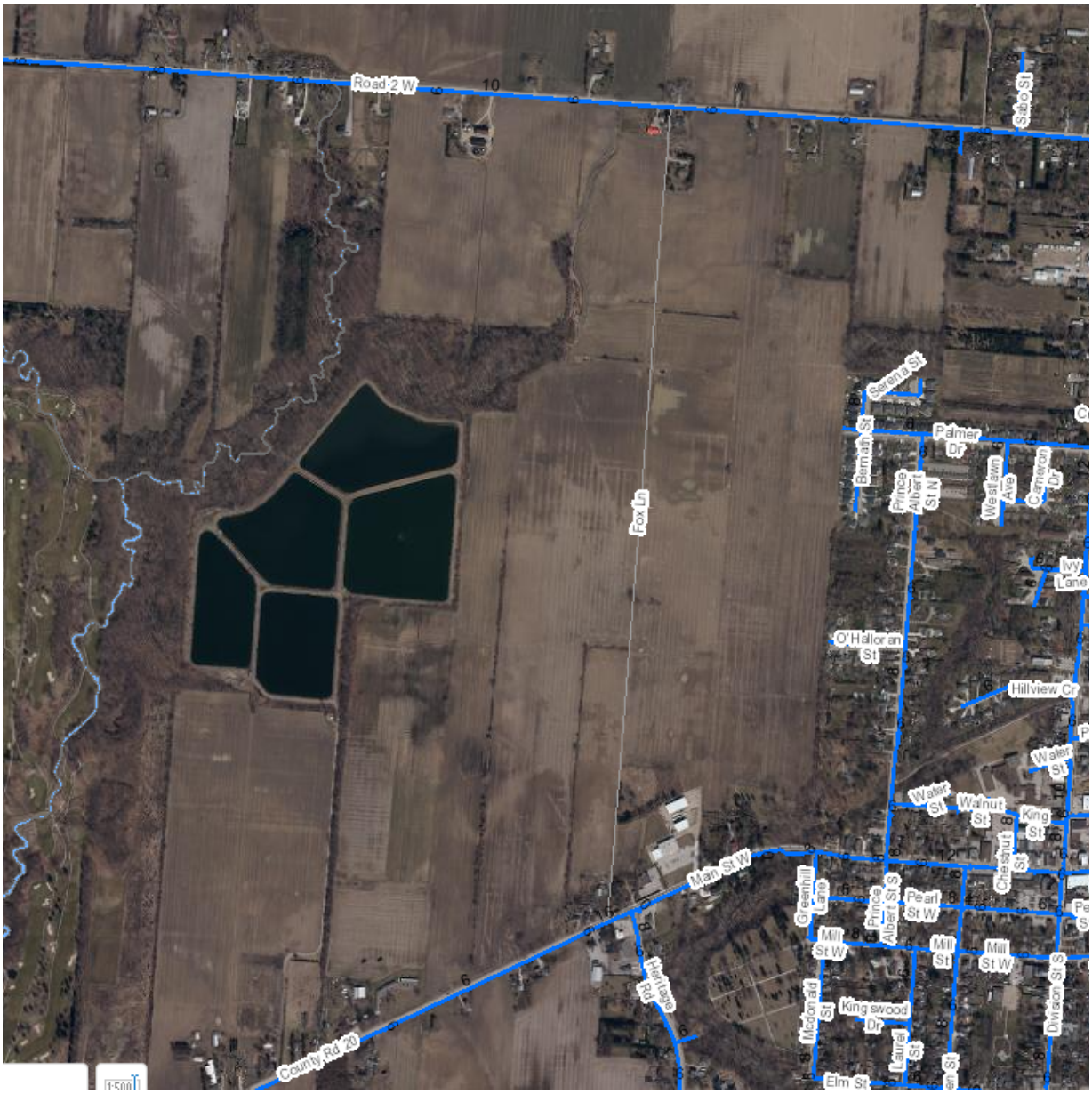


Figure 4: Existing Watermain Network in Nearby Vicinity of Fox Lane

4.6.3 Sanitary Sewer

There is currently an existing 350mm PVC sanitary forcemain that runs along part of the proposed Fox Lane right of way. The forcemain runs along Main Street West to approximately 40m past the intersection of Fox Lane before heading north through a dedicated easement. The easement is intercepted by the proposed alignment approximately 50m north of Main Street West in the vicinity of the southern bend on Fox Lane. Parallel to the 350mm sanitary forcemain there is an abandoned 400mm Asbestos Cement (AC) forcemain approximately 1.5-2.0m to the west following the same alignment. The sanitary forcemain currently will fall within the asphalt road itself for a distance of approximately 545m before turning west to the existing lagoons.

There are currently no gravity sewers installed along Fox Lane or Road 2 West to the north. Main Street West to the south does have an existing 300mm PVC sanitary sewer and 350mm PVC sanitary forcemain located in the westbound lane.

There is no sanitary servicing on Fox Lane or Road 2 West. However, there is an existing 350 mm forcemain on Fox Lane and a sanitary lagoon to the west of Fox Lane. A shallow 300 mm sanitary sewer pipe currently exists on Heritage Road.

The existing sanitary sewer and forcemain alignments are shown in Figure 5below.

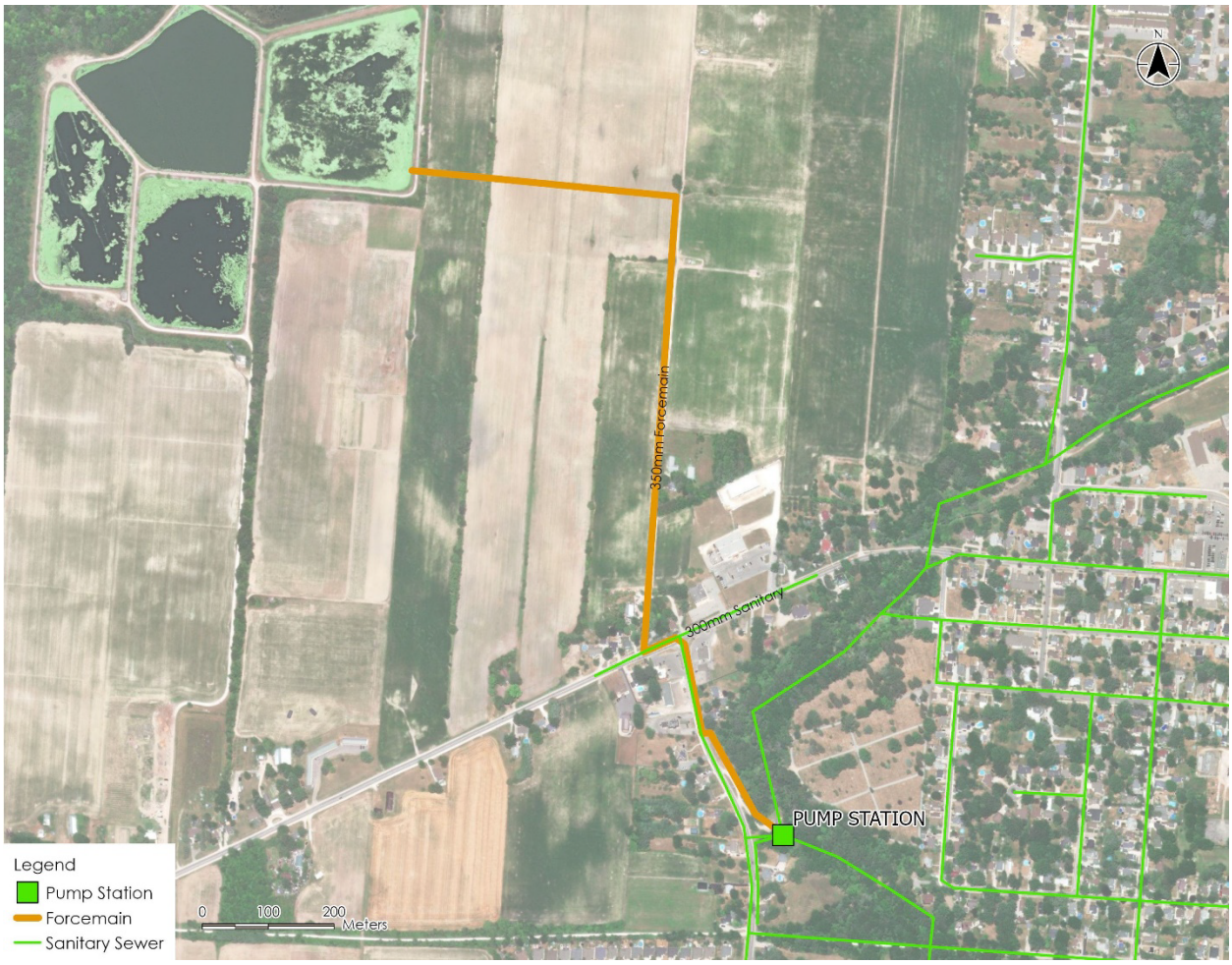


Figure 5: Existing Sanitary Sewer and Forcemain

4.6.4 Utilities and Other Services

The existing utilities are identified in the *Utility Composite Plan,* available in **Appendix E.** Generally, the utilities present within the study area include Bell, Enbridge, Hydro One, and Elk Energy. There are also existing traffic signal conduits that are owned by the Town of Kingsville. The locations of the existing utilities have been identified, and consultation with the utility companies will be held during detailed design.

4.7 Transportation

4.7.1 Road Network

4.7.1.1 Fox Lane

Fox Lane between Road 2 West and Main Street West is a north-west gravel and earth farm access road. It has a one-lane cross-section and is approximately 1.8 km in length.

4.7.1.2 Main Street

Main Street is an east-west two-lane cross-section arterial road with a posted speed limit of 50 km/h within the study area. Although Main Street is signed as County Road 20, the section within the study area (starting 120 meters west of Heritage Road and extending easterly through the urban section of Kingsville) is designated as a connecting link and is under the jurisdiction of the Town of Kingsville.

4.7.1.3 Heritage Road

Heritage Road is a north-south minor collector that extends southerly from Main Street toward Lake Erie, where it turns to the west and extends along the Lake Erie shoreline. Although Heritage Road is signed as County Road 50, the section within the study area (the first 500 meters south of Main Street) is designated as a connecting link and is under the jurisdiction of the Town of Kingsville. Within the study area, the road has a posted speed limit of 50 km/h and a two-lane cross-section, 1m paved shoulders and concrete curbs.

4.7.1.4 Road 2 West

Road 2 West is an east-west concession road north of Main Street. It is classified as a secondary road west of Division Street and as a minor arterial road east of Division Street. It traverses a predominantly rural area, other than a small residential cluster near Division Street. Within the study area, the road has a posted speed limit of 60 km/h and a two-lane cross-section.

4.7.2 Intersections

4.7.2.1 Heritage Road and Main Street Intersection

At the intersection, Heritage Road has a two-lane cross-section and Main Street has a three-lane cross-section (one through lane in each direction and a westbound left-turn lane). The existing intersection configuration has three approaches, and allows through traffic along Main Street, travelling east-west, with stop control for travelers at Heritage Road.

4.7.3 Transit Network

There is no existing transit network within the study area.

4.7.4 Pedestrian Network

There is an existing sidewalk with the boulevard on the north side of Main Street. There is an existing sidewalk without a boulevard on the west side of Heritage Road, south of the intersection with Main Street.

4.7.5 Cycling Network

There are no existing cycling facilities within the study area.

4.8 Transportation Analysis

A traffic study was completed with the objectives to review the existing and future traffic operation conditions and to identify the problems, needs and requirements for the existing and future intersections along the corridor. The scope of work included:

- Reviewing background documents,
- Carrying out intersection capacity analysis to identify any existing traffic issues,
- Forecasting traffic volumes in the selected future horizon year using an annual growth rate and adding expected rerouted traffic and trips generated by future developments through future local roads,
- Reviewing signal warrant and auxiliary left-turn lane warrant at the study intersections,
- Carrying out intersection capacity analysis to identify any potential future traffic issues, and
- Proposing mitigation measures.

The study area and the selected study intersections are presented in **Figure 6**. The study intersections include:

- Country Road 20/Main Street West and Heritage Road (Unsignalized)
- West Side Collector Road (also referred to as Proposed Collector Road or Street A) and Street L (also referred to as Proposed Connector Road C) (Future intersection), and

- West Side Collector Road (also referred to as Proposed Collector Road or Street A) and Street O (also referred to as Proposed Connector Road B) (Future intersection).

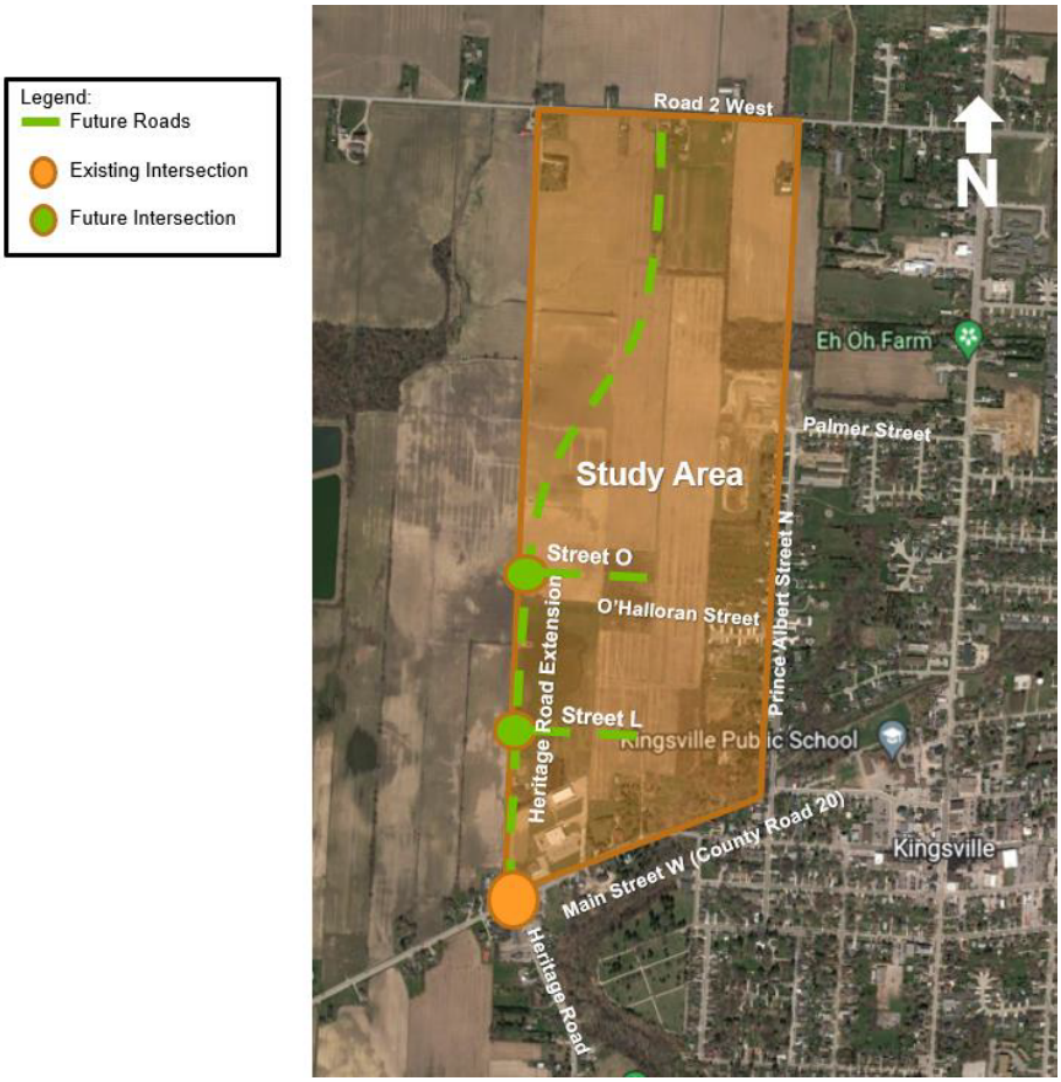


Figure 6: Study Area and Study Intersections

The traffic study and its findings are documented in the *Municipal Class Environmental Assessment – Construction of West Side Collector Road Traffic Study* provided in **Appendix G.**

4.8.1 Existing Traffic Volumes

Turning Movement Counts (TMC) data were collected at Heritage Road and Main Street intersection on August 25, 2022. The existing 2022 traffic volumes for the AM and PM peak hours are illustrated in **Figure 7**.

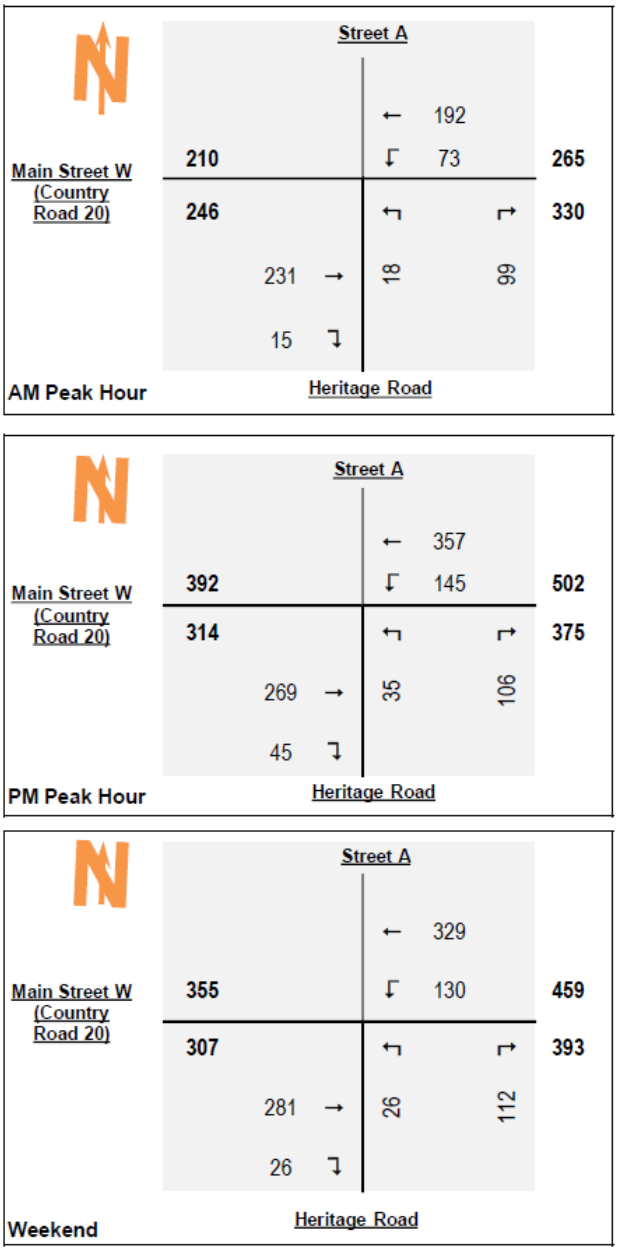


Figure 7: Existing 2022 Traffic Volumes

4.8.2 Existing Operation Analysis

The quality of intersection operations at the intersections in this study is evaluated in terms of level of service (LOS) and volume to capacity (v/c) as defined by the Highway Capacity Manual (HCM). LOS for the intersection is based on the computed delays on each of the traffic movements. LOS 'A' represents minimal delays and LOS 'F' represents a scenario with significant vehicular delays. Capacity is evaluated in terms of the ratio of demand flow to capacity with an at-capacity condition represented by a v/c ratio of 1.00 (i.e., volume demand equals capacity).

The intersection capacity analysis (ICA) at the Heritage Road and Main Street intersection was conducted and the results are summarized in **Table 4** below.

Table 4: Intersection Capacity Analysis Results - Existing 2022 Horizon

Intersection	Movement	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		LOS	Delay (s)	v/c	Queue (m) 95th	LOS	Delay (s)	v/c	Queue (m) 95th	LOS	Delay (s)	v/c	Queue (m) 95th
Heritage Road & Main Street	WBL	A	8.0	0.06	1.5	A	8.4	0.13	3.4	A	8.3	0.11	3.0
	NBLR	B	11.4	0.19	11.4	C	16.3	0.33	10.6	B	14.3	0.28	8.7

Based on the analysis, all the movements are currently operating at a LOS C or better.

5 Problem and Opportunity Statement

Based on the review of existing conditions, background studies, planning documents, development proposals, preliminary traffic studies, there are opportunities for improvement within the study area.

The Town of Kingsville is experiencing growth within the community. This growth has created an increase in active transportation, vehicular and truck traffic on the existing transportation network. There is an opportunity to design and implement a 'complete streets' collector road on the west side of Kingsville to meet future traffic and municipal servicing needs. The Town is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. This approach would provide a balanced transportation system that is designed and built for pedestrians, cyclists, automobiles and agricultural vehicles for a twenty-year planning horizon.

In 2022, Kingsville updated their CTMP identifying a proposed corridor for a future collector road on the west side of the Town. This corridor closely follows the existing Fox Lane alignment and would serve as a northerly extension for Heritage Road, connecting Main Street and Road 2 West. This new collector road was identified in the CTMP update to support planned future growth in the Town.

In summary, the West Side Collector Road Municipal Class Environmental Assessment (MCEA) study seeks to:

- Use updated traffic analysis and forecasting to understand the capacity needs of the network to service local and regional vehicular traffic, active transportation, and existing and future land uses
- Accommodate growth and development within the Town
- Improve safety and operations at intersections along the study area for all corridor users

6 Alternative Solutions

As part of Phase 2 of the MCEA study process, reasonable and technically feasible solutions to the problems and opportunities are identified and evaluated based on their ability to resolve the issues, and their impacts to the socio-economic, natural, cultural, and technical environments.

6.1 Development and Assessment of Alternative Solutions

A brief description of each alternative solution and assessment of whether the alternative addresses the problem and opportunity statement is provided below.

Do Nothing

With the Do Nothing alternative, the existing road network will be maintained as status quo. Only planned infrastructure improvements would be implemented within the Town's transportation network and nothing further to address the future travel demands on the network would be implemented. The planned infrastructure improvements include projects such as Road 2 East Reconstruction.

This alternative does not address future transportation needs of the study area or support future growth and associated travel demands. Although it is not considered feasible, it is carried forward throughout the EA process and used as a baseline for comparison purposes.

Limit Development

Under this alternative, there would be more limits placed on land use development. Projections of future travel demand are dependent on the approval of future residential and urban areas. Limiting development would reduce future travel demands and require fewer infrastructure improvements.

Projections of future travel demand are based on approved future development, as shown in various policy documents that support growth and connectivity, in particular the CTMP and the Town of Kingsville Official Plan (as amended). Growth is planned within the Town of Kingsville, which will require infrastructure improvements and new infrastructure to support increased transportation network capacity and connectivity. Limiting development is not considered to be a feasible option and therefore is not carried forward for future consideration within this study.



Transportation Demand Management

Transportation Demand Management (TDM) includes the implementation of strategies and policies to reduce the number of vehicles particularly during peak times by encouraging alternative modes of transportation or distributing demands outside of peak travel times. Examples of TDM may include carpooling, commuting trip reduction, and staggering work hours.

TDM measures were not identified as part of the CTMP's overall transportation strategy, as they will not address the need for additional connectivity on their own. As development increases, the need for additional capacity and connectivity remains high, and while combined efforts with TDM may alleviate congestion associated with growth rates, additional measures are required to address the primary problem. Therefore, this alternative was not carried forward as part of the preferred solution.

Improve Other Roadways

Improvements to other roadways in the vicinity of the study area would occur under this scenario. In this case, capacity improvements would take place on adjacent roadways to accommodate future travel demand.

This alternative is not consistent with the CTMP and does not provide additional capacity or connectivity required to meet future travel demands. While improvements to other roadways are necessary for the overall function of the transportation network, on its own, this would not address the primary problem. Therefore, this alternative was not carried forward as part of the preferred solution.

Intersection and/or Operational Improvements

This alternative would involve modifications to enhance traffic operations of the roadway through improvements to existing intersections (i.e., traffic signals, roundabouts, turning lanes, etc.), access management, and other measures.

Although this alternative is not a standalone solution, operational improvements are required as part of the overall improvement strategy. This alternative will be carried forward as part of the preferred solution and will be further developed.

Construct New West Side Collector Road

This alternative would involve extending Heritage Road from Main Street to Road 2 West, providing a more direct route for drivers, with a new intersection at Heritage Road and Main Street. The new road would provide two traffic lanes, cycling facilities and sidewalks.

To support future growth and travel demands, the extension of the West Side Collector Road is recommended. This road is required to accommodate additional capacity,

connectivity, accesses, and support a multi-modal transportation network in the Town of Kingsville. This alternative is carried forward as part of the overall improvement strategy.

6.1.2 Preferred Alternative Solution

The following alternative solutions were carried forward as the preferred solution for the study area:

- Intersection and/or Operational Improvements
- Construct New West Side Collector Road

7 Alternative Design Concepts

The preferred solution, as determined in Phase 2 of the EA process, includes intersection and/or operational improvements, and the construction of a new West Side Collector Road. The following sections describe the alternative design concepts developed and their evaluation for the successful implementation of the preferred solution.

Alternative design concepts were developed for the following road components:

- Heritage Road and Main Street Intersection
- Extension of Heritage Road Alignment
- Cross-section of West Side Collector Road

7.1 Development of Alternative Designs

Alternative design concepts were developed and evaluated for the designs of the intersection, road alignment, and cross-section. The alternatives are provided below:

- Heritage Road and Main Street Intersection
    - Signalized Intersection
    - Roundabout
- Extension of Heritage Road Alignment
    - Option 1 – Widen existing Fox Lane to the west
    - Option 2 – Widen existing Fox Lane to the east
    - Option 3 – Widen existing Fox Lane symmetrically (from the existing centreline)
    - Option 4 – New independent alignment east of Fox Lane
- Cross-section of West Side Collector Road
    - Option 1 – Rural Collector with single Multi-Use Trail (MUT)
    - Option 2 – Rural Collector with Fully Paved Shoulders (including buffered bike lanes)
    - Option 3 – Urban Collector Road with Cycle Tracks

Each proposed improvement was evaluated separately using the following factors and criteria:

Factor	Criteria
Socio-Economic	
Planning Policies	• Consistency with Town and County planning policies (i.e., CTMP, Official Plan)
Property Impacts	• Potential to impact private property
Residential Uses	• Impacts existing/planned residential uses including acquisition or expropriation
Agricultural Uses	• Impacts to agricultural uses, including acquisition or expropriation • Impacts vehicle access to agricultural lands
Traffic Noise	• Potential for alignment to impact or improve noise levels for noise sensitive areas (i.e., residences, etc.)
Light Pollution	• Potential for impact of headlight pollution on adjacent property owners • Potential for impact of light pollution due to illumination of road
Natural Environment	
Wildlife	• Potential to impact significant wildlife habitat and species at risk (SAR)
Vegetation	• Impacts to vegetation communities and natural heritage features • Impacts to SAR plant species
Cultural Environment	
Conserves Archaeological Resources	• Minimize potential impact to archaeological sites and areas of archaeological potential
Conserves Built Heritage Resources and Cultural Heritage Landscapes	• Minimize potential impact on known (e.g., previously recognized) and potential built heritage resources and cultural heritage landscapes
Technical Considerations	
Construction Staging	• Potential to impact existing traffic operations during construction
Constructability	• Potential for construction challenges
Cost	• Relative costs in terms of capital and maintenance
Traffic Operations	• Level of Service offered by intersection design alternatives
Utility Impacts	• Potential conflicts with existing utility infrastructure

The intersection at the north end of the study limits where the proposed extension of Heritage Road connects to Road 2 West has not been considered as part of the evaluation of design alternatives. The design and specific environmental impacts associated with this intersection improvement are being undertaken as part of a proposed residential development in the area in conjunction with the Town of Kingsville.

7.1.1 Alternative Alignments

The West Side Collector Road will create a new road corridor that provides a north-south connection between Main Street and Road 2 West and provides access to and from the new residential development planned for the west side of Kingsville.

The four alternative alignments considered for the alternative alignments were evaluated in **Table 5**.

Table 5: Evaluation of Alternative Alignments

Factor and Criteria	Option 1 – Widen existing Fox Lane to the west	Option 2 – Widen existing Fox Lane to the east	Option 3 – Widen existing Fox Lane symmetrically	Option 4 – New alignment east of Fox Lane
Socio-Economic Environment				
Planning Policies • Consistency with Town and County planning policies (i.e., CTMP, Official Plan)	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Consistent with proposed road design from CTMP	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Consistent with proposed road design from CTMP	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Consistent with proposed road design from CTMP	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Not consistent with proposed road design from CTMP
Property Impacts • Potential to impact private property	• Impacts to private property on the west side of the existing Fox Lane. • Less property impact when compared to Option 4 • Approx. 4664 m^2 additional property required	• Impacts to private property on the east side of the existing Fox Lane. • Less property impact when compared to Option 1, Option 3 and Option 4 • Approx. 1328 m^2 additional property required	• Impacts to private property on both the east and west side of the existing Fox Lane. • Less property impact when compared to Option 1 and Option 4 • Approx. 2813 m^2 additional property required	• Impacts to private property along the proposed new road alignment. • Most significant amount of property impact compared to other options. • Approx. 10,832 m^2 additional property required
Residential Uses • Impacts existing residential uses including acquisition or expropriation • Impacts planned residential uses proposed east of the existing Fox Lane road	• Low potential to impact existing residential properties • Low potential to impact planned residential uses west of Fox Lane	• Low potential to impact existing residential properties • High potential to impact planned residential uses east of Fox Lane although impacts can be mitigated through site plan design of new residential development	• Low potential to impact existing residential properties • Moderate potential to impact planned residential uses east of Fox Lane, relative to Option 2, although impacts can be mitigated through site plan design of new residential development	• Low potential to impact existing residential properties • High potential to impact planned residential uses east of Fox Lane, although impacts can be mitigated through site plan design of new residential development
Agricultural Uses • Impacts to agricultural uses, including acquisition or expropriation • Impacts vehicle access to agricultural lands	• Low impact to lands currently being farmed • Widening would impact agricultural lands to the west of Fox Lane	• Low impact to lands currently being farmed • Widening would impact agricultural lands to the east of Fox Lane	• Low impact to lands currently being farmed • Widening would impact agricultural lands on both sides of Fox Lane	• High impact to lands currently being farmed • Construction of a new road would entirely impact agricultural lands • Potential for the existing Fox Lane to remain as is
Traffic Noise • Potential for alignment to impact or improve noise levels for noise sensitive areas (i.e., residences, etc.)	• Moderate potential to impact existing noise sensitive areas due to proximity of Fox Lane to existing residences	• Moderate potential to impact existing noise sensitive areas due to proximity of Fox Lane to existing residences	• Moderate potential to impact existing noise sensitive areas due to proximity of Fox Lane to existing residences	• Moderate potential to impact existing noise sensitive areas due to proximity of Fox Lane to existing residences

Light Pollution • Potential for impact of headlight pollution on adjacent property owners • Potential impact for light pollution due to illumination of road	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling along new alignment • Moderate potential for light pollution impacts due to illumination of the road	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling along new alignment • Moderate potential for light pollution impacts due to illumination of the road	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling along new alignment • Moderate potential for light pollution impacts due to illumination of the road	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling along new alignment • Moderate potential for light pollution impacts due to illumination of the road
Summary of Socio-Economic Environment	**Moderately Preferred**	**Most Preferred**	**Moderately Preferred**	**Least Preferred**
Natural Environment				
Wildlife • Potential to impact significant wildlife habitat and species at risk (SAR)	• Moderate potential to impact wildlife habitat and species at risk	• Moderate potential to impact wildlife habitat and species at risk	• Moderate potential to impact wildlife habitat and species at risk	• Highest potential to impact wildlife habitat and species at risk, at this alternative has the largest footprint
Vegetation • Impacts to vegetation communities and natural heritage features • Impacts to SAR plant species	• Moderate loss of vegetation and trees will occur on west side of right-of-way where proposed road improvements overlay natural areas; vegetation removal is required to facilitate construction (including temporary and permanent impacts)	• Moderate loss of vegetation and trees will occur on east side of right-of-way where proposed road improvements overlay natural areas; vegetation removal is required to facilitate construction (including temporary and permanent impacts)	• Moderate loss of vegetation and trees will occur on both sides of right-of-way where proposed road improvements overlay natural areas; vegetation removal is required to facilitate construction (including temporary and permanent impacts)	• Higher loss of vegetation will occur adjacent to right-of-way where proposed alignment overlays natural areas; vegetation removal is required to facilitate construction (including temporary and permanent impacts)
Summary of Natural Environment	**Moderately Preferred**	**Moderately Preferred**	**Moderately Preferred**	**Least Preferred**
Cultural Environment				
Conserves Archaeological Resources • Minimize potential impact to archaeological sites and areas of archaeological potential	• High potential to impact area that retains archaeological potential and requires a Stage 2 Archaeological Assessment	• High potential to impact area that retains archaeological potential and requires a Stage 2 Archaeological Assessment	• High potential to impact area that retains archaeological potential and requires a Stage 2 Archaeological Assessment	• High potential to impact larger area that retains archaeological potential and requires a Stage 2 Archaeological Assessment
Conserves Built Heritage Resources and Cultural Heritage Landscapes • Minimize potential impact on known (e.g., previously recognized) and potential built heritage resources and cultural heritage landscapes	• No anticipated impacts to known and potential built heritage resources and cultural heritage landscapes	• No anticipated impacts to known and potential built heritage resources and cultural heritage landscapes	• No anticipated impacts to known and potential built heritage resources and cultural heritage landscapes	• No anticipated impacts to known and potential built heritage resources and cultural heritage landscapes
Summary of Cultural Environment	**Most Preferred**	**Most Preferred**	**Most Preferred**	**Moderately Preferred**

Technical Considerations				
Construction Staging • Potential impact on existing traffic operations during construction	• Temporary impacts to agricultural vehicle access during construction • Access to Fox Lane would be temporarily from the northern end of the roadway	• Temporary impacts to agricultural vehicle access during construction • Access to Fox Lane would be temporarily from the northern end of the roadway	• Temporary impacts to agricultural vehicle access during construction • Access to Fox Lane would be temporarily from the northern end of the roadway	• No impacts to agricultural vehicle access during construction
Constructability • Potential for design challenges as a result of road alignment location	• Moderate potential for design challenges as road would have to accommodate constraints associated with existing topography, culverts, etc. along and to the west of existing Fox Lane alignment	• Moderate potential for design challenges as road would have to accommodate constraints associated with existing topography, culverts, etc. along and to the east of existing Fox Lane alignment	• Moderate potential for design challenges as road would have to accommodate constraints associated with existing topography, culverts, etc. along both sides of existing Fox Lane alignment	• Lower potential for design challenges as road alignment can be designed independently from any constraints posed by the existing Fox lane alignment • Does not align well with existing Heritage Road and Main Street Intersection
Cost Comparative Order of Magnitude	• $$$$ • Grading costs optimized with use of existing Fox Lane roadbase and fill	• $$$$ • Grading costs optimized with use of existing Fox Lane roadbase and fill	• $$$$ • Grading costs optimized with use of existing Fox Lane roadbase and fill	• $$$$$ • Most expensive option as an entirely new road corridor will be built and much more property acquisition will be required.
Summary of Technical Considerations	**Moderately Preferred**	**Moderately Preferred**	**Moderately Preferred**	**Moderately Preferred**
Overall Summary	**Moderately Preferred**	**Most Preferred**	**Moderately Preferred**	**Least Preferred**

7.1.1.1 Recommended Alignment

The recommended road alignment is to widen the existing Fox Lane to the east. The recommended alignment shown in the *Preliminary Design Drawings*, in **Appendix H**, was determined based on technical analyses and agreements and discussions with local property owners and developers. The alignment will align with the existing south leg of the Heritage Road intersection to provide a safe intersection approach. The alignment supports a safe, multi-modal corridor, makes best use of land available along the corridor in coordination with future land development, and accommodates existing and future traffic conditions within the Town, while minimizing land acquisition needs.

This alignment is approximate and will be refined as required during detailed design following detailed field investigations.

7.1.2 Intersection Design Concepts

One major intersection in the study area, Heritage Road and Main Street, will require improvements to accommodate the West Side Collector Road. The existing intersection configuration has three approaches, and allows through traffic along Main Street, travelling east-west, with a controlled stop for travelers at Heritage Road. The new intersection design will include four approaches, to accommodate the proposed extension of Heritage Road north of Main Street. With the proposed improvements to Heritage Road, maintaining an unsignalized intersection (stop control on Heritage Road) would cause significant delays for the northbound approach and is therefore not being recommended.

Two alternative intersection design concepts have been developed for consideration at this intersection: a signalized intersection, and a roundabout.

7.1.2.1 Signalized Intersection

The CTMP identifies the intersection at Heritage Road and Main Street West as a future signalized intersection, as illustrated in **Figure 8**. This would include a four-approach intersection, with traffic signals, left turn lanes on all approaches, eastbound and northbound right-turn lanes, and pedestrian crossings for safe movement around and through the intersection.

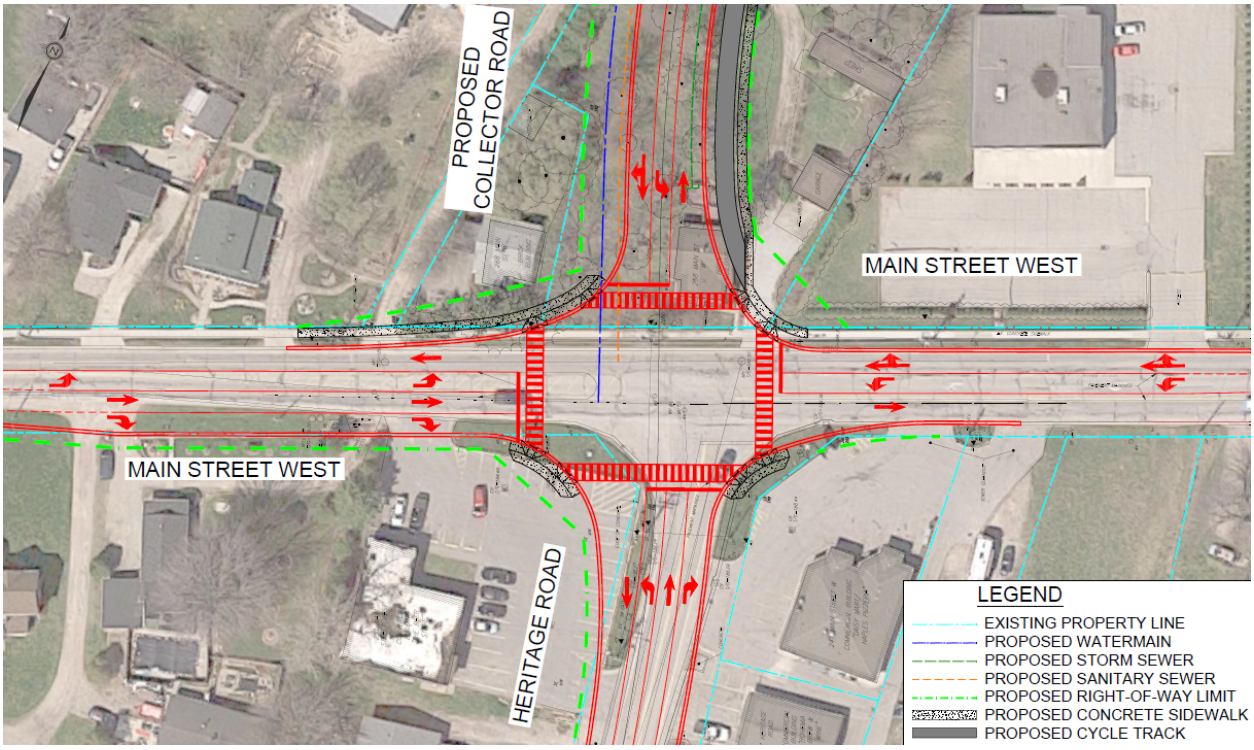


Figure 8: Signalized Intersection Configuration

7.1.2.2 Roundabout

A roundabout configuration at the Heritage Road and Main Street intersection would have four single-lane approaches converging into a single-lane roundabout, as shown in **Figure 9**. A roundabout is not consistent with the recommendations from the CTMP.

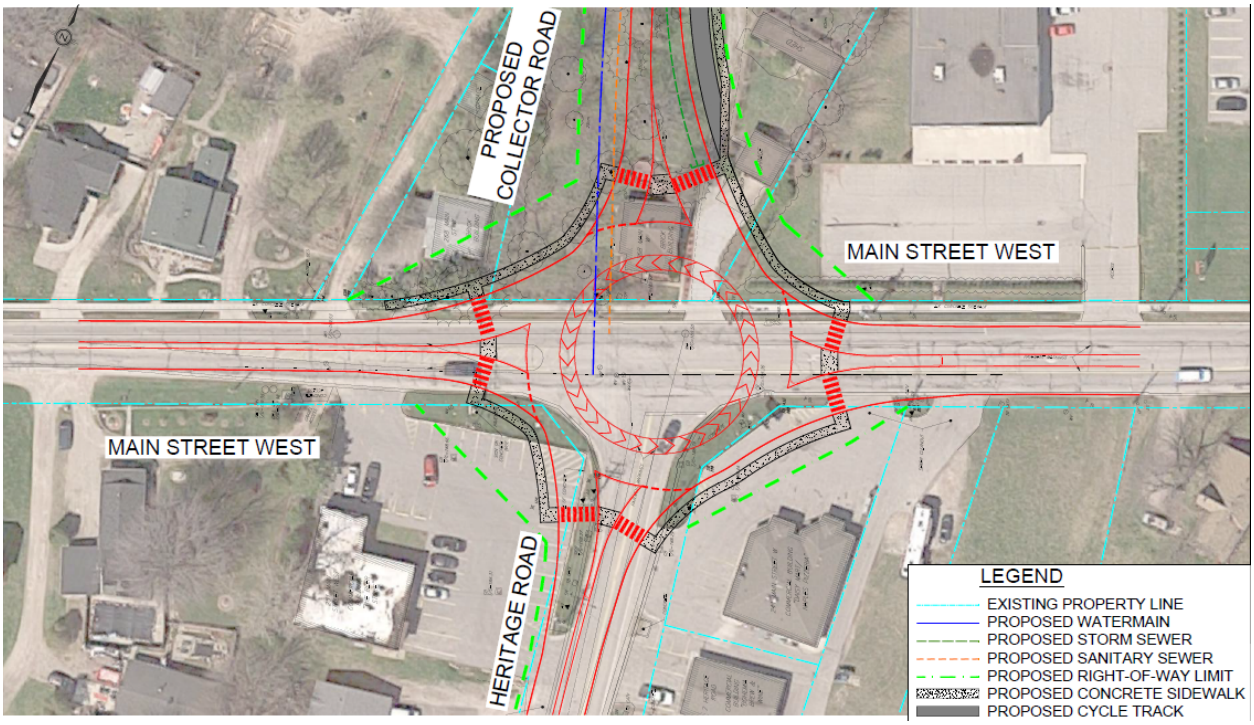


Figure 9: Roundabout Configuration

The two alternative intersection designs considered for the intersection of Heritage Road and Main Street were evaluated in **Table 6.**

Table 6: Evaluation of Alternative Intersection Designs

Factor and Criteria	Signalized Intersection	Roundabout
Socio-Economic Environment		
Planning Policies • Consistency with Town and County planning policies (i.e., CTMP, Official Plan)	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Consistent with proposed intersection design from CTMP	• Consistent with Town planning policies to improve and create an extension/connection from Heritage Road to Road 2 West • Inconsistent with proposed intersection design from CTMP
Property Impacts • Potential to impact private property	• Less property impacts compared to a roundabout	• Significant property impacts surrounding the intersection • Potential for roundabout to create challenging driveway accesses for adjacent properties (residential and commercial).
Residential Uses • Impacts existing residential uses including acquisition or expropriation • Impacts planned residential uses in adjacent land	• Low potential to impact existing residential properties • Low potential to impact planned residential uses	• High potential to impact existing residential properties • Low potential to impact planned residential uses
Agricultural Uses • Impacts to agricultural uses, including acquisition or expropriation • Impacts vehicle access to agricultural lands	• Low impact to lands currently being farmed • Agricultural vehicle access would be maintained	• Low impact to lands currently being farmed • Agricultural vehicle access would be challenging
Traffic Noise • Potential for alignment to impact or improve noise levels for noise sensitive areas (i.e., residences, etc.)	• Moderate potential to impact existing noise sensitive areas due to proximity to existing residences	• Moderate potential to impact existing noise sensitive areas due to proximity to existing residences
Light Pollution • Potential for impact of headlight pollution on adjacent property owners • Potential impact for light pollution due to illumination of road	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling through new intersection • Moderate potential for light pollution impacts due to illumination of the intersection	• Moderate potential for headlight pollution to directly impact adjacent properties due to vehicle headlights traveling through the roundabout • Moderate potential for light pollution impacts due to illumination of the roundabout
Summary of Socio-Economic Environment	**Most Preferred**	**Least Preferred**
Natural Environment		
Wildlife • Potential to impact significant wildlife habitat and species at risk (SAR)	• No anticipated impacts to significant wildlife habitat and SAR	• No anticipated impacts to significant wildlife habitat and SAR
Vegetation • Impacts to vegetation communities and natural heritage features • Impacts to SAR plant species	• Minimal loss of vegetation and trees will occur at the intersection	• Moderate loss of vegetation and trees will occur in order to accommodate the space requirements for a roundabout
Summary of Natural Environment	**Most Preferred**	**Least Preferred**
Cultural Environment		
Archaeological Resources • Impacts to lands with archaeological resources	• Low potential to impact area that retains archaeological potential and requires a Stage 2 Archaeological Assessment	• Low potential to impact area that retains archaeological potential and requires a Stage 2 Archaeological Assessment

Cultural Heritage Resources • Potential to impact identified built heritage resources and/or cultural heritage landscapes	• Potential for indirect impacts to a built heritage resource situated adjacent to the project location associated with this intersection.	• Potential for indirect impacts to a built heritage resource situated adjacent to the project location associated with this intersection.
Summary of Cultural Environment	**Moderately Preferred**	**Moderately Preferred**
Technical Considerations		
Construction Staging • Potential impact on existing traffic operations during construction	• Temporary impacts to agricultural vehicle access during construction • Potential to maintain full intersection operation during construction • Traffic and accesses can be maintained during construction of the intersection expansion including additional lanes and traffic signals	• Temporary impacts to agricultural vehicle access during construction • Low potential to maintain full intersection operation during construction • Lane closures and temporary full roadway closures likely required to construct the roundabout
Constructability • Potential for design challenges as a result of road alignment location	• The approaches to a signalized intersection would generally follow the existing alignments on the South, East and West legs of the intersection while a new alignment would be created for the north leg. • Since the south leg of the intersection, Heritage Road, is currently on a skew to Main Street it is challenging to properly align the future north leg either perpendicular to Main Street or aligned with the south leg.	• A roundabout in this location allows for flexibility in approach alignment which mitigates the challenges with the north and south legs of the intersection being on a skew to Main Street.
Cost • Comparative Order of Magnitude	• $$$	• $$$$$$
Traffic Operations • Level of Service offered by intersection design alternatives	• Based on HMP Peak traffic projected to 2042, the LOS of a signalized intersection is expected to operate at a LOS B.	• Based on HMP Peak traffic projected to 2042, the LOS of a roundabout is expected to operate at a LOS A.
Utility Impacts • Potential conflicts with existing utility infrastructure	• Moderate utility conflicts with overhead hydro, underground telecommunications and gas would be expected in order to implement additional lanes, electrical signal and illumination infrastructure and a north leg to this intersection.	• Significant utility conflicts with overhead hydro, underground telecommunications and gas would be expected in order to implement a roundabout at this location including signing, illumination and a north leg to the intersection.
Summary of Technical Considerations	**Most Preferred**	**Least Preferred**
Overall Summary	**Most Preferred**	**Least Preferred**

7.1.2.3 Recommended Intersection

The signalized intersection is preferred for the Heritage Road and Main Street intersection. The intersection provides a better level of service when compared to a roundabout design and reduces infrastructure cost and utility relocations compared to a roundabout design. The signalized intersection has a significantly smaller footprint than the roundabout design and will impact fewer residential and commercial properties. During construction, the signalized intersection will avoid lengthy road closures, and will reduce impacts to area residents and businesses during construction.

7.1.3 Alternative Cross-Sections

Three cross-sections were developed and considered for the West Side Collector Road from Main Street West to Road 2 West:

- Option A – Rural Collector with single Multi-Use Trail (MUT)
- Option B – Rural Collector with Fully Paved Shoulders (including buffered bike lanes)
- Option C – Urban Collector Road with Cycle Tracks

The CTMP identified Heritage Road as a Collector Road, which requires a 22 m wide cross-section to carry multi-modal traffic including vehicles, commercial trucks, active transportation, and agricultural equipment. Based on the problem / opportunity statement and the planned residential development on the west side of Kingsville, consideration was made to both rural and urban conditions.

7.1.3.1 Option A - Rural Collector with Single Multi-Use Trail

This cross-section (**Figure 10**) includes a paved, two-lane road, with granular shoulders, and a 3.0 m multi-use trail (MUT) on one side of the road only. The MUT accommodates pedestrians and cyclists in both directions and would have a boulevard or ditch between the MUT and roadway. This cross-section accommodates large agricultural vehicles. Temporary field entrances could be considered along the new collector road corridor to accommodate access requirements for agricultural vehicles attempting to cross from one side to the other. Storm sewers would not be required as part of this option since drainage would be achieved through the roadside open ditch system. The width of the ditches and overall right-of-way (ROW) width would be contingent on the drainage requirements for this corridor yet to be designed but is anticipated to exceed the 22 m ROW for a typical collector road. This option is estimated be the lowest cost of the three proposed cross sections.

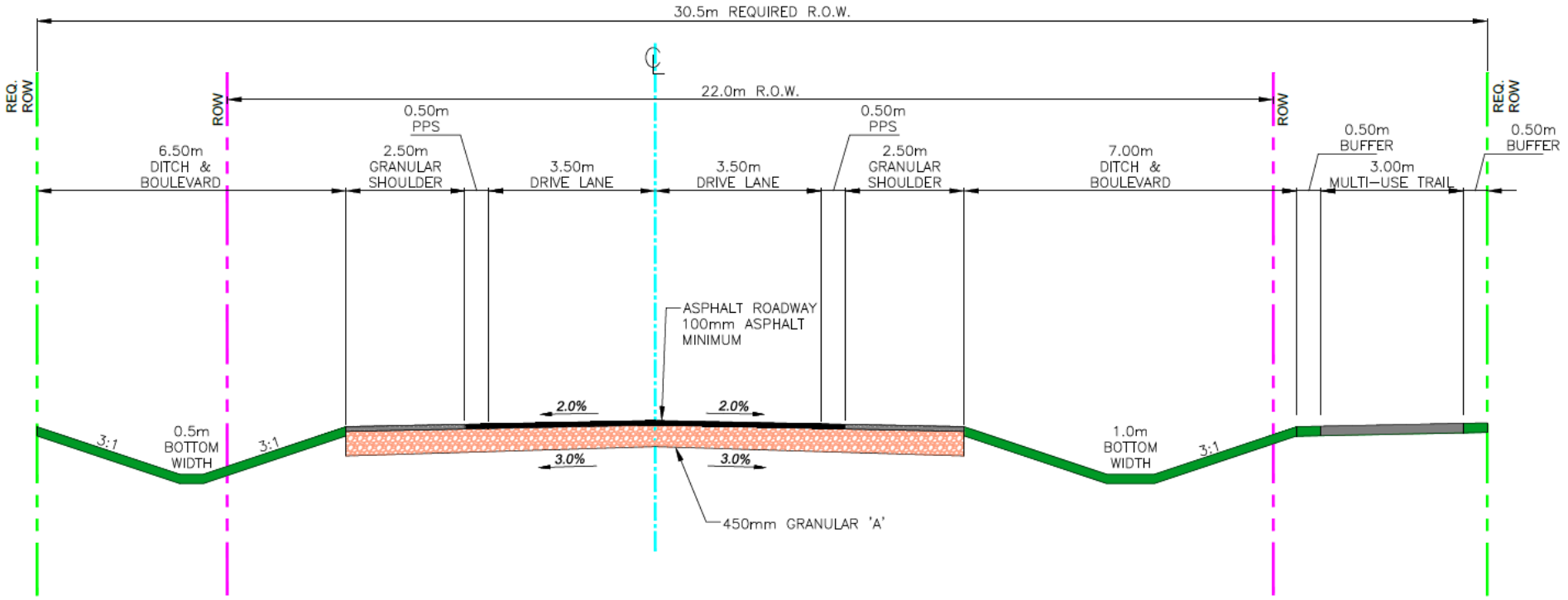


Figure 10: Rural Collector with Single Multi-Use Trail

7.1.3.2 Option B - Rural Collector with Fully Paved Shoulders (including buffered bike lanes)

This cross-section (**Figure 11**) includes a paved, two-lane road with a 1.0 m buffer between the travel lanes and on-road bike lanes. The road accommodates all modes of transportation including commercial trucks, agricultural vehicles, cyclists, and pedestrians. Agricultural vehicles would be required to share the road platform with cyclists using the bike lanes and wait for clear opportunities to pass a cyclist. Temporary field entrances could be considered along the new collector road corridor to accommodate access requirements for agricultural vehicles attempting to cross from one side to the other. The width of the ditches and overall ROW width would be contingent on the drainage requirements for this corridor yet to be designed but is anticipated to exceed the 22 m ROW for a typical collector road. The cost of this option is estimated to be higher than Option 1 but lower than Option 3.

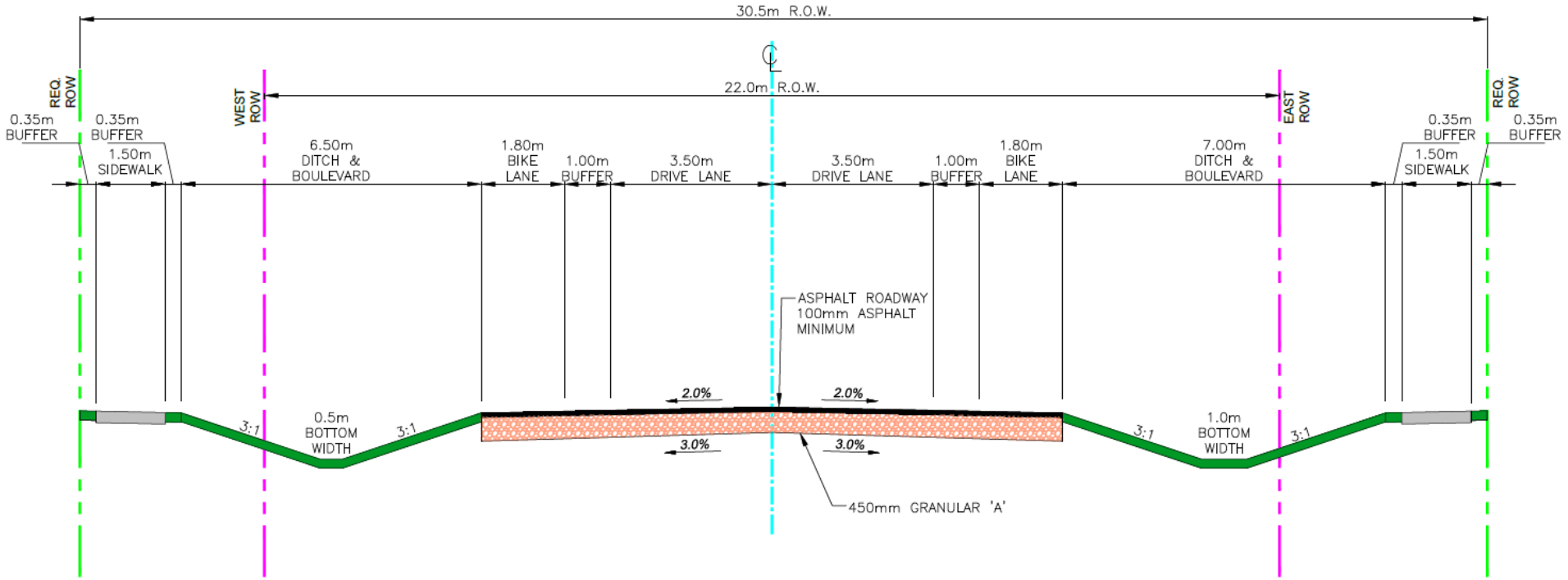


Figure 11: Rural Collector Road with Fully Paved Shoulders

7.1.3.3 Option C - Urban Collector Road with Cycle Tracks

This urban cross-section (**Figure 12**) alternative utilizes the entire right-of-way to provide sidewalks, cycle tracks, and a fully paved roadway with curb and gutter, illumination, and a storm sewer system for drainage. This roadway accommodates all modes of transportation, with the exception of large agricultural vehicles. Agricultural vehicles would need to use alternative access points off of Main Street and Road 2 West to access the farm fields. Temporary field entrances could be considered along the new collector road corridor to accommodate access requirements for agricultural vehicles attempting to cross from one side to the other. This option is consistent with the CTMP which identifies this future corridor as a cycle track facility. This option is estimated to have the highest cost out of the three options. Underground piping is shown for conceptual purpose only. Alignment and depth to be confirmed during detailed design.

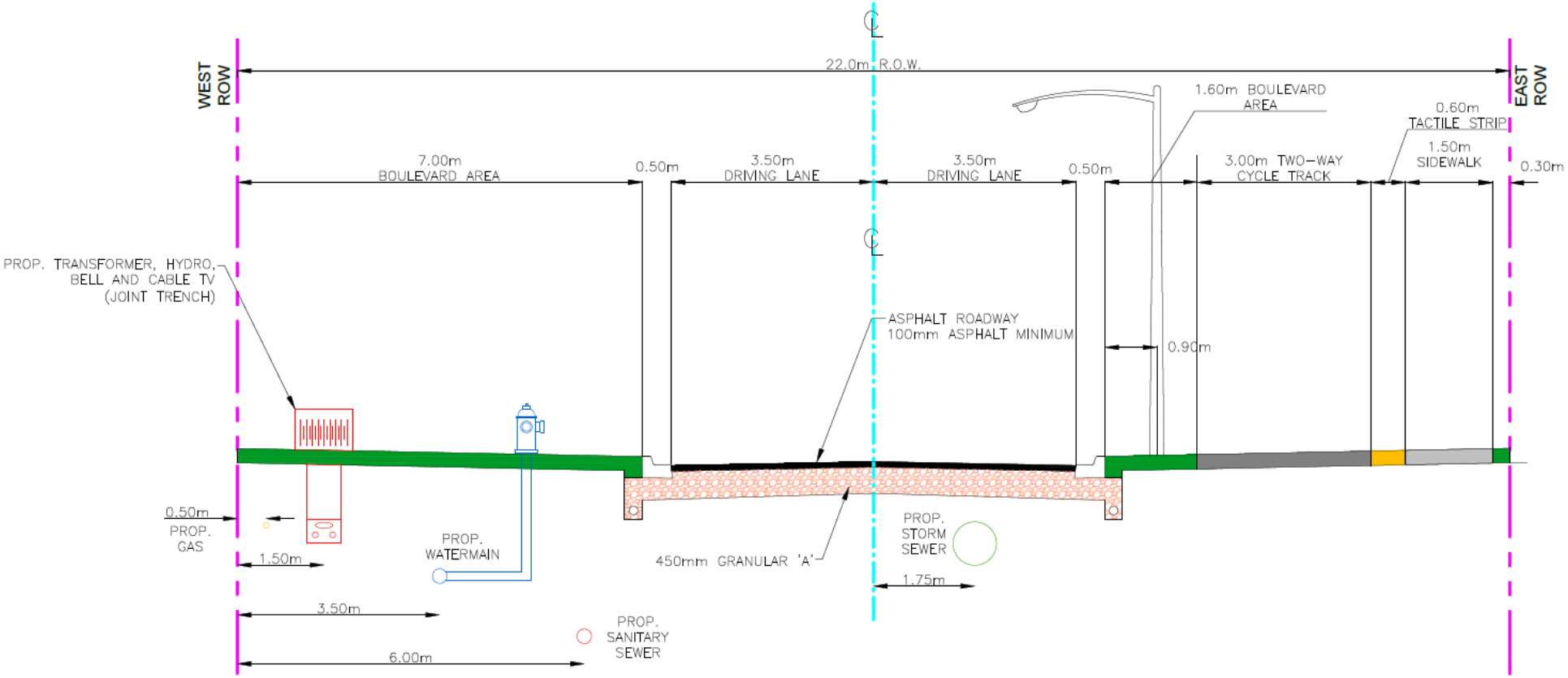


Figure 12: Urban Collector Road with Cycle Tracks

7.1.3.4 Recommended Cross-Section

The recommended road cross-section is Option C – Urban Collector Road with Cycle Tracks. This cross-section will provide a cycle track and sidewalk with curb and buffer between the facilities and the roadway, providing a safer environment than on-road cycling facilities for this type of corridor. It will also allow for future cycle tracks and sidewalks to be added along the west side of the road when future development occurs. This alternative allows for storm sewer with stormwater management facilities to be introduced within the urban cross-section while eliminating the need for large ditches and swales. This cross-section would be considered as the ultimate solution for the roadway and accommodates future residential development on both the east and west sides of the proposed corridor.

Option A – Rural Collector with Single Multi-Use Trail can be used as an interim solution for the roadway, with additional improvements implemented as the land use adjacent to the corridor evolves and an ultimate urban collector cross section would be appropriate.

Option B – Rural Collector with Fully Paved Shoulders (including buffered bike lanes) can be used as an interim solution for the roadway, with additional improvements implemented as the land use adjacent to the corridor evolves and an ultimate urban collector cross-section would be appropriate.

7.2 Recommended Design

The recommended design alternative for the study area includes the following alignment, intersection, and cross-section improvements:

- Alignment – Option 2 – Widen Fox Lane to the East
- Intersection – Signalized
- Cross-Section – Option C – Urban Collector Road with Cycle Tracks

The recommended design alternative for the road alignment involves using most of the existing Fox Lane road alignment and widening it to the east of its existing platform, signalizing the intersection of Main Street and Heritage Road, and adopting the ultimate urban cross-section including cycle track facilities in accordance with the CTMP.

The use of the existing Fox Lane platform and alignment and widening it to the east presents technical and environmental advantages when compared to other alignment options. It minimizes private property impacts on agricultural land and future development lands as well as optimizes grading and earth fill opportunities within the future corridor. It is a logical evolutionary upgrade to the existing Fox Lane roadway from narrow gravel roadway to a two-lane urban collector road.



The implementation of traffic signals at the intersection of Main Street and Heritage Road presents the best opportunity for a high level of service for traffic operations well into the future while at the same time mitigating property impacts. It is expected that reduced utility impacts and overall lower capital cost would be more favorable for a signalized intersection compared to roundabout.

The recommended road cross-section utilizes the entire right-of-way to provide sidewalks, cycle tracks, and a fully paved roadway with curb and gutter. The roadway accommodates all modes of transportation, with the exception of agricultural vehicles, which would be required to use alternate access points off Main Street and Road 2 West to access farmlands adjacent to the extension of Heritage Road.

8 Project Description

The purpose of the project is to identify intersection, alignment, and cross-section improvements for the West Side Collector Road. Following the process to select the Preferred Alternative, the selected preliminary design was further developed. This section describes the project recommendations for major elements of this preliminary design, including design elements, costs, and environmental impacts.

The Town of Kingsville planning documents (i.e., the CTMP, Town of Kingsville Official Plan, County Wide Active Transportation System Master Plan, and County of Essex Official Plan) identify the need to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development. The design seeks to accommodate existing and future travel demands by enabling the safe and efficient movement of cyclists, pedestrians, and vehicles, while still preserving the integrity of the study area and surroundings.

8.1 Road Design Elements

The recommended road design elements consist of a proposed collector road extending from Heritage Road to Road 2 West, that includes active transportation infrastructure, as well as improvements at the intersection of Heritage Road and Main Street. The preliminary design of the proposed collector road was completed assuming a maximum posted speed of 60 km/h and a maximum design speed of 70 km/h. The speeds are in compliance with the CTMP for this classification of roadway.

The *Preliminary Design Drawings* of the proposed improvements are included in **Appendix H**. The drawings are at a preliminary design level of detail and will be further refined in the detailed design phase. A summary of the improvements is provided in the subsequent sections.

8.1.1 Geometrics

8.1.1.1 Horizontal Alignment

The recommended road alignment of the proposed collector road is to widen the existing Fox Lane to the East. The recommended alignment was determined based on technical analyses and agreements and discussions with area property owners and developers. This alignment is approximate and will be refined as required during detailed design following detailed field investigations. The alignment supports a safe, multi-modal corridor, makes best use of land available along the corridor in coordination with future land development, and accommodates existing and future traffic conditions within the Town.



The alignment was selected for the following reasons:

- Aligns with the south leg of Heritage Road intersection
- Makes best use of land available along the corridor in coordination with future land development
- Appropriate use of the existing Fox Lane road allowance as a suitable evolutionary upgrade to Fox Lane
- Other alignment options create misalignment issues with the Heritage Road intersection and generally require more land acquisition

It should be noted that the segment of the proposed collector road just south of Road 2 West and at the intersection with Road 2 West will be designed by others and completed at a later date.

The preliminary horizontal curve geometry for the proposed collector road is summarized in **Table 7**. However, as noted, this alignment is approximate and will be refined as required during detailed design following detailed field investigations.

Table 7: Proposed Collector Road – Horizontal Curves

Curve No.	Parameter	Start Station	End Station	Radius (m)	Spiral Parameter A-Value (m)
1	Curve	1+001	1+075	270	
2	Spiral Curve	1+131	1+194		110
		1+194	1+194	190	
		1+194	1+202		37
3	Spiral Curve	1+212	1+276		110
		1+276	1+307	190	
		1+307	1+371		110
4	Spiral Curve	2+094	2+158		110
		2+158	2+197	190	
		2+197	2+261		110
5	Spiral Curve	2+477	2+540		110
		2+540	2+580	190	
		2+580	2+643		110

The proposed horizontal alignment of Main Street, and the future proposed connections along the proposed collector road (referred to as ‘Proposed Connector Road C’ on the

Preliminary Design Drawings and 'Street O' in the *Traffic Study* and 'Proposed Connector Road B' on the *Preliminary Design Drawings* and 'Street L' in the *Traffic Study*) are tangent and as such, there is no curve information to document.

8.1.1.2 Vertical Alignment

Proposed preliminary vertical alignments were developed for the proposed collector road, Main Street, and the future proposed connections along the proposed collector road (referred to as 'Proposed Connector Road C/Street O' and 'Proposed Connector Road C/Street L'). It should be noted that these are approximate and will be refined as required during detailed design.

8.1.1.2.1 Proposed Collector Road

The preliminary vertical curve geometry for the proposed collector road is summarized in **Table 8**.

Table 8: Proposed Collector Road – Vertical Curves

Curve No.	PVI Station	Crest/Sag	K Value	Length of Vertical Curve (LVC) (m)
1	1+030	Crest	16	20
2	1+056	Sag	17	20
3	1+229	Sag	2161	107
4	1+501	Crest	40	49
5	1+632	Sag	244	187
6	1+955	Crest	86	70
7	2+297	Sag	266	242
8	2+753	Crest	85	70
9	2+917	Sag	68	70

Based on the profile, the vertical conditions are considered to be relatively flat along the proposed collector road with grades ranging from -0.51% to 1.00%. Generally, the grades throughout this road segment meet the desirable minimum grade of 0.50%, absolute minimum of 0.30% and maximum of 5%, as outlined in the *Town of Kingsville Development Manual* (Town of Kingsville, 2020).

8.1.1.2.2 Main Street

The preliminary vertical curve geometry for Main Street is summarized in **Table 9**.



Table 9: Main Street – Vertical Curves

Curve No.	PVI Station	Crest/Sag	K Value	Length of Vertical Curve (LVC) (m)
1	5+095	Crest	70	70
2	5+179	Crest	185	70
3	5+327	Sag	158	40

Based on the profile, the vertical conditions are considered to be relatively flat along Main Street with grades ranging from -0.88% to 0.50%. Generally, the grades throughout this road segment meet the desirable minimum grade of 0.50%, absolute minimum of 0.30% and maximum of 5%, as outlined in the *Town of Kingsville Development Manual* (Town of Kingsville, 2020).

8.1.1.2.3 Proposed Connector Road C / Street O

The recommended vertical alignment of the future proposed connection, referred to as 'Proposed Connector Road C/Street O', is considered to be relatively flat with one vertical curve. The curve is identified in **Table 10**.

Table 10: Proposed Connector Road C / Street O – Vertical Curves

Curve No.	PVI Station	Crest/Sag	K Value	Length of Vertical Curve (LVC) (m)
1	4+088	Crest	236	70

The proposed grades range from -0.47% to -0.30%. Generally, the grades throughout this road segment meet the desirable minimum grade of 0.50%, absolute minimum of 0.30% and maximum of 5%, as outlined in the *Town of Kingsville Development Manual* (Town of Kingsville, 2020).

8.1.1.2.4 Proposed Connector Road B / Street L

The recommended vertical alignment of the future proposed connection, referred to as 'Proposed Connector Road B/Street L', is considered to be relatively flat with no vertical curves and a proposed grade of -0.30%. Generally, the grades throughout this road segment meet the absolute minimum of 0.30% as outlined in the *Town of Kingsville Development Manual* (Town of Kingsville, 2020).

8.1.1.3 Cross-Section

The recommended cross-section of the proposed collector road is an urban cross-section with cycle tracks, as depicted in **Figure 13**.



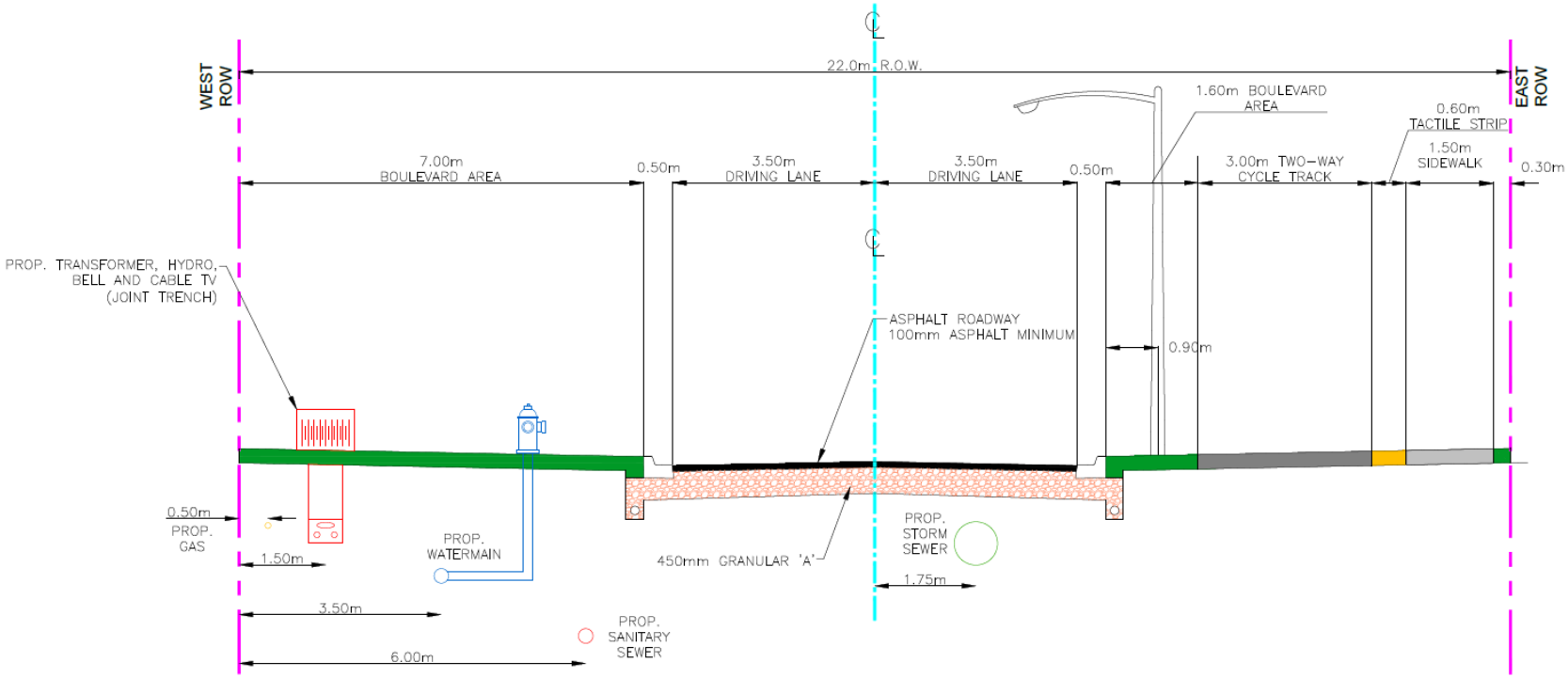


Figure 13: Proposed Cross-Section

The proposed cross-section can be accommodated within a 22.0 m-wide right-of-way. This is consistent with the guidance from Section 4.1.1. of the *Town of Kingsville Development Manual*, which indicates that for collector roads, right-of-way widths shall be increased from 20 meters to a minimum width of 22 metres.

Two driving lanes are proposed (one in the northbound direction and one in the southbound direction) with curb and gutter on either side. A two-way cycle track with a sidewalk separated by a tactile strip will be implemented on the east side of the roadway. The cycle track will be separated from the curb by a boulevard area, which can accommodate roadway lighting and utility poles. Underground utilities can also be accommodated within the urban cross-section. A boulevard is proposed on the west side of the roadway where a future cycle track and sidewalk can be added when development occurs. Storm sewer and storm-water management facilities are introduced with an urban cross-section eliminating the need for large ditches or swales, managing surface water conveyance within the study area. Field entrances and crossing points will be provided along the route for continued agricultural use of the adjacent lands.

A summary of the cross-section details is included below:

- Northbound lane width: 3.50 m
- Southbound lane width: 3.50 m
- Boulevard width: 1.60 m east side & 7.00 m west side
- Two-way cycle track width: 3.00 m east side
- Tactile strip: 0.60 m east side
- Sidewalk: 1.50 m east side
- Roadway lighting / utility poles: 0.9 m from curb on east side
- Proposed transformer for utilities: 1.50 m to the east of the proposed west ROW
- Proposed gas: 0.50 m to the east of the proposed west ROW

Underground piping is shown for conceptual purpose only. Alignment and depth to be confirmed during detailed design.

8.1.1.4 Cross-Fall

In accordance with Section 5.1 of the *Town of Kingsville Development Manual*, the roadway shall be designed to a desirable 3.0% cross-fall where feasible to provide positive drainage to the curbs. In intersection areas, the normal cross-fall of the



intersecting roadways may be reduced to avoid abrupt grade changes for through traffic, however, a minimum cross-fall of 1.0% is desirable with absolute minimum being 0.6% to maintain good surface drainage.

8.1.1.5 Superelevation

Superelevation is recommended to be introduced at the horizontal curves along the Proposed Collector Road, north of the Heritage Road and Main Street intersection. These horizontal curves are documented as Curve No. 3, 4 and 5. The proposed maximum superelevation is 6%.

8.1.2 Heritage Road and Main Street Intersection

The proposed intersection design includes a four-approach intersection, with traffic signals, left turn lanes on all approaches, eastbound and northbound right-turn lanes, and pedestrian crossings for safe movement around and through the intersection.

The following lane configuration is proposed:

- The west leg of the intersection (Main Street West) will include a westbound and eastbound through lane, a right turn lane and a left turn lane.
- The north leg of the intersection (Proposed Collector Road/West Side Collector Road/Street A) will include a left turn lane, a northbound through lane and a southbound combined through and right turn lane.
- The east leg of the intersection (Main Street West) will include a left turn lane, an eastbound through lane and a westbound combined through and right turn lane.
- The south leg of the intersection (Heritage Road) will include a northbound and southbound through lane, a right turn lane and a left turn lane.

The proposed width of the through lanes is 3.50 m minimum and the proposed width of the turning lanes is 3.25 m.

Pedestrian crosswalks are proposed to be implemented on all intersection legs to provide safe and controlled intersection crossings for pedestrians. The pedestrian crosswalks are proposed to be 2.7 m in width. The crossing treatments for the cycle tracks will be reviewed and confirmed during the detailed design.

The layout of the traffic signal poles will be developed during the detailed design.



8.1.3 Future Intersections

There are two proposed intersections to a future development located on the east side of the Proposed Collector Road/West Side Collector Road/Street A. One intersection is located approximately 400 m north of the Heritage Road and Main Street intersection and is referred to as Street O and the second intersection is located approximated 700 m north of the Heritage Road and Main Street intersection and is referred to as Street L. The minor road of these intersections is proposed to be stop controlled.

8.1.4 Entrances

Existing entrances in proximity of the Heritage Road and Main Street intersection will be reviewed and potential relocations and modifications will be assessed during the detailed design. Consideration for field entrances along the new collector road will be undertaken during detailed design.

8.1.5 Active Transportation

As previously noted, the active transportation facilities recommended along the proposed collector road incorporate a two-way cycle track facility and a separate sidewalk on the east side of the roadway. A future cycle track and sidewalk can be added to the west side of the roadway in the future when development occurs. These active transportation facilities cater to a broad range of users of various abilities, providing a safe, multi-modal corridor. The CTMP recommends future proposed active transportation infrastructure connecting to the proposed collector road.at the intersection of Heritage Road and Main Street.

8.1.6 Stormwater Design

The proposed collector road will increase the net impervious area from the existing conditions, resulting in increased flow and pollutant runoff. The roadway's minor system will include catchbasins and a proposed storm sewer system. Major storm events will drain by overland flow and temporary swale alignments along the roadway. **Figure 14** provides the proposed conditions stormwater management (SWM) drainage area plan.

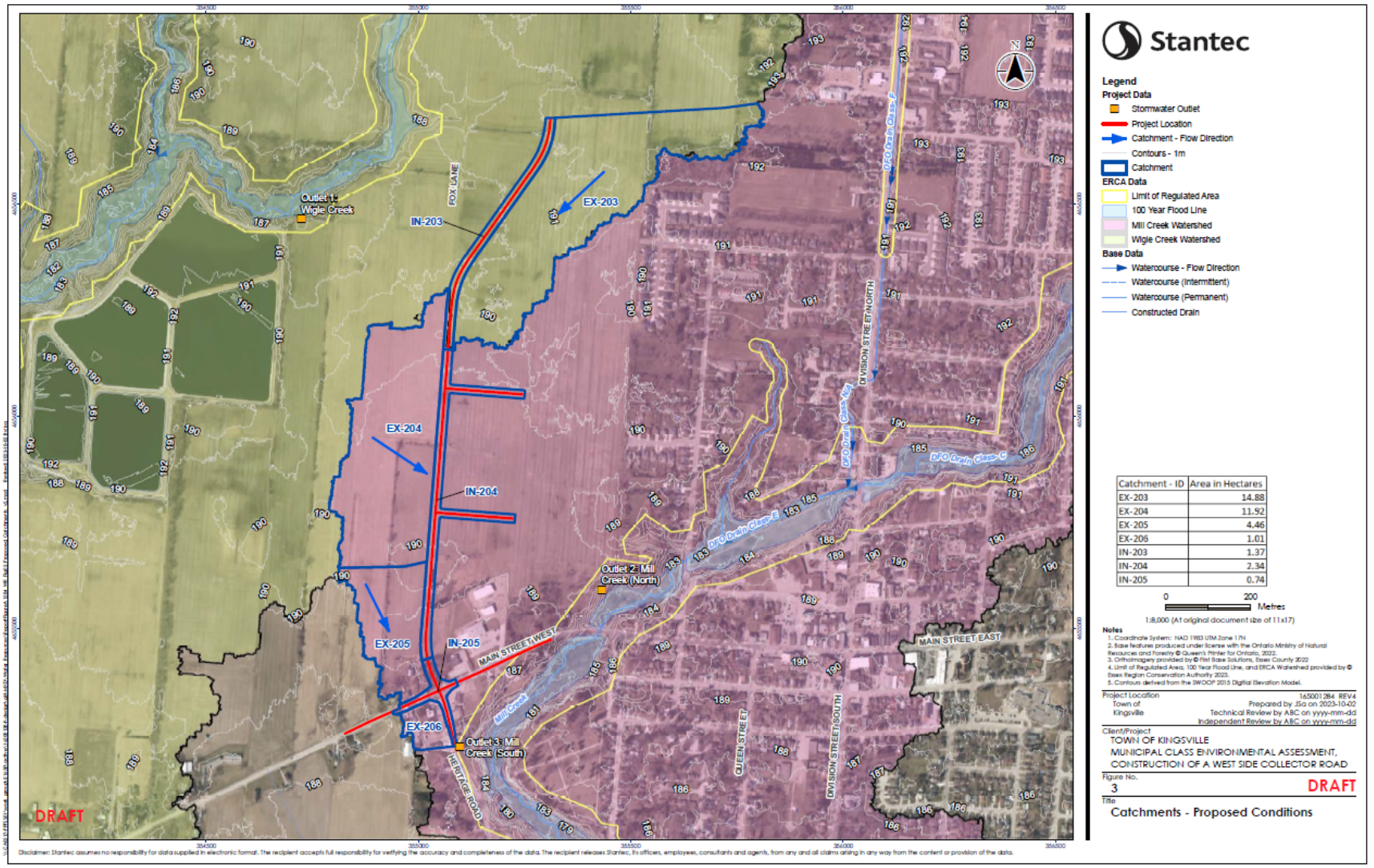


Figure 14: Catchments - Proposed Conditions

The stormwater management design is anticipated to be constructed in two stages: temporary conditions and ultimate conditions. The temporary conditions represent the condition where the proposed roadway has been constructed and lands to the east and west of the site remain in existing conditions (undeveloped). The ultimate conditions represent the roadway and the lands to the east and west as developed. The temporary conditions provide stormwater management solutions to support development of the proposed roadway, but do not provide sufficient SWM controls for any future development surrounding the roadway. The ultimate conditions will be achieved as a result of the development to the east and west of the proposed roadway. When the future development to the east and west are constructed, the flow and storage requirements of the roadway will need to be accounted for within their site's stormwater management plans. The proposed stormwater management facilities can be combined or expanded in the future based on the future design and consultation with adjacent landowners. At this time, the construction phasing of the roadway and the development to the east and west is not confirmed.

8.1.6.1 Recommendations

A hydrological model was prepared, and an overview of the results for each of the proposed catchments in **Table 11**, are summarized below. Additional information related to the modeling, analysis and stormwater management recommendations are provided in the *Road 2 West Main Street West Municipal Class Environmental Assessment Stormwater Management Report* available in **Appendix F**.

Table 11: Proposed Catchment Conditions

Catchment ID	Total Area (ha)	Imperviousness (%)	Outlet Number	100-year Peak Flow Rates (m^3/s)
EX-203	14.88	0	1	1.094
EX-204	11.92	0	2	0.894
EX-205	4.46	5	3	0.388
EX-206	1.01	60	3	0.362
IN-203	1.37	90	1	0.696
IN-204	2.34	90	2	1.174
IN-205	0.74	90	3	0.411

The peak flow rates in the proposed conditions are calculated to exceed the allowable release rates, due to the increase in impervious surface within the internal catchments. Stormwater control measures are required to service all internal catchments, prior to discharging to the receiving watercourse / private or municipal sewer system. Dry ponds are proposed to service catchments IN-203 and IN-204, in the temporary conditions. Due to space and grading constraints, an underground storage system is recommended

to service catchment IN-205 in the temporary and ultimate conditions. Due to grading constraints and cover issues, the dry pond servicing catchment IN-204 is sized to control the flow from IN-204 to the Allowable Release Rates (ARR) and safely convey the flow from EX-204 through. The required storage volumes to control the post development flows to the existing conditions are summarized in **Table 12.**

Table 12: Required Storage

Storage Unit ID	Outlet Number	Watershed Outlet	Total Storage Volume (m^3)	Stormwater Management Control Measure	Estimated Footprint Area (m^2)
IN-203	1	Wigle Creek	1116	Dry Pond	1248
204	2	Mill Creek (North)	369	Dry Pond	480
IN-205	3	Mill Creek (South)	590	Underground Chamber	-

To covey flow from the proposed ROW to the attributed dry pond and subsequent outlet, grassed swales are proposed and are shown on **Figure 15**. The proposed locations are preliminary and consultation with the property owners will be undertaken during detailed design.

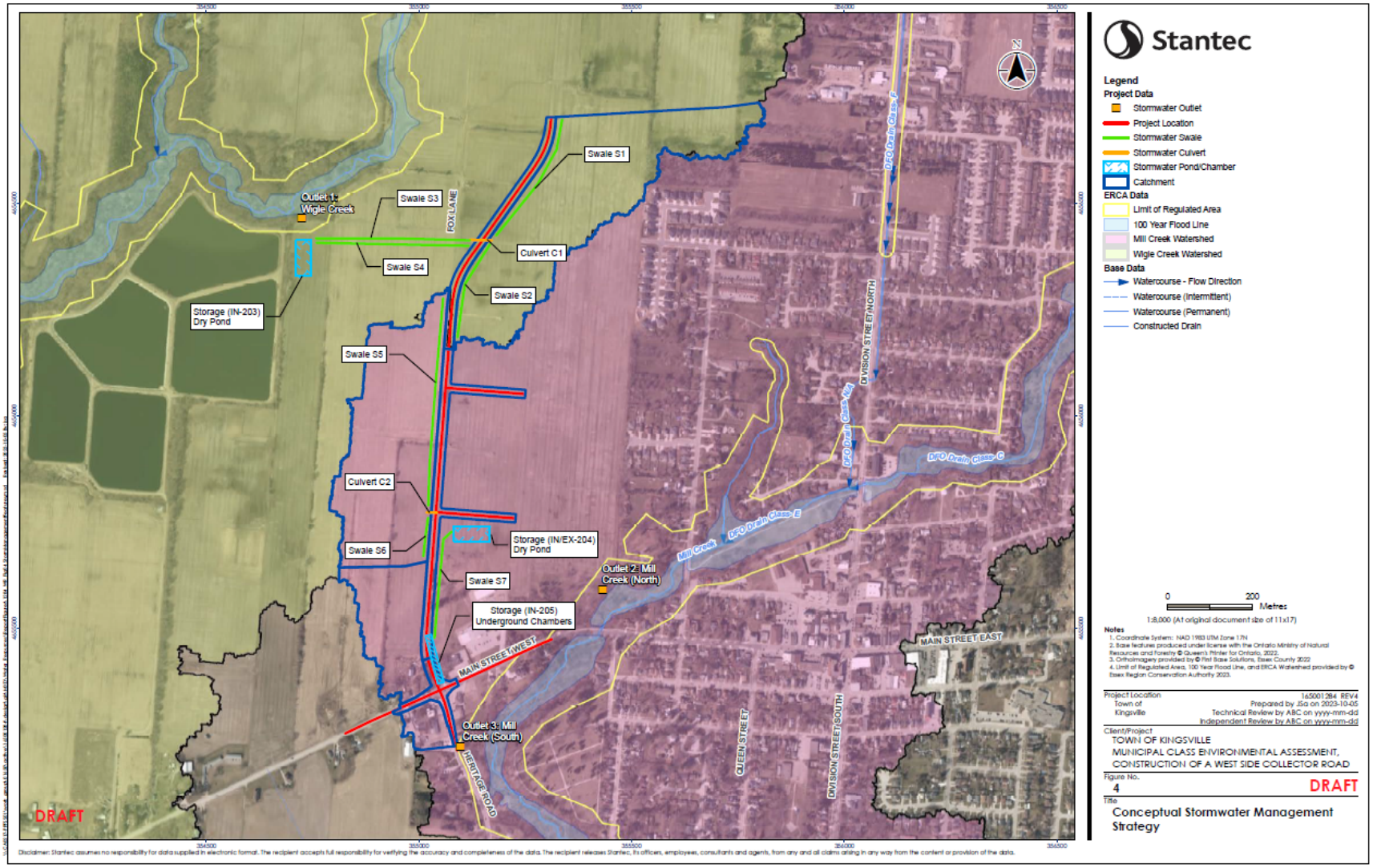


Figure 15: Conceptual Stormwater Management Strategy

Temporary grassed swales have been positioned along the roadside to direct flow to temporary culvert crossings of the proposed roadway where external catchments will drain. Each swale was sized according to its prorated flow using the Urban Stress Test. A brief summary of the swale sizes can be found in **Table 13**.

Table 13: Swale Sizing

Swale ID	Contributing Catchment	Location Description	Cross Section	Contributing Area	Prorated Flow (m^3/s)	Channel Slope (m/m)	Maximum Depth (m)	Minimum Depth (m)
S1	EX-203 (East of Road)	North of Centerline	Triangular	67%	0.972	0.00455	1.05	0.5
S2		South of Centerline	Triangular	33%	0.478	0.00745	1.05	0.5
S3	EX-203 (West of Road)	Towards Wigle	Triangular	100%	1.450	0.00100	1.05	0.9
S4	IN-203 (West of Road)	Towards pond	Triangular	100%	0.525	0.00100	0.6	0.6
S5	EX-204 (West of Road)	North of Centerline	Triangular	81%	0.958	0.00421	1.05	0.7
S6		South of Centerline	Triangular	19%	0.226	0.00825	1.05	0.3
S7	IN-204 (East of Road)	Towards pond	Triangular	19%	0.168	0.00392	0.3	0.4

Note: All Swales are modelled with an assumed side slope of 3:1 (H:V)

To provide the necessary drainage across the proposed roadway, two temporary centerline culverts have been sized to convey the 100-year design storm without over-topping the ROW. As outlined in **Figure 15**, catchment EX-203 will have a culvert draining from the east to west and will outlet to the grass swale located west of the road. The other culvert will be located within catchment EX-204 draining from the west to east, outletting to the proposed roadway's storm sewer network which is sized to convey the 100-year design storm event from the external lands to its outlet at the IN-204 dry pond. Further specifics of the centerline culverts are included in **Table 14**.

Table 14: Centreline Culverts

Culvert ID	Catchment ID	Cross Section	Material	Diameter (mm)	Slope (%)	Outlet
C1	EX-203	Circular	CSP	1050	0.3	West of Road – Swale S3
C2	EX-204	Circular	CSP	1050	0.3	Storm sewer within proposed roadway



8.1.6.2 Water Quality

To account for the quality of the runoff water in the proposed conditions, Oil/Grit Separator (OGS) units will be installed online within the storm sewer system prior to the discharging to the proposed water quantity features.

8.1.6.3 Climate Change

In accordance with the ERCA's *Windsor/Essex Region Stormwater Management Standards Manual*, an assumed 150 mm rainfall event, defined as an Urban Stress Test was modelled. This event is the current recommended approach to assess resiliency and vulnerability of design for the potential impacts due to Climate Change.

The event was modelled to assess the conveyance capacity of the proposed stormwater management infrastructure. The proposed dry ponds and grassed swales are all calculated with capacity to covey the Urban Stress Test without overtopping.

8.1.6.4 Erosion Control/Water Balance

In accordance with the erosion control/water balance criteria outlined in this report, the proposed design is to provide an onsite capacity to retain the Runoff Volume Control Target (RVCT) from the proposed ROW, based on the 90th percentile of rainfall.

The ERCA's *Windsor/Essex Region Stormwater Management Standards Manual*, provides flexibility in the implementation of the RVCT, in the form of a control hierarchy:

- Priority 1 is to retain the runoff with LIDs
- Priority 2 is to capture and release the runoff volume at a reduced rate and volume with LIDs
- Priority 3 is to use other technologies to provide detention and treatment of runoff.

During detailed design, investigation of the site soil conditions should be completed. After this investigation has been completed, an analysis of whether implementation of LIDs onsite is practical should be completed. If practical, LIDs can be sized to meet the required RVCT. Due to space constraints within the ROW, it is anticipated the most suitable LIDs are underground infiltration chambers, tree boxes, or bioretention areas between the ROW and the proposed Multi-Use Pathway.

8.1.7 Watermain

The West Side Collector Road Watermain servicing area in Kingsville, ON is situated in the vicinity Fox Lane. The intersecting east-west directional roads are Road 2 West to

the north and Main Street to the south. Based on the *Kingsville Water Servicing Report (2017)*, the proposed watermain to be constructed on the West Side Collector Road, which generally follows the existing alignment of Fox Lane, is 400 mm with connections on Road 2 West and Main Street. The south connection is proposed to be at the existing 400 mm watermain located in the westbound lane of Main Street. It is recommended to abandon the previously installed 400mm tee and stub as it will be located directly inline with the centerline of the proposed West Side Collector Road. The proposed running line will shift the connection to the west and allow for a consistent running line north along West Collector Road (also known as Fox Lane). The tie in to the existing watermain on Main Street will require a short duration water service shutdown to install a new tee and isolation valve. The existing tee and stub could be removed at this time and valving in the intersection modified to better suit operations and maintenance of the system. Due to the location of the existing 400mm watermain on Main Street traffic disruptions will be unavoidable. Temporary traffic management will be required to complete the work.

The north connection is proposed to be at the existing 250 mm on located in the south ditch area of Road 2 West. The connection will require a short duration water service shutdown to allow for a new tee and isolation valve to be installed. Impacts to traffic movement is anticipated to be minimal. As noted in the *Kingsville Water Servicing Report,* there are future plans for upsizing of the 250mm watermain on Road 2 West to a 400mm watermain*.)*. There are several advantages to providing two connection points to loop the watermain on West Collector Road, which are listed below:

- Reduces water quality problems by allowing circulation at time of low flow and helps prevent settlement accumulation in the pipe.
- Provides improved reliability in the event of a main break and maintenance activities.
- Promotes improved water hydraulics and water pressure within the system.

Eliminates dead ends in the distribution system that may require blow offs to maintain water quality increasing operations and maintenance costs. **Figure 16** below shows the full build out of watermain network as detailed in the *Kingsville Water Servicing Report (2017):*

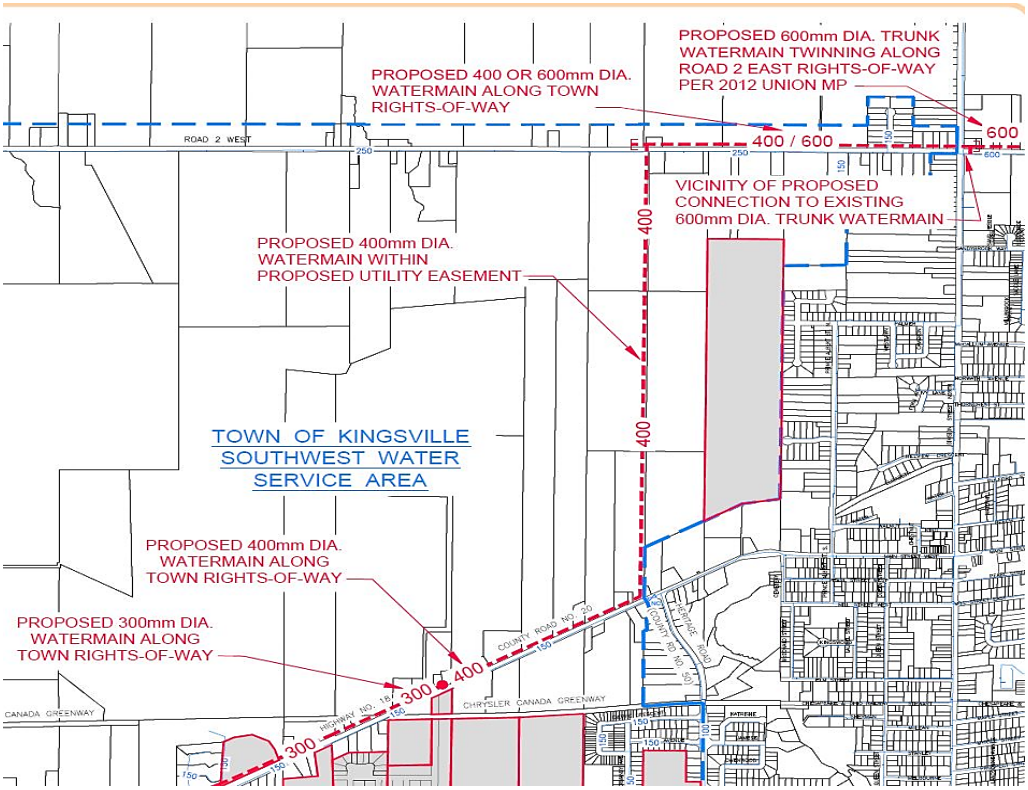


Figure 16: Proposed Servicing Strategy

The as-built drawings for Main Street were provided which include a potential stub location. Engineering drawings for the future proposed watermain installation on Road 2 West and Main Street were also provided.

During the Preliminary Design process, discussions with the Town were held to better understand the needs of the service area and to ensure adequate information was received to produce a fine-tuned design. After consultations with the Town and reviews of the existing conditions and future proposed projects under the *Kingsville Water Servicing Report (2017),* the proposed watermain is shown in the *Preliminary Design Drawings* included as **Appendix H**.

8.1.8 Sanitary Sewer

The sanitary servicing area is situated in the vicinity of West Side Collector Road between Road 2 West to the north and Main Street West to the south. Based on the 300 mm sanitary pipe was selected for future sanitary servicing. A sanitary connection is to be made on the Amico stub near the south end of the West Side Collector Road.

The alignment of the existing forcemain will generally run through the southbound driving lane of West Side Collector Road from Main Street West, north for approximately

500m before heading west towards the existing sewage lagoons. The alignment of the sewers will need to be located to avoid conflicting with the sanitary forcemain and to ensure access and maintenance on the sewers is not impacted. The exact location of the forcemain should be verified in the field during the detailed design phase. The sanitary flows from the Collector Road Development Area will be conveyed through the proposed Conklin Development along the southern most local road. The downstream run of sanitary sewer between the Collector Road Development and the tie in location for the Conklin Development will need to be upsized to convey the additional flows, potential for upsizing and cost sharing is noted in the Memorandum of Understanding. Flows from both the Collector Road Development Area and proposed Conklin development will discharge flows to the Mill Creek Trunk Sewer which has available capacity. This will decrease capital costs and further upgrades downstream.

Four alternative options for the discharge location were reviewed and is discussed further in Section 8.1.8.1.

8.1.8.1 Discharge Location Alternatives for Collector Road Development Flows

Through the Preliminary Design stage, four alternatives were developed to provide the required sanitary servicing to meet the Town's current and future needs which considered the available discharge locations and available downstream capacity available.

Alternative 1 – Connected the new sanitary sewer on West Side Collector Road to the existing 300mm sanitary sewer on Main Street West. Existing sewers were not replaced under this option. The existing sewers can handle approximately 60% of the proposed development flows.

Alternative 2 – Requires a new sanitary sewer extending approximately 450m east of West Side Collector Road, and along Main Street and connection to the existing 450 mm Mill Creek Trunk Sewer. The new sewers would be sized to convey the ultimate design flows for full build out. The existing Mill Creek Trunk Sewer currently has sufficient capacity to convey flows to the downstream Heritage Road Pumping Station.

Alternative 3 – Connect the new sanitary sewer on West Side Collector Road to the existing 300mm sanitary sewer on Main Street West. The existing 300mm sewer runs along Main Street from Fox Lane to Heritage Road, then extends south on Heritage Road (also known as the Heritage Road Trunk Sewer) to the existing Heritage Road Pumping Station for a total length of approximately 300m. The Heritage Road Trunk sewer would require upsizing to convey the ultimate flows with extensive impacts to existing roads and increased capital costs.

Alternative 4 – Conveys flows through the proposed Conklin development which ultimately outlets to the Mill Creek Trunk Sewer. Modifications would be required to the

proposed sanitary inverts and upsizing of the pipe to allow for the sanitary sewer to be extended to the west limits of the Conklin development to allow for future connections to service the West Side Collector Road Development area. There is currently a Memorandum of Understanding (MOU) to accommodate this servicing option. Alternative 4 allows for full build out of the development area.

The four alternatives delineating the discharge locations and existing routing are identified in Figure 17**.**

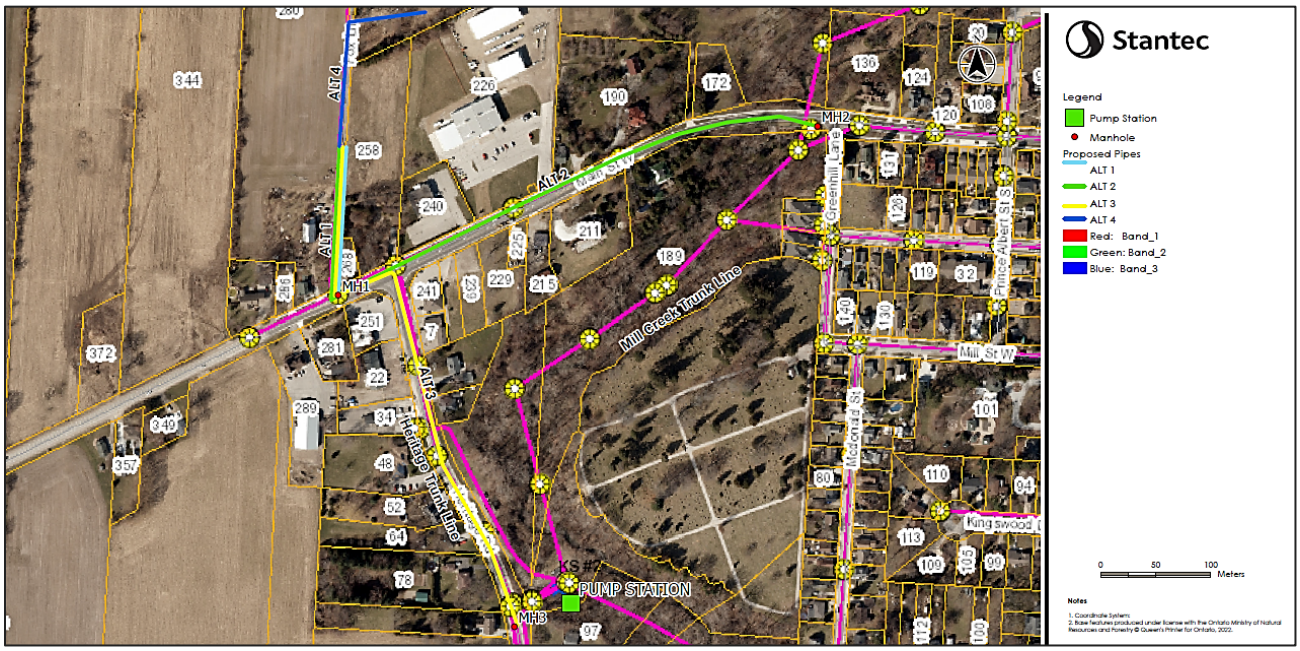


Figure 17: Sanitary Alternatives

An evaluation of the alternatives was completed and is summarized below:

Alternative 1 – Due to the limited capacity of the existing downstream sewers and inability to meet the ultimate servicing strategy and higher capital costs, this option was not preferred.

Alternatives 2 & 3 – Were not deemed to be the preferred solutions due to the existing sewer network downstream being undersized to convey the flows from the ultimate service area. Both options would trigger large infrastructure replacement through already developed areas with significant impacts to residents and traffic movement. The town has recently completed road improvement along Main Street and Heritage Road. Reconstructing the roads again within a such a short duration is undesirable. Both options have high capital costs.

Alternative 4 – The preferred option is alternative 4 as it provides sufficient capacity for the full sanitary service area. The Mill Creek Trunk sewer downstream has sufficient capacity to convey the ultimate flows and does not require any replacement of existing infrastructure. As previously noted, upsizing the sanitary sewer and adjusting the inverts can be accommodated through the Conklin Development and are in line with the Memorandum of Understanding.

A capacity analysis was completed for the Mill Creek Trunk downstream of the connection point and resulted in the following findings:

- Mill Creek trunk sewer is identified in the Dillon Sanitary Servicing Report. There is a flow meter “K3” located on the sanitary trunk sewer. The flow meter “K3” is located one MH downstream from the proposed connection location from Conklin development.
- The Dillon Sanitary System Master Plan reports notes 61% to 80% capacity is available for the sanitary trunk sewer at the Developers discharge location. The sanitary force main from the pumpstation going to the lagoon appears to have over 80% capacity available.
- Flows documented within the Dillon report are based on a 2031-year projection. The Town of Kingsville Official Plan (September 2020) includes a land use plan for future development (residential and agricultural) to guide growth until the year 2031.
- Design flows for the area are 450 L/d based on the Kingsville Design manual. However, actual flows on Mill Creek Trunk Line based on the Dillon report are approximately 190 L/d.
- Dillon’s Sanitary Report utilized an approximate 250 L/day for new development.
- Theoretical Capacity of Mill Creek Trunk is 200 L/s.
- Based on the flow meter data, the max flow under wet conditions produced 30 L/s and averaged around 14 L/s between September 2018 to September 2019 (See **Figure 19**).
- 98.4 L/s (max new development capacity as per MOU) + 30 L/s (Rain event peak flow) = 128.6 L/s.
- Total flow of 128.6 L/s is significantly less than the theoretical capacity of Trunk at 200L/s.

The trunk line alternatives are shown in **Figure 18**.

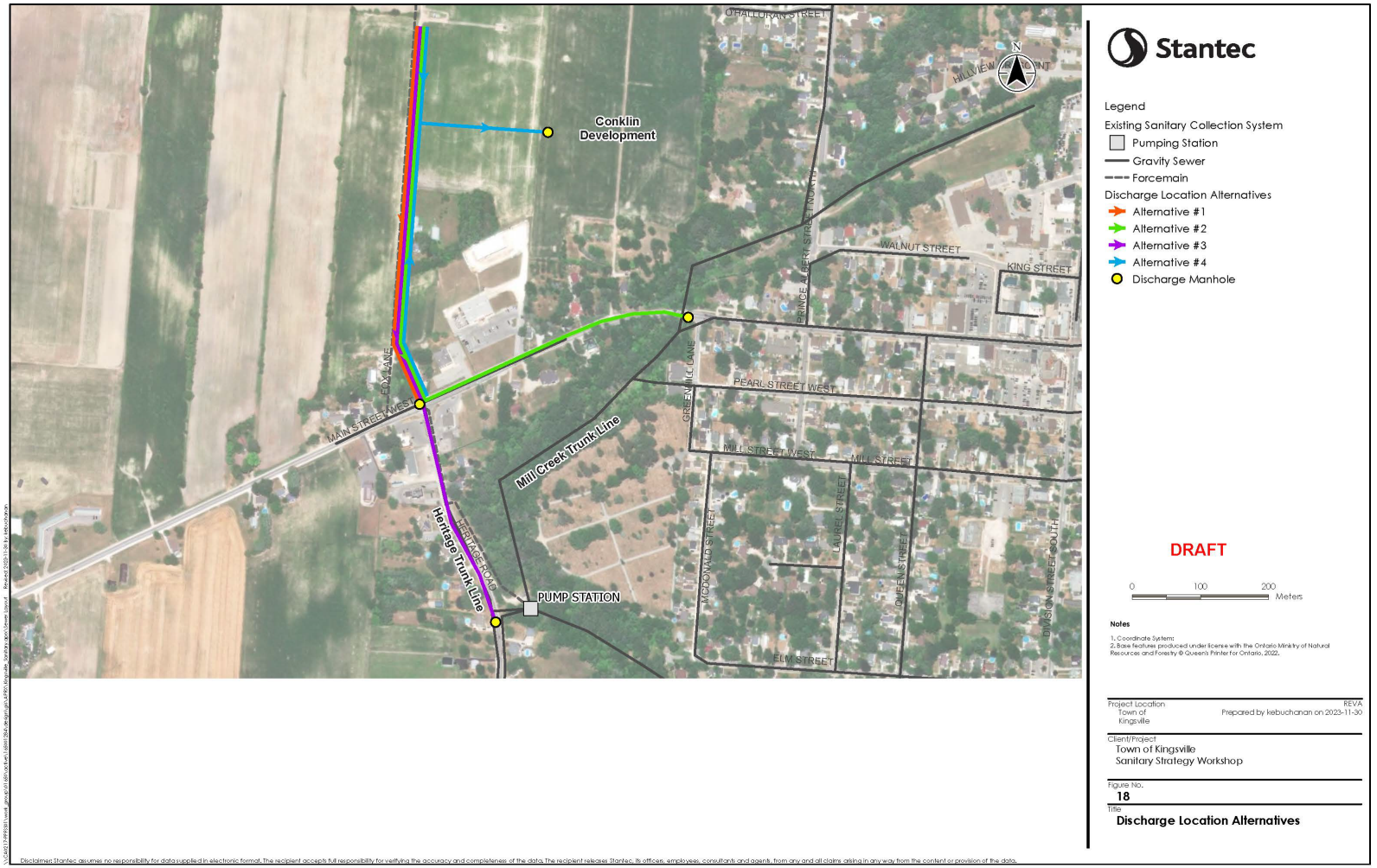


Figure 18: Trunk Line Alternatives

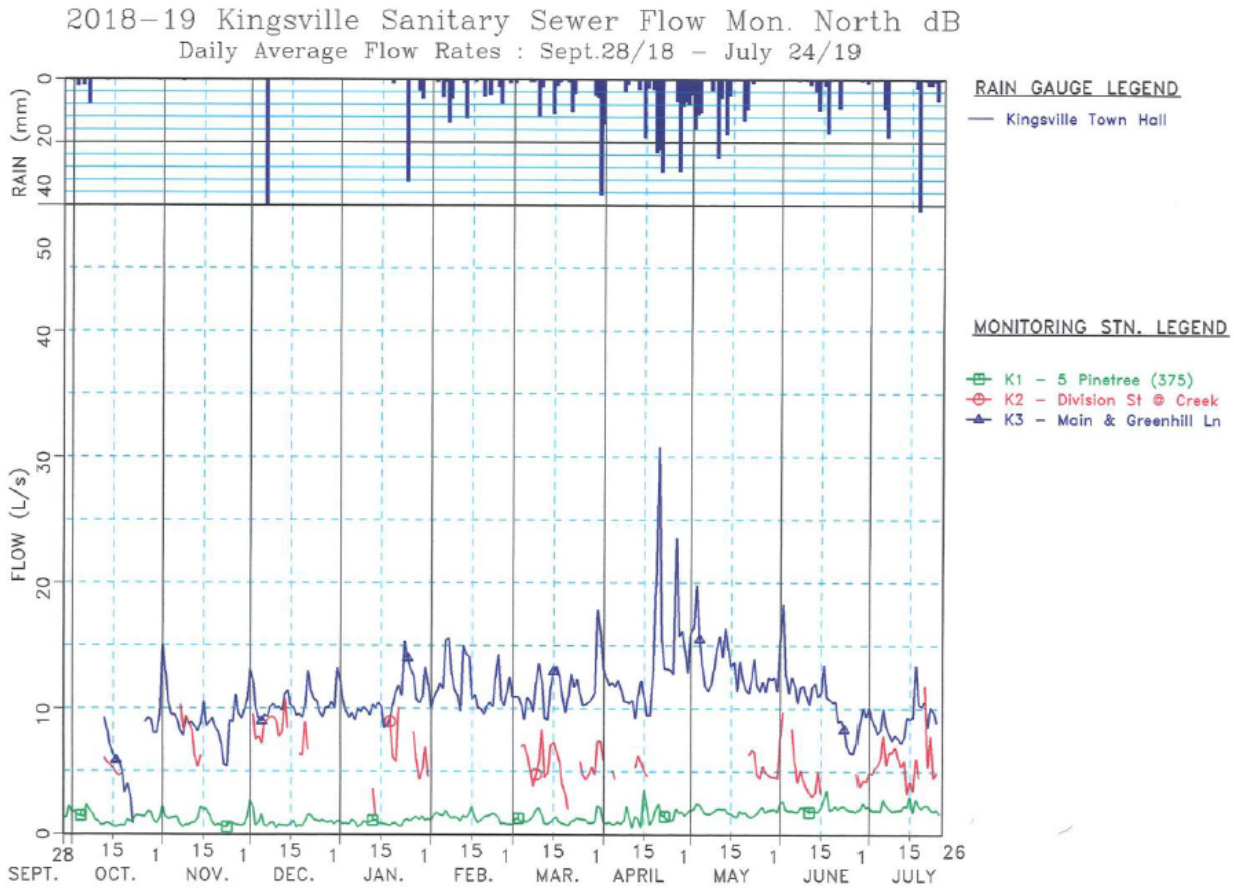


Figure 19: Kingsville Sanitary Sewer Flow Data

Based on the findings from the capacity analysis, the Mill Creek Trunk line was selected as the preferred alternative as there appears to be sufficient capacity to take on additional flows.

After consultations with the Town and review of existing conditions and future proposed developer projects the proposed sanitary sewers are shown in the *Preliminary Design Drawings* included as **Appendix H**.

8.2 Transportation Analysis

As previously mentioned, a traffic study was conducted to analyze existing and future traffic operations within the study area to identify the problems, needs and requirements. The traffic study and its findings are documented in the *Municipal Class Environmental Assessment – Construction of West Side Collector Road Traffic Study* provided in **Appendix G**.

8.2.1 Future Traffic Volume

The traffic volumes were forecasted in the selected future horizon year of 2042 by applying a fixed 1% annual growth rate and adding expected rerouted traffic and trips generated by future developments through future local roads.

The future traffic volumes are shown in **Figure 20** to **Figure 22**.

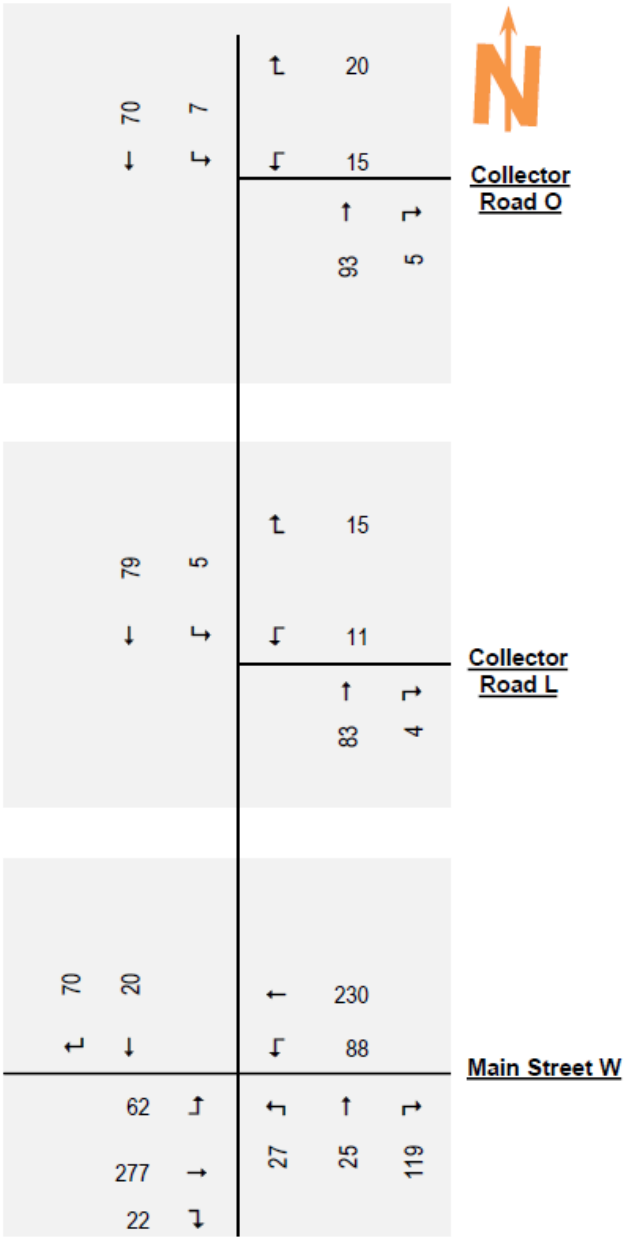


Figure 20: 2042 Traffic Volumes - AM Peak Hour

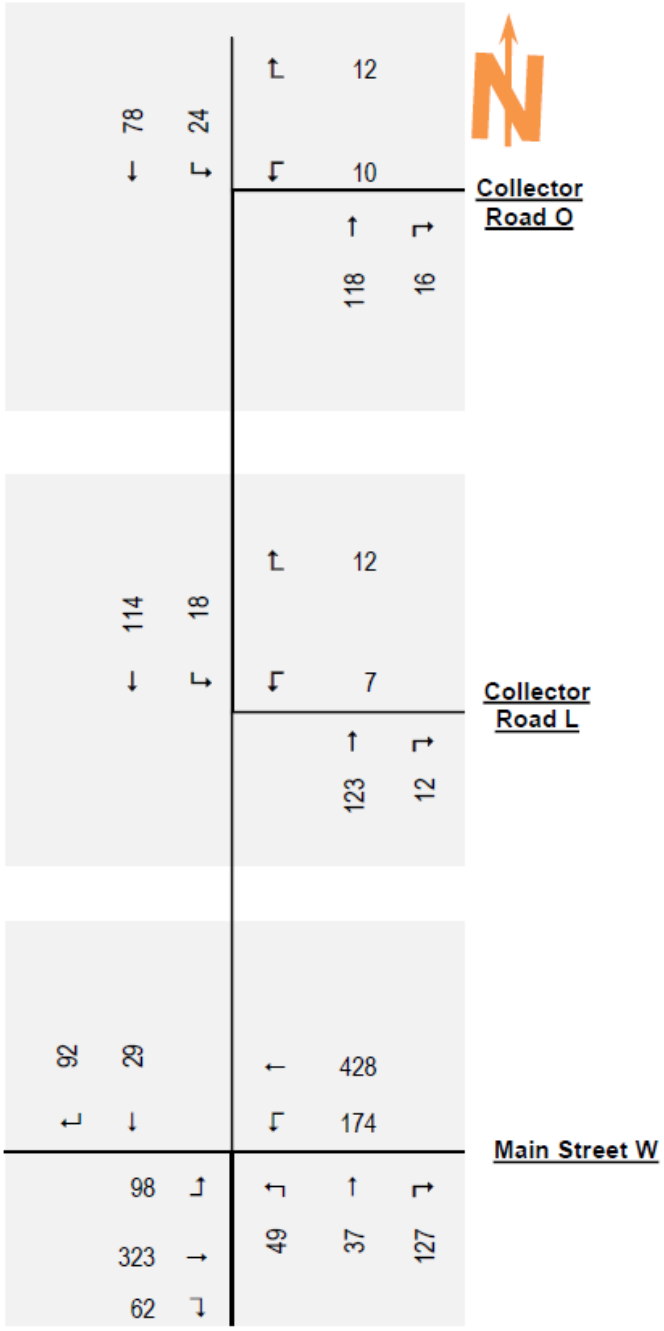


Figure 21: 2042 Traffic Volumes - PM Peak Hour

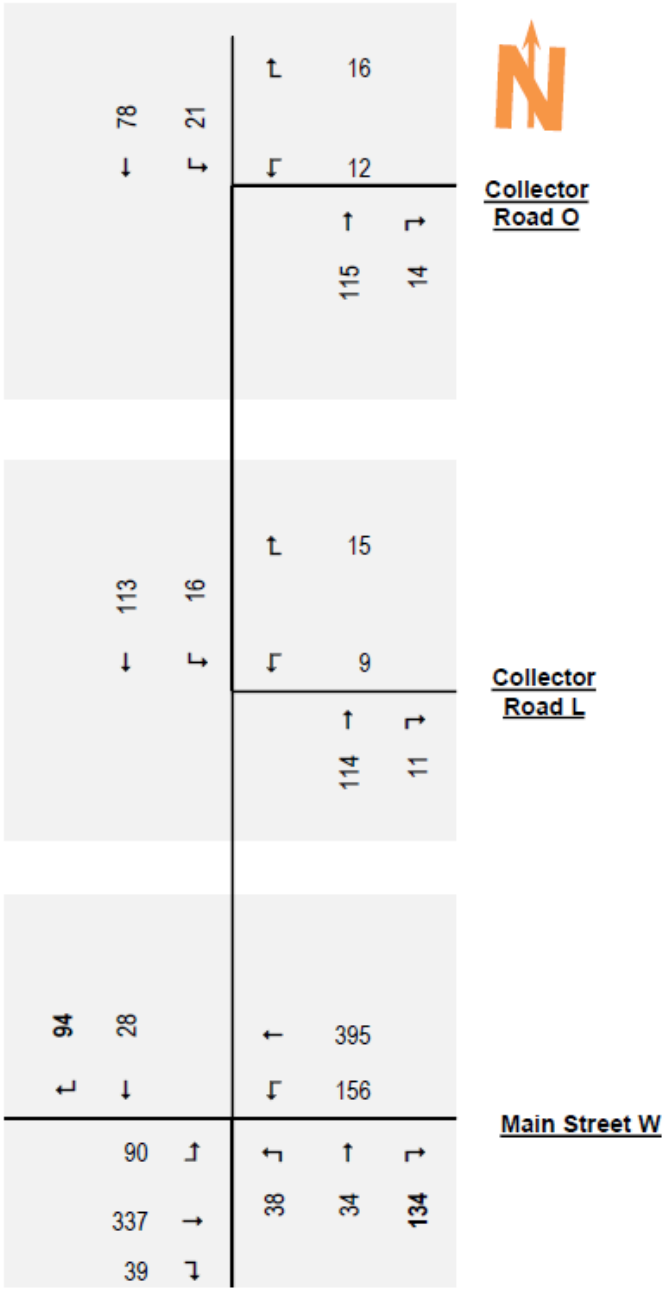


Figure 22: 2042 Traffic Volumes - Saturday Peak Hour

8.2.2 Future Total Operation Analysis

A signal warrant was conducted for the intersection of Main Street West and Heritage Road/Street A (also referred to as Proposed Collector Road/West Side Collector Road) by using the methodology outlined in the Ontario Traffic Manual (OTM) Book 12,

Justification 7. The future total 2042 traffic volumes do not warrant the installation of a traffic signal at this intersection. The results of the signal warrant calculations are included for reference in the *Municipal Class Environmental Assessment – Construction of West Side Collector Road Traffic Study* provided in **Appendix G**.

Left-turn lane warrants analysis for the intersection of Main Street West and Heritage Road/Street A was reviewed based on Geometric Design Standards for Ontario Highways. Results showed that an auxiliary eastbound left-turn lane at this intersection will be warranted in 2042 horizon year.

The Synchro analysis for the three study intersections was conducted for the 2042 total traffic horizon. The results of the analysis are summarized in **Table 15**.

Table 15: Intersection Capacity Analysis Results - Future 2042 Horizon

Intersection	Movement	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		Delay (s)	LOS	v/c	Queue (m) 95th	Delay (s)	LOS	v/c	Queue (m) 95th	Delay (s)	LOS	v/c	Queue (m) 95th
Heritage Road / Street A & Main Street W (Unsignalized)	EB L	7.9	A	0.05	1.2	8.6	A	0.1	2.5	8.5	A	0.09	2.2
	WB L	8.2	A	0.08	1.9	8.8	A	0.17	4.5	8.7	A	0.15	3.9
	NB LTR	20.8	C	0.45	17.4	427.6	F	1.76	132.3	195.3	F	1.24	92.8
	SB LTR	13.4	B	0.19	5.2	31.9	D	0.5	19.9	25.1	D	0.43	15.6
Collector Road L & Street A (Unsignalized)	WB LR	9.2	A	0.03	0.7	9.6	A	0.03	0.6	9.5	A	0.03	0.7
	SB LTR	0.4	A	0	0.1	1.1	A	0.01	0.3	1	A	0.01	0.3
Collector Road O & Street A (Unsignalized)	WB LR	9.3	A	0.04	1	9.6	A	0.03	0.7	9.6	A	0.04	0.9
	SB LTR	0.7	A	0.01	0.1	1.9	A	0.02	0.4	1.7	A	0.02	0.4

Based on the analysis results, all movements at the intersection of Street A (also referred to as Proposed Collector Road) with Collector Road L (also referred to as Proposed Connector Road B) and Collector Road O (also referred to as Proposed Connector Road C) are expected to operate with LOS A, with minor road to be controlled with a stop sign, during all peak hours in 2042 horizon year. No auxiliary left turn lane is warranted for these intersections.

At the intersection of Main Street West and Heritage Road/Street A (unsignalized), northbound approach is anticipated to operate with LOS F, v/c>1, and 428 seconds (over 7 minutes) and 196 seconds (over 3 minutes) delay during PM peak hour and Saturday peak hour, respectively.

Although the traffic signal is not warranted as per the calculations, the northbound approach will operate with LOS F if the intersection remains unsignalized, and as such traffic signals are recommended.

8.2.3 Mitigation Measures

Potential mitigation measures were developed and reviewed at the intersection of Main Street and Heritage Road. A summary is provided below:

- Adding northbound and southbound auxiliary right-turn lane was evaluated, and the results showed that the LOS will still be F in 2042 horizon.
- Signalization of the intersection was examined, and the results showed that all movements will operate with LOS B in 2042 horizon. It is noted that signalization of this intersection is not warranted for 2042 traffic volumes.
- A one-lane roundabout was evaluated, and the analysis results showed the roundabout will work well with LOS A.

Based on the analyses and considerations, a signalized intersection is recommended to be built at Main Street and Heritage Road. Although the warrant is not met, the benefit of a signalized intersection outweighs this as it provides a better level of service when compared to a roundabout design. It also reduces infrastructure cost and utility relocations compared to a roundabout design. The signalized intersection has a significantly smaller footprint than the roundabout design and will impact fewer residential and commercial properties. During construction, the signalized intersection will avoid lengthy road closures, and will reduce impacts to area residents and businesses. As such, a signalized intersection is recommended.

Additional details of the signalization analysis are provided in the following sub-section.

8.2.3.1 Signalization of Main Street and Heritage Road

Both the Kingsville CTMP and the Conklin Subdivision TIS considered the intersection as a signalized intersection. Although the signal is not warranted for this intersection, signalization of this intersection was reviewed as a mitigation measure considering its operational analysis results. Analysis results for signalized intersection are presented in **Table 16**.

Table 16: Intersection Capacity Analysis Results - Signalized Intersection - 2042 Horizon - Worst Peak (PM Peak Hour)

Intersection	Movement	Delay (s)	LOS	v/c	Queue (m) - 95th
Heritage Road & Main Street W (Signalized)	EBL	11.3	B	0.42	15.2
	EBT	11	B	0.48	34.4
	EBR	8.7	A	0.04	4.4
	WBL	12.5	B	0.54	24.2
	WBT	13.2	B	0.64	48.1
	NBT	8.7	A	0.14	14.6
	NBR	8.3	A	0.09	8.9
	SBT	8	A	0.04	6.5
	SBR	8.1	A	0.06	7.6
	Overall Intersection	**11.1**	**B**	**0.38**	

With the addition of a traffic signal, all the movements will operate with LOS B.

8.3 Geotechnical Design

The geotechnical component of the work will be completed under the detailed design portion of the project. The advantage of implementing the geotechnical investigation during that project phase is that once the recommended plan is approved, the geotechnical investigation can be optimized to gather the required information for the various components of the project (pavement, environmental, hydrogeological, sewers and underground infrastructure).

As part of the EA design concepts, the standard Town of Kingsville Development Manual pavement designs for a Collector / Industrial Road are recommended as follows:

Granular ‘A’ Base	450 mm
HL4 Base Asphalt	60 mm
HL 3 Surface Asphalt	40 mm
Total	550 mm

Pavement designs will be updated during detailed design in consideration with soil conditions and anticipated traffic loadings.

8.4 Utilities

A preliminary review was completed, and it is anticipated that the proposed work will impact various existing utilities throughout the study area. The potential utility conflicts are identified in **Appendix J.** Generally, the identified impacts relate to Bell, Enbridge, Hydro One, Elk Energy, and the Town of Kingsville. The identified impacts are predominantly located at the intersection of Heritage Road and Main Street and in areas of widening and re-alignment to accommodate the proposed collector road.

8.5 Property

Permanent and temporary property acquisition and dedication is anticipated throughout the study area to accommodate the Proposed Collector Road and the intersection improvements at Heritage Road and Main Street.

Permanent property acquisition and dedication is anticipated in the following locations:

- All four quadrants of the Heritage Road and Main Street intersection
- Along the south and north sides of Main Street, west of Heritage Road
- Along the south side of Main Street, east of Heritage Road
- Along the west and east sides of Heritage Road
- Along the west and east sides of the Proposed Collector Road, north of Main Street
- Along the south side of the Proposed Connector Road C (also referred to as ‘Street O’)
- An area to the west of Proposed Collector Road

Temporary easements are anticipated in the following locations:

- Along the west and east sides of the Proposed Collector Road, north of Main Street
- Along the north and south sides of the Proposed Connector Road B (also referred to as ‘Street L’)
- Along the north side of the Proposed Connector Road C (also referred to as ‘Street O’)



The anticipated property impacts are provided in **Appendix I.** The actual new right-of-way and the limits of property acquisition required will be confirmed during the detailed design phase.

8.6 Staging

Details regarding construction staging will be developed during the detailed design phase.

8.7 Preliminary Cost Estimate

A preliminary cost estimate has been developed for the construction of the proposed work. Since the cost estimate has been developed at a high-level scale, without the benefit of detailed design drawings, a contingency allowance of 20% of the cost has been added. The capital costs are estimated to be approximately $20.6M. The estimated cost is subject to change. A summary is provided in **Table 17.**

Table 17: Preliminary Cost Estimate

Capital Cost	Estimated $
General Requirements	$584,000
Removals	$346,740
Roadworks	$4,615,650
Municipal Infrastructure – Storm Sewers	$2,415,520
Municipal Infrastructure – Sanitary Sewers	$3,506,274
Municipal Infrastructure – Water	$3,773,103
Landscaping	$38,900
Electrical	$500,000
Miscellaneous and Provisional	$958,750
Sub Total	$16,738,937
Utilities (10% Roadworks)	$461,565
Contingency (20% Sub Total + Utilities)	$3,440,100
Total Estimated Cost	$20,640,602

8.8 Implementation Timeframe and Schedule

The final construction timing will be determined based upon completion of property acquisition, utility relocations and the detailed engineering as well as securing the required funding and approvals.



9 Potential Environmental Impacts and Proposed Mitigation

This section outlines the potential environmental impacts and proposed mitigation measures, as well as commitments to future work during the detail design and construction phases. These mitigation measures will be reviewed and refined during detail design and construction.

9.1 Natural Environment

Potential impacts to natural heritage from this Project are considered within the Project Location, from Main Street West to where the road terminates (the length of road the Town of Kingsville is responsible for). Natural heritage features north of the Project Location are not further discussed in this report. It is recommended that the persons responsible for the road from the termination point to Road 2 West investigate natural heritage, specifically, the SWDM4 ecosite and if this feature provides significant wildlife habitat, confirmation of the presence of SAR and the hydrological and ecological function of the headwater drainage feature.

In addition, the proposed locations of the stormwater management features are subject to change during detailed design. If the location of the feature is outside of the identified study area, additional fieldwork may be required.

Because the Project is predominantly within active agricultural row crop fields, impacts to natural heritage are anticipated to be low. Impacts to fish habitat within Mill Creek are not anticipated as the Project does not overlap the creek or the forested riverine corridor. Based on the findings of this report, the following potential impacts may occur due to the Project:

- Impacts to potential Species of Conservation Concern and Species at Risk
- Impacts to Regulated Habitat for the Eastern Foxsnake

Mitigation measures to minimize the potential impact to natural heritage features and species is discussed below.

9.1.1 Mitigation Measures

General mitigation measures which should be considered have been separated into design and construction related impact mitigation techniques.



During detailed design, the following measures should be considered to reduce the risk of impacts to natural heritage:

9.1.1.1 Fish and Fish Habitat

- There are no works proposed within or nearby fish habitat. Project specific construction mitigation to reduce impacts to fish habitat are not required.

9.1.1.2 Wildlife and Terrestrial Habitat

- Limit infrastructure in woodland and wetland (if applicable) areas and adjacent lands (e.g., 30 m), to the extent possible.
- Plan to rehabilitate temporary disturbance areas with a native seed mix dependent of the existing vegetation community, soil type and soil moisture regime.

The following standard mitigation measures/best practices are provided to reduce potential impacts to natural heritage features during construction:

- Delineate the project footprint with tree protection fencing prior to construction to reduce impacts to adjacent natural features.
- Wash, refuel and/or service equipment a minimum of 30 m from surface waters to reduce the risk of deleterious substances from entering surface waters. Check machinery regularly for fluid leaks.
- Thoroughly clean construction machinery prior to entering the site to reduce the potential for establishment / spread of invasive species.
- To reduce the potential for spread of insect pests such as the Emerald Ash Borer, trees cut should be disposed of onsite (either through spreading of wood chips or trees cut and sawed into logs).
- Develop a Spill Management Plan and have it on site for implementation in the event of an accidental spill. Keep an emergency spill kit on site.
- Stabilize and re-vegetate areas of disturbed/exposed soil, as soon as practicably possible with native seed mixes and native woody vegetation.
- Maintain erosion and sediment control measures until the restoration measures have been assessed and determined to be secure and stable.

9.1.1.3 Erosion and Sediment Control Plan

An erosion and sediment control (ESC) plan should be developed and employed during construction to reduce the risk of erosion and the entry of sediment into surface water and other natural features. Mitigation included in the plan should include the following measures:

- Implement project-specific temporary ESC measures per prior to starting work (e.g., silt fence and/or sediment logs).
- ESC fencing should be installed between the SWDM4 ecosite and the construction area.
- Keep additional ESC materials available on site to provide a contingency supply in the event of an emergency.
- Monitor and maintain erosion and sediment controls, as required. Controls are to be removed only after the soils of the construction area have stabilized and vegetation cover has re-established.
- Stabilize materials requiring stockpiling (fill, topsoil, etc.) and keep a safe distance (> 30 m) from watercourses.

9.1.1.4 Protection of Migratory Birds

The *Migratory Birds Convention Act, 1994* (MBCA) provides legal protection of migratory birds and their nests in Canada. Construction timing must consider restrictions imposed by the MBCA. To avoid damaging or disturbing bird nests and contravening the MBCA, the timing of any vegetation clearing should occur outside of the primary nesting period (i.e., the period when the percent of total nesting species is greater than 10% based on Environment Canada's Nesting Calendars and the period for which due diligence mitigation measures are generally recommended).

The primary nesting period (PNP) identified for southern Ontario is April 1 - August 31, although nesting also infrequently occurs outside of this period (Environment Canada 2014). Vegetation removal during this core nesting period is not recommended; however, if required, a nest survey may be carried out by a qualified person in simple habitats such as an urban park, a vacant lot with few possible nest sites, a previously cleared area, or a structure. If a migratory bird nest is located within the work area at any time, a no-disturbance buffer will be delineated. This buffer will be maintained for the entire duration of the nest activity, which will be determined using periodic checks by an avian biologist. The radius of the buffer generally varies from 5 m - 60 m depending on the sensitivity of the nesting species. The Project will not resume within the nest buffer until the nest is confirmed to be no longer active.



Under the new 2022 updates to the Migratory Bird Regulations (MBR), nests of species listed on Schedule 1 are protected year-round, such as nests of Pileated Woodpecker (*Dryocopus pileatus*). If a Pileated Woodpecker nest (or a nest of another species listed on Schedule 1) is determined to be empty of live or viable eggs, then the nest must be registered on Environment and Climate Change Canada's (ECCC) Abandoned Nest Registry. Once the next is registered, a species-prescribed period of inactivity must be observed (e.g., 36 months for Pileated Woodpecker) before the nest can be disturbed. Disturbing a nest of a listed species within the prescribed period of inactivity requires a permit (which are only available in limited situations) and additional mitigation measures may be required as determined by ECCC.

9.1.1.5 Wildlife Protection

The following mitigation measures are recommended to avoid impacts to wildlife during Project construction:

- Eastern Foxsnake Educational Training: All construction personnel should be aware of the potential presence of Eastern Foxsnake. As part of project orientation, personnel should review educational material which should include species identification, species habitat, species protection / impact mitigation techniques and ESA protections. A visual search of the work area will be conducted before work commences each day, particularly for the period when most wildlife is active (generally April 1 to October 31). Visual inspections will locate and avoid snakes, turtles, and other ground dwelling wildlife such as small mammals. Visual searches will include inspection of machinery and equipment left in the work area overnight prior to starting equipment.
- If wildlife is encountered, work at that location will stop, and the animal(s) will be permitted reasonable time to leave the work area on their own.
- Wildlife exclusion fencing may be required for the Project and specifically, exclusion fencing for Eastern Foxsnake. The need for exclusion fencing for Eastern Foxsnake can be determined after surveys and consultation with the MECP are completed.
- Any sediment and erosion control measures, such as fencing or blanket, utilized on the site during construction will avoid products with plastic mesh due to risk of entanglement of snakes or other wildlife.
- ESC fencing used to protect the SWDM4 ecosite (if required) can also be utilized for wildlife exclusionary fencing for low mobility wildlife (amphibians, turtles).
- Any observations of species at risk or species of conservation concern (e.g., Eastern Foxsnake) should be reported to MECP and MNRF within 48 hours.



Species at risk should not be handled, harassed, or moved in any way, unless they are in immediate danger.

- If wildlife handling and relocation (e.g., amphibians, reptiles) is anticipated during construction such as vegetation clearing or during in-water work, the Contractor must obtain a Wildlife Scientific Collectors Authorization from the MNRF prior to the commencement of work.

Consultation with the MECP will be undertaken, with the submission of an Information Gathering Form (IGF) to the MECP to address Regulated Eastern Foxsnake habitat. The MECP will confirm mitigation measures and authorization requirements, if any, for provincially regulated SAR. Additional studies may be recommended by the MECP following review of the IGF.

9.2 Tree Inventory

A tree inventory and assessment was completed to locate and tag any tree that was within the designated lands for proposed development. Trees 10cm or greater were tagged and recorded in the Detailed Tree Inventory (DTI) and large groupings or stands were recorded in a General Tree Inventory (GTI). Data collected for each tree includes tree genus, specific epithet (where possible to accurately determine), trunk integrity, crown structure, crown vigour, general health condition, DBH, and dripline radius. The tree locations were recorded with a Trimble Catalyst.

9.2.1 Trees to be Removed

A total of 45 trees from the DTI are recommended for removal, due to conflict with construction of the proposed road. A total of 26 stems from the GTI which include the Vegetation Unit 5 area (10 stems) and portion of the Vegetation Unit 6 area (16 stems) conflict with the proposed road development plans and will require removal. The remaining trees are recommended to be protected with Tree Protection Fencing (TPF) where they are adjacent to potential impacts.

No SAR trees were observed within the project area.

9.2.2 Construction Impact Mitigation and Management

9.2.2.1 Potential Construction Impacts to Trees

Trees are living organisms that react to changes in their environment. Trees can be damaged during construction without showing signs of damage until some years later. Most of the impacts relate to the removal of roots that results in the slow death of the tree as a result of its inability to absorb sufficient water and nutrients. Contained within this section are descriptions of the potential impacts this project may have on the trees,



and impact mitigation methods that are intended to aid in the mitigation of impact during construction.

9.2.2.1.1 Soil Compaction and Root Damage

The leading cause of construction damage to trees is compaction of the soil around the roots or within the Tree Protection Zone (TPZ). The TPZ is the area around the tree or group of trees in which no grading or construction activity may occur. Equipment entering into a TPZ compresses the air pockets around the roots inhibiting the tree from absorbing nutrients and water. This damage ultimately degrades the health of the tree. Accordingly, during the removal stage, equipment use within the preservation zones should be restricted to ensure that the tree's roots are not disturbed, thereby assisting in maintaining their continued health. The TPZ is protected and delineated by the Tree Preservation Fencing.

9.2.2.1.2 Mechanical Damage

Equipment can physically damage the trees through striking the trunk, limbs and/or roots. Felled trees can also cause damage during the tree removal stage of construction. Some damage is unavoidable due to close proximity of adjacent trees; however, through the use of proper equipment and best management practices the damage can be minimized. The Contractor should be held responsible for all avoidable damage to the trees during all stages of development. Note, trees shall always be felled away from adjacent trees to be retained.

9.2.2.1.3 Root Damage

The success of tree preservation is dependent not only on protecting the root zone from compaction and damage; it is also contingent upon the ability to ensure that the structural roots within the root plate are not disturbed. Impacts to this area may result in the structural failure of these trees. Excavating soil 1 m outside a tree's dripline, or within a dripline can damage roots by tearing and splitting back to the stem. This damage can later lead to rot that can kill the tree. All work within the dripline of an existing tree shall be approved by an Arborist. When excavating the top 30-60 cm of soil adjacent to trees, care must be taken. Excavation should cleanly sever the roots prior to stripping and removal of soil. Exposed roots with a diameter greater than 2.5 cm (1 inch) shall be pruned back to the soil face to prevent damage to the tree.

9.2.2.2 Protection and Managing Trees During Construction

The following recommendations are presented to provide appropriate tree protection and management during the construction of this project.



1. Tree Preservation Hoarding shall be installed to protect trees identified for preservation. Tree Preservation Hoarding must be installed as per the detail identified on Drawings L-900. Upon installation of the Tree Preservation Hoarding, the Contractor shall contact the Environmental Inspector to review and approve the fencing and its location prior to commencement of any site work. This shall be coordinated with Town staff for final approval (as required). The protection fencing shall remain intact throughout the entire project. The fencing will be inspected weekly, and if required, repaired. The fencing shall be removed at the completion of all site works.

2. Upon receiving the necessary project approvals and prior to the commencement of tree removals, all trees designated for preservation must be flagged in the field. All designated preservation areas must be left standing and undamaged during site works. Removals are to be completed outside of migratory bird nesting season from April 1 to August 31. If removals occur within the restricted activity period, due diligence measures, including pre-clearing nest sweeps will be employed in order to reduce risk to nesting birds protected under the Migratory Birds Convention Act, 1994 and Migratory Birds Regulations. These surveys will be completed by a qualified biologist.

3. The TPZ is the area around a retained tree that is to be protected by Tree Preservation Hoarding. The TPZ is not to be used for any type of storage (e.g., storage of debris, construction material, surplus soils, and construction equipment). No trenching or tunneling for underground services shall be located within the TPZ. Construction equipment shall not be allowed to idle or exhaust within the TPZ.

4. Trees shall not have any rigging cables or hardware of any sort attached or wrapped around them, nor shall any contaminants be dumped within the protective areas. Further, no contaminants shall be dumped or flushed where they may come into contact with the feeder roots of the trees. In the event that roots from retained trees are exposed, or if it is necessary to remove limbs or portions of trees after construction has commenced, the Project Arborist shall be informed and the proper actions conforming to Town Policies and By-laws shall be carried out.

5. Upon completion of the tree removals, all felled trees are to be removed from the Site. No lumber or brush from the clearing is to be stored onsite. Any chipping, cutting or brush clean-up is to be completed outside the bird nesting season. If these activities are to occur within the restricted activity period, due diligence measures, including pre-clearing nest sweeps will be employed in order to reduce risk to nesting birds protected under the Migratory Birds Convention Act, 1994 and Migratory Birds Regulations. These surveys will be completed by a qualified biologist.



6. The following is the process that shall be carried out if tree removals are requested during the restricted time indicated in the Migratory Birds Convention Act:

    i. Contact a qualified individual (i.e., Ornithologist), to determine if nesting birds are within the tree removal disturbance area. Stantec has a qualified bird specialist on staff that can be contacted.

    ii. If the bird specialist has determined that there are nesting birds on Site, there will be no tree removals/chipping conducted within the boundary set out by the specialist. Tree removals can resume within this area at the end of the nesting season, August 31, or if the migratory bird specialist has determined that the nest is complete.

    iii. If the bird specialist determines there are no migratory birds nesting within the disturbance area, the contractor has 3 days to conduct removals. At the end of 7 days if removals and chipping is not complete, the bird specialist will return to the Site and proceed with another assessment. If there are still no birds work can resume for another 7 days. This process will continue until all removals and chipping is complete.

9.3 Assessment of Past Uses

Based on APEC's identified in Section 4.5, the following recommendations are provided:

- Further investigation would be required to confirm soil quality within the APECs identified at the project area.
- Concrete debris and abandoned farm equipment should be removed from the project area and disposed at an approved waste facility.
- O.Reg. 406/19 and the associated document *Rules for Soil Management and Excess Soil Quality Standards* referenced by O.Reg. 406/19 should be followed for soil that is excavated and managed on-site or off-site during construction. This includes sampling soil that is intended to be excavated prior to or during construction that may require off-site management as excess soil, according to a sampling and analysis plan and analyzing for the specific contaminants of potential concern as described in the APEC summary table. Sampling programs should be developed and undertaken under the supervision of a qualified person as defined in O.Reg. 406/19 and sample selection should take into consideration the presence of anthropogenic substances such as debris/waste, and unusual odours or staining.

- Stockpiling and transport of excavated soil and sediment during construction should be done in accordance with the requirements specified in O.Reg. 406/19.

9.4 Archaeology

The Stage 1 AA determined that 84.4% of the study area retains potential for the identification and documentation of archaeological resources, and a Stage 2 AA is required.

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

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

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

It is further recommended that Stage 2 AA of the study area include engagement with interested Indigenous communities. Indigenous engagement practices conducted during the Stage 2 AA will be completed in accordance with the MCM' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011) and the MCM' draft technical bulletin on Engaging Aboriginal Communities in Archaeology. Chippewas of the Thames First Nation and Caldwell First Nation expressed interest in participating in the Stage 2 AA.



9.5 Cultural Heritage Resources

Potential indirect impacts were identified for 172 Main Street West (BHR-1), 190 Main Street West (BHR-2), 189 Main Street West (BHR-3), and 289 Main Street West (BHR-4). The Preferred Option is to avoid BHR-1, BHR-2, BHR-3, and BHR-4 by establishing a buffer zone around the built heritage resources to avoid construction activity within 50 metres. This should use appropriate preventive measures such as mapping on construction maps or plans and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the built heritage resources. Where avoidance is not feasible, the alternative option should be applied.

If the 50-metre buffer cannot be avoided, the alternative option to mitigate this risk is for a qualified building condition specialist or engineer to develop a strategy to carry out condition surveys and vibration monitoring, where required. The pre-condition survey may include screening activities to identify critical properties and determine appropriate vibration levels based on building type, age, and condition. Vibration monitoring may consist of random confirmatory vibration monitoring during construction at the most critical properties. A post-condition survey should be carried out on an as-needed basis to be determined by a qualified building condition specialist or engineer.

When detailed design information is received, potential direct and indirect impacts can be refined as necessary.

9.6 Noise Assessment

A noise assessment was completed to assess noise impacts at nearby noise sensitive areas (NSAs) and investigate noise mitigation where needed. Both operational noise (road traffic noise) and construction noise were assessed with applicable Provincial guidelines. The Town of Kingsville does not have any noise guidelines applicable to the study, however, noise bylaw limits for the operation of construction equipment were considered.

The noise assessment considered nineteen (19) receptors representing NSAs identified for the study, and they include existing dwellings and a proposed subdivision. The receptors were identified from a review of aerial imagery, and proposed layout for the new subdivision.

Noise impact at the existing dwellings in the study area was assessed with the Ontario Ministry of the Environment Conservation and Parks (MECP), formerly known as Ministry of Energy and Environment (MOEE), / Ministry of Transportation (MTO) “Joint Protocol,” A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highway’s Environmental Assessments.



To determine the noise impact at the existing dwellings, a comparison was made for predicted future daytime noise levels for the horizon year of 2042 with the Project (Future Build) and without the Project (Future No-build). Where predicted Future Build noise levels increase more than 5 dB over Future No-build and Future Build noise levels exceed 55 dBA, mitigation was investigated. For the mitigation to be implemented, it must be technically, economically, and administratively feasible.

Noise impact on the proposed residential subdivision was assessed with the MECP NPC-300 Environmental Noise Guideline – Stationary, and Transportation Sources – Approval and Planning in the context of land use planning.

For the proposed subdivision within the Study Area, Future Build daytime noise levels were assessed with 55 dBA absolute limit and nighttime noise levels were assessed with 50 dBA absolute limit. Where predicted Future Build noise levels exceed 55 dBA for daytime and 50 dBA for nighttime, mitigation was investigated.

The Town of Kingsville does not have any noise guidelines applicable to assessing the Project noise impact. Its noise by-law (By-Law Number 28-2006) limits the operation of construction equipment and is considered in this study.

The most current version of the United States Federal Highway Administration (FHWA) Traffic Noise Model (TNM v3.1) was used for this noise impact assessment.

The predicted daytime noise levels indicate that the Future Build noise level is expected to increase over 5 dB at existing receptors R05, R07, R08 and R10. The increase does not result in a level exceeding 55 dBA absolute daytime noise limit, therefore, noise mitigation was not considered.

The predicted Future Build nighttime noise levels at the proposed subdivision receptors (R13-R19) all met the 50 dBA nighttime MECP limit. Therefore, noise mitigation was not considered.

Construction noise for the Project was assessed in accordance with the applicable MECP Publication NPC-115 (MECP, 1977) and NPC-118 (MECP, 1982).

It is expected that most of the planned construction equipment for the Project can be operated in compliance with the MECP limits. However, there is potential for sound levels over the stated limits for some equipment (e.g., paving machines). Once the equipment inventory and construction schedules are finalized, construction equipment sound levels should be reviewed to confirm that nose emissions are within permissible limits. If they exceed the limits, noise control options should be explored. Methods to reduce construction noise impacts are included in the Construction Code of Practice, as outlined in Section 9.6.1.

A copy of the Noise Assessment Report is provided in Appendix K.



9.6.1 Construction Code of Practice and Mitigation

The following best practices for construction should be considered to minimize disturbances outside of the noise by-law requirements:

- All construction equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order.
- There should be explicit indication that Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws. Enforcement of noise control by-laws is the responsibility of the Municipality for all work done by Contractors.
- The Contract documents should contain a provision that any initial noise complaint will trigger verification of construction noise and typical noise control measures.
- In the presence of persistent noise complaints, all construction equipment should be verified to comply with MECP NPC-115 and NPC-118 guidelines.
- In the presence of persistent complaints and subject to the results of a field investigation, alternative noise control measures may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration should be given to the technical, administrative, and economic feasibility of the various alternatives.

9.7 Air Quality

A qualitative assessment of the potential air quality impacts on the local area resulting from the planned improvements. The air quality assessment provided a review of pertinent air quality guidelines and standards, a review of the existing ambient air quality, the identification of current and future sensitive and critical receptors in the project area, a comparison of current and projected traffic in the project area, a discussion of local air quality effects that could arise from the project during construction and operation, and potential mitigation measures that could be undertaken to reduce the potential impacts.

The project study area is currently mainly agricultural with some residential properties along Main Street and Road 2 West. Growth in population and employment has been forecasted based on the CTMP for the Town of Kingsville. The existing ambient air quality in the Project area is affected by the nearby road traffic emission sources, as well as other human activities from agricultural uses, and natural sources.



The background ambient air quality levels for the contaminants of interest in the study area are lower than their related criteria, with the noted exceptions of ozone (8-hour) and B(a)P (annual), which are exceeding their respective criteria. These exceedances are common in southern Ontario, and are not unique to the study area.

For the construction phase, a construction dust management plan will be prepared and implemented. With implementation of mitigation measures and purposeful management of construction dust and combustion gases, emissions from the construction phase and impacts to the local air quality can be reduced and controlled.

The operation of the project has the potential to impact the ambient air quality. The traffic in the Town will increase regardless of project implementation due to significant growth and development in the Town and the potential future residential development in the study area. Project implementation will improve traffic flow and traffic conditions and alleviate congestion in the downtown Kingsville area. In addition, it provides necessary access to the proposed residential development. The impact on the air quality is expected to be lower with project implementation than without project implementation as it helps improve traffic flow in the road network and provides connectivity to the Town's Active Transportation network. In addition, reduction in vehicle combustion emissions is expected in the future with implementation of new vehicle emissions standards and the transition to electric vehicles.

A copy of the Air Quality Assessment is available in Appendix L.

9.7.1 Air Quality Mitigation Measures During Construction

During the construction phase of the Project, emissions to the atmosphere will occur primarily due to fuel combustion from vehicles and construction equipment, as well as fugitive dust from construction activities. While these emissions have the potential to cause a nuisance to nearby receptors, with the proper mitigation measures implemented, emissions from construction phase and adverse changes in local air quality can be controlled to reduce any potential exceedances of a standard.

The Environment and Climate Change Canada (ECCC) guideline "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (ECCC 2005) provides recommendations for mitigation measures to reduce construction emissions. These measures include:

- Material wetting or use of chemical suppressants to reduce dust
- Use of wind barriers and limiting exposed areas
- Equipment washing
- Proper maintenance of construction equipment and vehicles



- Introduction of no-idling policy to control construction vehicle emissions where applicable

Construction best management practices will be developed and implemented during the construction phase for this project.

9.8 Climate Change

The MECP's guide, *Consideration of Climate Change in the Environmental Assessment Process*, outlines two approaches for consideration and addressing climate change in project planning including:

- Reducing a projects impact on climate change (climate change mitigation).
- Increasing the projects and local ecosystems resilience to climate change (climate change adaptation).

The objectives of the climate change document have been considered in the generation and evaluation of alternatives, recommended design, and mitigation approaches.

The proposed improvements provide the opportunity to reduce the project's impact on climate change through the identification of an efficient transportation network and through the provision of facilities that encourage active forms of transportation (e.g., cycling facilities, sidewalks). In addition, the design of municipal infrastructure throughout the corridor will have regard for conveyance of major event flow routes.

The MECP's guide will also be considered during subsequent stages of the EA process, detailed design.

10 Approvals and Permits

Potential permits/approvals have been identified below and will be sought during detailed design.

10.1 Conservation Authorities Act

Development within the ERCA Regulation Limit is subject to the policies outlined in Ontario Regulation 158/06 under the *Conservation Authorities Act.* Regulated areas are present in the Study area. Project overlap within the regulated limit occurs at Road 2 West and Main Street West. Prior to any new development in regulated areas, including the placement or removal of fill material, grading activities, and the erection of any buildings or structures, and/or the alteration of regulated features, written approval (i.e., a Permit or a Letter of Permission) will be required from ERCA. Consultation with ERCA is recommended to determine permitting requirements.

10.2 Endangered Species Act, 2007

The provincial ESA prohibits the killing, harming, harassing, capturing, or taking of a living member of a species listed as threatened, endangered, or extirpated by the Species at Risk in Ontario (SARO) list (O. Reg 230/08) (S.9), or the damage to habitat of similarly designated species (S.10). An exception is where a permit is issued under S.17(2) of the same act, or the Activity is registered under Ontario Regulation 242/08.

Based on preliminary assessment, impacts to SAR and/or SAR habitat may occur due to the Project. Consultation with the MECP regarding SAR is recommended. The submission of an IGF to the MECP to address Regulated Eastern Foxsnake will confirm mitigation measures and authorization requirements, if any, for provincially regulated SAR.

10.3 Fisheries Act

The *Fisheries Act* prohibits causing the death of fish and he harmful alteration, disruption, or destruction (HADD) of fish habitat, unless authorized by the Minister of Fisheries, Oceans, and the Canadian Coast Guard. Under the *Fisheries Act,* fish habitat is defined *as* waters frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areasThe fish and fish habitat protection provisions of the *Fisheries Act* apply to all fish and fish habitat in Canada.

Following guidance and criteria provided on DFO's website regarding mitigation, waterbody types and codes of practice, proponents determine whether their projects in or near water will require review by DFO. In cases where impacts to fish and fish habitat cannot be avoided, proponents submit a Request for Review form to DFO. DFO will review the project to identify the potential risks of the project to the conservation and protection of fish and fish habitat and will work with the proponent to provide advice and guidance on how to comply with the *Fisheries Act*. If the Project can avoid impacts to fish and fish habitat, project approval is not required. If impacts cannot be avoided, proponents must apply for a *Fisheries Act* Authorization, and may be required to develop a habitat offsetting or compensation plan.

Details of the proposed infrastructure location will be assessed to determine the need for review by DFO; however, if in-water work is not proposed, DFO review under the *Fisheries Act* will not likely be required. If the need for in-water work is identified, design details and construction methods will need to be reviewed to determine if the Project should be reviewed by DFO under the *Fisheries Act* through the submission of a Request for Review form.

10.4 Ministry of Citizenship and Multiculturalism

The Stage 1 Archaeological Assessment was submitted to MCM and has been accepted into the Ontario Public Register of Archaeological Reports. The Stage 2 Archaeological Assessment will be completed during detailed design and must be reviewed by MCM and accepted into the Ontario Public Register of Archaeological Reports.

11 Closing

This Environmental Study Report has been prepared following the 2015 Municipal Class EA study process for Schedule C projects. It outlines the process which the Town of Kingsville has undertaken to address the problems identified, and the preferred solution and preliminary design to be implemented.

The Class EA study process has involved consultation with directly affected members of the public, Indigenous communities, stakeholders, and review agencies to ensure that they were aware of the project and that their concerns have been addressed.

The filing of this report represents the conclusion of Phase 1 through Phase 4 of the Class EA planning process as outlined in the MCEA document. Provided that no Section 16 Order requests are received, and provided all appropriate permitting is obtained, the Town may proceed with detailed design and implementation (Phase 5) 30 days following the completion of the public review period.

Appendix A - Consultation

A.1 - Contact List

Town of Kingsville - Heritage Road to Road 2 East
Municipal Class Environmental Assessment
165001284
Contact List

Agency	Title	First Name	Last Name	Department	Title	Address	City	Pr	Postal	Phone	Email			
Provincial Contacts														
Ministry of Natural Resources and Forestry		Karina	Cerniavskaja	Aylmer District	District Planner	615 John Street North	Aylmer	ON	N5H 2S8		karina.cerniavskaja@ontario.ca			
Ministry of Environment, Conservation and Parks											eanotification.swregion@ontario.ca			
Ministry of Environment, Conservation and Parks		Mark	Badali		Regional EA Coordinator						mark.badali1@ontario.ca			
Ministry of Tourism, Culture and Sport		Karla	Barboza	Culture Services Unit	Heritage Planner	401 Bay Street, Suite 1700	Toronto	ON	M7A 0A7		karla.barboza@ontario.ca			
Ministry of Tourism, Culture and Sport		Joseph	Harvey								joseph.harvey@ontario.ca			
Ministry of Transportation		Michael	Nadeau	London Office	Manager, Engineering Program Delivery West	659 Exeter Road, 2nd floor	London	ON	N6E 1L3		michael.nadeau@ontario.ca			
Ministry of Transportation		Chris	Evans	London office	Head, Planning and Design (Acting)	659 Exeter Road, 3rd floor	London	ON	N6E 1L3		chris.evans@ontario.ca			
Ministry of Agriculture, Food, and Rural Affairs											omafra.eanotices@ontario.ca			
Ministry of Indigenous Affairs		Molly	Mann	Reconciliation, Ministry Partnerships	Manager, Indigenous Relations Unit	160 Bloor Street E, Suite 400	Toronto	ON	M7A 2E6		molly.mann@ontario.ca			
Infrastructure Ontario											noticereview@infrastructureontario.ca			
Fisheries and Oceans Canada		Lisa	Wren		Senior Fisheries Protection Biologist	867 Lakeshore Drive	Burlington	ON	L7S 1A1		lisa.wren@dfo-mpo.gc.ca			
Municipal Departments														
County of Essex		Mary	Birch		Director of Council & Community Services/Cle	360 Fairview Avenue West	Essex	ON	N8M 1Y6		mbirch@countyofessex.ca			
County of Essex		Rebecca	Belanger		Manager, Planning Services	360 Fairview Avenue West	Essex	ON	N8M 1Y6		rbelanger@countyofessex.ca			
County of Essex		Mike	Galloway		CAO	360 Fairview Avenue West	Essex	ON	N8M 1Y6		mgalloway@countyofessex.ca			
County of Essex		Jerry	Behl			360 Fairview Avenue West	Essex	ON	N8M 1Y6		jbehl@countyofessex.ca			
County of Essex		Allan	Botham		County Engineer						abotham@countyofessex.ca			
County of Essex		Sumaiya	Habiba		Environment Coordinator						shabiba@countyofessex.ca			
County of Essex		Nithen	Samuel								nsamuel@countyofessex.ca			
Town of Kingsville		Richard	Wyma		Community and Development Services	2021 Division Road North	Kingsville	ON	N9Y 2Y9		rwyma@kingsville.ca			
Town of Kingsville		John	Norton		CAO	2021 Division Road North	Kingsville	ON	N9Y 2Y9		jnorton@kingsville.ca			
Town of Kingsville		Andrew	Plancke		Director of Infrastructure	2021 Division Road North	Kingsville	ON	N9Y 2Y9		aplancke@kingsville.ca			
Municipal Departments														
Town of Kingsville - Fire and Rescue		John	Quennell		Chief	2021 Division Road North	Kingsville	ON	N9Y 2Y9		jquennell@kingsville.ca			
Ontario Provincial Police - Kingsville Detachment		Angela	Ferguson		Detachment Commander	41 Division Street South	Kingsville	ON	N9Y 1P4		angela.ferguson@opp.ca			
Essex-Windsor Emergency Medical Services		Bruce	Krauter		Chief						bkrauter@countyofessex.ca			
Conservation Authority														
Essex Region Conservation Authority		Tian	Martin		Watershed Manager						tmartin@erca.org			
Essex Region Conservation Authority				General ERCA Planning Department		360 Fairview Avenue West	Essex	ON	N8M 1Y6		planning@erca.org			
Utilities														
Hydro One				Hydro One Essex	Planning Department	125 Irwin Avenue	Essex	ON	N8M 2T3		secondarylanduse@hydroone.com			
E.L.K. Energy Inc.											customer.service@elkenergy.com			
Enbridge		Michael	Yeung	Enbridge			Windsor	ON	N9A 6N7		Michael.Yeung@enbridge.com			
Cogeco Cable		Bill	Sorrell		Regional Support Specialist	2525 Dougall Avenue	Windsor	ON	N8X 5A7		bill.sorrell@cogeco.com			
WaveDirect		Rob	Cheyne		Head of Customer Success						rcheyne@wave-direct.com			
Xplornet											support@xplornet.com			
MNSi Telecom											support@mnsi.net			
Gosfield North Communication		Don	Casemore								don.casemore@gosfieldtel.ca			
Bell Canada		Jim	Goodchild	Bell Canada	Project Coordinator	1149 Goyeau Street, 1st floor	Windsor	ON	N9A 1H9		james.goodchild@bell.ca			
First Nations														
Chippewas of the Thames First Nation		Jacqueline	French		Chief	320 Chippewa Road	Muncey	ON	N0L 1Y0	519-289-5555	jfrench@cottfn.com	**Notify through Nations**		
Chippewas of the Thames First Nation		Fallon	Burch		Consultation Coordinator	320 Chippewa Road	Muncey	ON	N0L 1Y0	519-289-5555	fburch@cottfn.com	**Notify through Nations**		
Chippewas of Kettle & Stony Point First Nation		Jason	Henry		Chief	6247 Indian Lane	Lambton Shores	ON	N0N 1J0	519-786-2125	Jason.Henry@kettlepoint.org			
Oneida Nation of the Thames		Adrian	Chrisjohn		Chief	2210 Elm Avenue	Southwold	ON	N0L 2G0	519-318-4598	adrian.chrisjohn@oneida.on.ca			
Oneida Nation of the Thames		Cherilyn	Hill		Political Office Manager	2210 Elm Avenue	Southwold	ON	N0L 2G0	519-652-6161	cherilyn.hill@oneida.on.ca			
Oneida Nation of the Thames		Brandon	Doxtator		Consultation Coordinator	2210 Elm Avenue	Southwold	ON	N0L 2G0		environment@oneida.on.ca			
Caldwell First Nation		Mary	Duckworth		Chief	14 Orange Street	Leamington	ON	N8H 1P5	519-358-6922	chiefmaryduckworth@caldwellfirstnation.ca			
Caldwell First Nation		Michelle	McCormack		Consultation Coordinator	14 Orange Street	Leamington	ON	N8H 1P5	519-322-1533	ecc@caldwellfirstnation.ca			
Caldwell First Nation		Zack	Hamm		Consultation Coordinator	14 Orange Street	Leamington	ON	N8H 1P5	519-322-1533	ecd.manager@caldwellfirstnation.ca			
Delaware Nation (Moravian of the Thames)		Denise	Stonefish		Chief	14760 School House Line, RR3	Thamesville	ON	N0P 2K0	519-692-3936	denise.stonefish@delawarenation.on.ca			
Delaware Nation (Moravian of the Thames)		Kimberly	Snake			14760 School House Line, RR3	Thamesville	ON	N0P 2K0	519-692-3936	director.operations@delawarenation.on.ca			
Aamjiwnaang First Nation		Chris	Plain		Chief	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5	519-336-8410	chief.plain@aamjiwnaang.ca			
Aamjiwnaang First Nation		Cathleen	O'brien		Environment Coordinator	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5		cobrien@aamjiwnaang.ca			
Munsee-Delaware Nation		Mark	Peters		Chief	289 Jubilee Road, RR1	Muncey	ON	N0L 1Y0	519-289-5396 ext. 226	chief.peters@munsee.ca			
Munsee-Delaware Nation						289 Jubilee Road, RR1	Muncey	ON	N0L 1Y0		reception@munsee.ca			
MNO Windsor-Essex Metis Council						145-600 Tecumseh Road East	Windsor	ON	N8X 4X9		windsoressexmetiscouncil@outlook.com			
MNO Windsor-Essex Metis Council						145-600 Tecumseh Road East	Windsor	ON	N8X 4X9		shar.lan@hotmail.com			
Bkejwanong Territory (Walpole Island)		Charles	Sampson		Chief	117 Tahgahoning, RR3	Walpole Island	ON	N8A 4K9		charles.sampson@wifn.org			
Bkejwanong Territory (Walpole Island)		Mark	Aquash		Interim Operations Manager	117 Tahgahoning, RR3	Walpole Island	ON	N8A 4K9		mark.aquash@wifn.org			
School Board Contacts														
Greater Essex County District School Board		Shelley	Armstrong		Superintendent of Business and Treasurer	451 Park Street West P.O. Box 210	Windsor	ON	N9A 6K1		shelley.armstrong@publicboard.ca			
Windsor-Essex Catholic District School Board		Penny	King	Operations Services	Executive Superintendent of Business	1325 California Avenue	Windsor	ON	N9B 2Z5		penny_king@wecdsb.on.ca			
Conseil Scolaire de District des Ecoles Catholiques du Sud-Ouest		Joseph	Picard	CSDECSO Siege Social	Directeur Général du Csc Providence	7515 Forest Glade Drive	Windsor	ON	N8T 3P5	519-948-9227 ext 240	picajose@cscprovidence.ca			
Student Transportation Services					Manager of Operations	360 Fairview Avenue West	Essex	ON	N8M 1Y3		info@buskids.ca			
Stakeholders														
Anthony Abraham Construction		Saide								519 326-5300	agroupservice@hotmail.com			
Beetham Construction		Mike	Beetham							519-818-9805	mikebeethamconstruction@hotmail.com			
BK Cornerstone Design Build		Brent	Klundert							519-818-1539	brent@bkcornerstone.com			
Brady Homes		Kevin	Brady							519 796-3764	kevin@bradyhomes.ca			
Evola Builders		John								519-818-9323	evolabuilders@hotmail.com			
Gord Meuser Design Inc		Gord	Meuser							519 324-1980	gmeuser@gordmeuserdesign.com			
Home Building Centre Kingsville		Scott	McFarland							226 787-7710	scott.mcfarland@homehardware.ca			
Porrone Construction		Pino	Porrone							519 818-0826	p.porrone@hotmail.com			
Solid Rock Homes		Adam	Penner							519-919-2863	adam@solidrockhomes.ca			
Noah Homes		Walter	Branco								wbranco@noahhomes.ca			
Amico		Cindy	Prince								cindy.prince@amico.build			
Nevan Construction		Rob	Molliconi								rob@nevanconstruction.ca			
Public Stakeholder														

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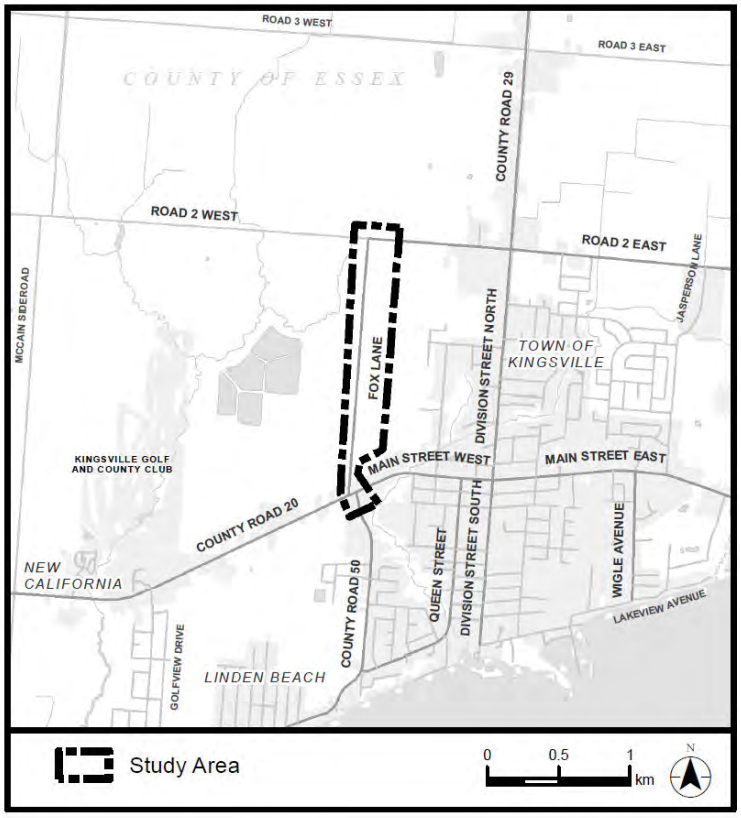
Town of Kingsville - Heritage Road to Road 2 East
Municipal Class Environmental Assessment
165001284
Contact List

Agency	Title	First Name	Last Name	Department	Title

A.2 - Study Notifications

Notice of Study Commencement
Heritage Road to Road 2 West, Town of Kingsville
Municipal Class Environmental Assessment Study

The Town of Kingsville (Town) is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements (see map). These improvements will align with the Town of Kingsville Transportation Master Plan recommendations, to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.



The Process

The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act.

How to Get Involved

A key element of the EA process is gathering comments from the public, stakeholders, First Nations, utilities, businesses and regulatory agencies. To share project details and progress with the public, two Public Information Centres (PICs) will be held throughout the duration of the study. Upon completion of the study, an Environmental Study Report will be prepared and made available for public review and comment.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact:

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville
Phone: 519-733-2305
Email: tdelgreco@kingsville.ca

Kane Erickson, CD, P.Eng.
Transportation Engineer
Stantec Consulting Ltd.
Phone: 519-859-5719
Email: kane.erickson@stantec.com

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice was first issued on August 19, 2022

From:	Lang, Sarah
Cc:	tdelgreco@kingsville.ca; Hohner, Paula; Erickson, Kane; Bartlett, Isaac
Bcc:	karina.cerniavskaja@ontario.ca; karla.barboza@ontario.ca; joseph.harvey@ontario.ca; michael.nadeau@ontario.ca; chris.evans@ontario.ca; omafra.eanotices@ontario.ca; molly.mann@ontario.ca; noticereview@infrastructureontario.ca; lisa.wren@dfo-mpo.gc.ca; mbirch@countyofessex.ca; jmustac@countyofessex.ca; rbelanger@countyofessex.ca; mgalloway@countyofessex.ca; pbziuk@countyofessex.ca; abotham@countyofessex.ca; rwyma@kingsville.ca; jnorton@kingsville.ca; aplancke@kingsville.ca; jquennell@kingsville.ca; angela.ferguson@opp.ca; bkrauter@countyofessex.ca; JBryant@erca.org; tmartin@erca.org; agyori@erca.org; planning@erca.org; customer.service@elkenergy.com; Michael.Yeung@enbridge.com; bill.sorrell@cogeco.com; rcheyne@wave-direct.com; support@xplornet.com; support@mnsi.net; rob.petruk@gosfieldtel.ca; james.goodchild@bell.ca; jason.henry@kettlepoint.org; adrian.chrisjohn@oneida.on.ca; cherilyn.hill@oneida.on.ca; chiefmaryduckworth@caldwellfirstnation.ca; ecc@caldwellfirstnation.ca; ecc2@caldwellfirstnation.ca; denise.stonefish@delawarenation.on.ca; director.operations@delawarenation.on.ca; chief.plain@aamjiwnaang.ca; cobrien@aamjiwnaang.ca; chief.peters@munsee.ca; reception@munsee.ca; windsoressexmetiscouncil@outlook.com; shar.lan@hotmail.com; charles.sampson@wifn.org; mark.aquash@wifn.org; shelley.armstrong@publicboard.ca; penny_king@wecdsb.on.ca; picajose@cscprovidence.ca; agroupservice@hotmail.com; mikebeethamconstruction@hotmail.com; brent@bkcornerstone.com; kevin@bradyhomes.ca; evolabuilders@hotmail.com; gmeuser@gordmeuserdesign.com; scott.mcfarland@homehardware.ca; p.porrone@hotmail.com; adam@solidrockhomes.ca; wbranco@noahhomes.ca; cindy.prince@amico.build; jfrench@cottfn.com; Fallon Burch; secondarylanduse@hydroone.com
Subject:	Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Friday, August 19, 2022 9:51:00 AM
Attachments:	ad_1284_nosc_Final.pdf

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

This study is being undertaken in accordance with the requirements for Schedule ‘C’ projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

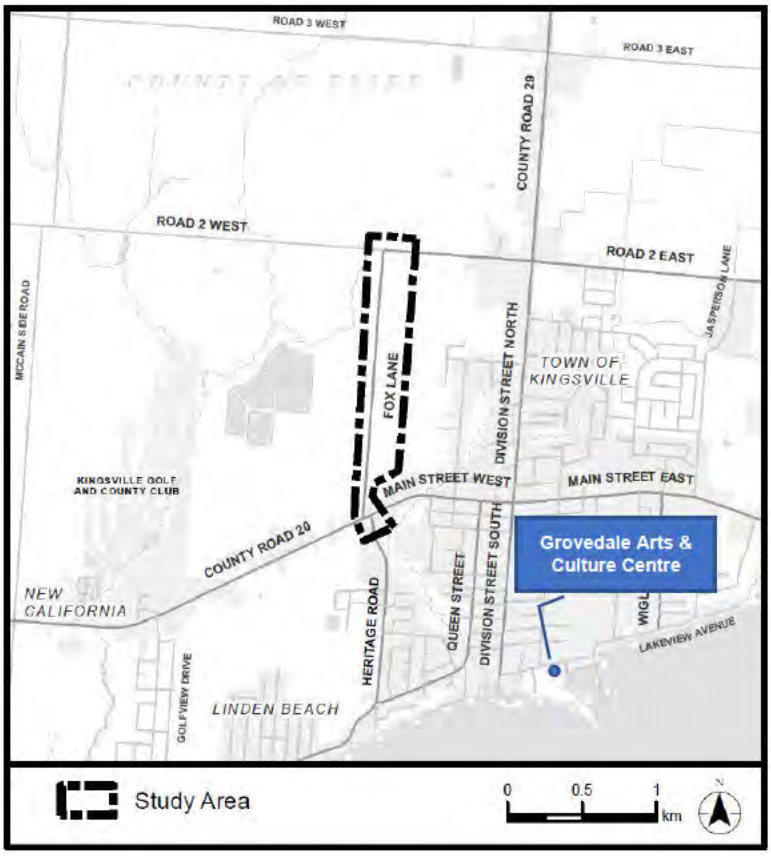
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Notice of Public Information Centre #1
Heritage Road to Road 2 West, Town of Kingsville
Municipal Class Environmental Assessment Study

The Town of Kingsville (Town) is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements (see map). These improvements will align with the Town of Kingsville Transportation Master Plan recommendations, to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.



The Process

The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act.

How to Get Involved

A Public Information Centre (PIC) is being held to present background information, alternative solutions, and evaluation criteria for the study. The PIC will be in-person at the **Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON) on Tuesday, September 20, 2022 from 5:00pm to 7:00pm.** PIC materials will be available on the Town's website for your review on September 20, 2022.

Town Website: www.kingsville.ca

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact:

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville
Phone: 519-733-2305
Email: tdelgreco@kingsville.ca

Kane Erickson, CD, P.Eng.
Transportation Engineer
Stantec Consulting Ltd.
Phone: 519-859-5719
Email: kane.erickson@stantec.com

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice was first issued on September 8, 2022

From:	Lang, Sarah
Cc:	Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Bcc:	karina.cerniavskaja@ontario.ca; eanotification.swregion@ontario.ca; mark.badali1@ontario.ca; karla.barboza@ontario.ca; joseph.harvey@ontario.ca; michael.nadeau@ontario.ca; chris.evans@ontario.ca; omafra.eanotices@ontario.ca; molly.mann@ontario.ca; noticereview@infrastructureontario.ca; lisa.wren@dfo-mpo.gc.ca; mbirch@countyofessex.ca; rbelanger@countyofessex.ca; mgalloway@countyofessex.ca; jbehl@countyofessex.ca; abotham@countyofessex.ca; rwyma@kingsville.ca; jnorton@kingsville.ca; aplancke@kingsville.ca; jquennell@kingsville.ca; angela.ferguson@opp.ca; bkrauter@countyofessex.ca; tmartin@erca.org; Planning; secondarylanduse@hydroone.com; customer.service@elkenergy.com; Michael.Yeung@enbridge.com; bill.sorrell@cogeco.com; rcheyne@wave-direct.com; support@xplornet.com; support@mnsi.net; rob.petruk@gosfieldtel.ca; james.goodchild@bell.ca; Jason.Henry@kettlepoint.org; adrian.chrisjohn@oneida.on.ca; cherilyn.hill@oneida.on.ca; brandon.doxtator@oneida.on.ca; galah.antone@oneida.on.ca; chiefmaryduckworth@caldwellfirstnation.ca; ecc@caldwellfirstnation.ca; ecc2@caldwellfirstnation.ca; denise.stonefish@delawarenation.on.ca; director.operations@delawarenation.on.ca; chief.plain@aamjiwnaang.ca; cobrien@aamjiwnaang.ca; chief.peters@munsee.ca; reception@munsee.ca; windsoressexmetiscouncil@outlook.com; shar.lan@hotmail.com; charles.sampson@wifn.org; mark.aquash@wifn.org; shelley.armstrong@publicboard.ca; penny_king@wecdsb.on.ca; picajose@cscprovidence.ca; agroupservice@hotmail.com; mikebeethamconstruction@hotmail.com; brent@bkcornerstone.com; kevin@bradyhomes.ca; evolabuilders@hotmail.com; gmeuser@gordmeuserdesign.com; scott.mcfarland@homehardware.ca; p.porrone@hotmail.com; adam@solidrockhomes.ca; wbranco@noahhomes.ca; cindy.prince@amico.build;
Subject:	Notice of Public Information Centre 1 - Town of Kingsville, Heritage Road to Road 2 West
Date:	Tuesday, September 13, 2022 2:19:00 PM
Attachments:	Town of Kingsville, Heritage Road to Road 2 West - Notice of PIC 1.pdf

Hello,

Please see the attached Notice of Public Information Centre (PIC) #1 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The first PIC is being held to present background information, alternative solutions, and evaluation criteria for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Tuesday, September 20, 2022 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on September 20, 2022, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

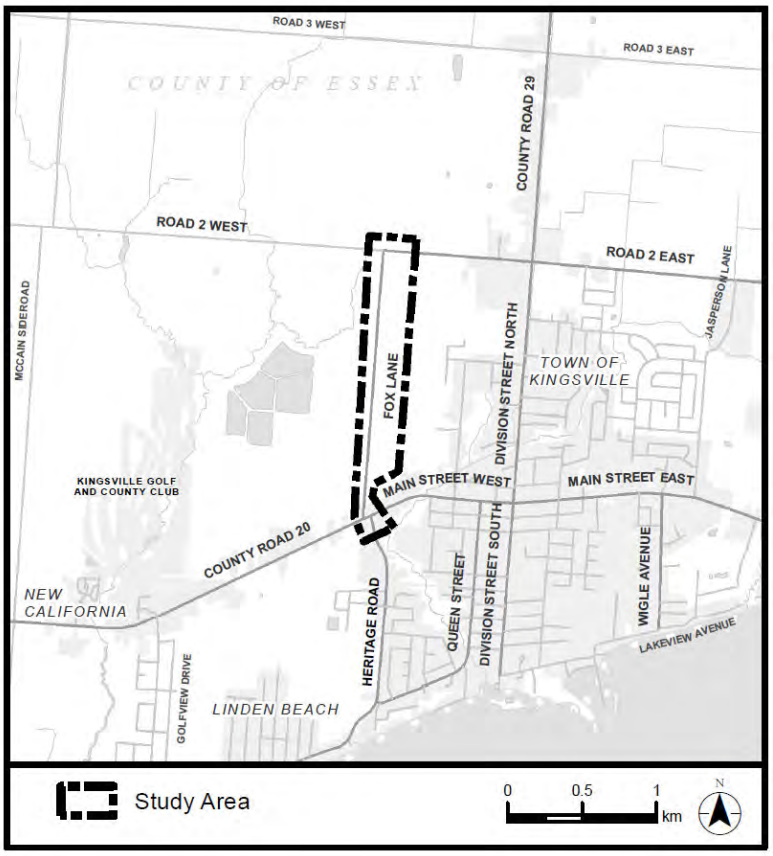
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Notice of Public Information Centre #2
Heritage Road to Road 2 West, Town of Kingsville
Municipal Class Environmental Assessment Study

The Town of Kingsville (Town) has initiated a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements (see map). These improvements will align with the Town of Kingsville Transportation Master Plan recommendations, to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.



The Process

The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act.

How to Get Involved

A Public Information Centre (PIC) is being held to present the evaluation of alternative design concepts, and the recommended design for the study. The PIC will be in-person at the **Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON) on Thursday, July 27, 2023, from 5:00pm to 7:00pm.** PIC materials will be available on the Town's website for your review on July 27, 2023.

Town Website: www.kingsville.ca

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact:

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville
Phone: 519-733-2305
Email: tdelgreco@kingsville.ca

Kane Erickson, CD, P.Eng.
Transportation Engineer
Stantec Consulting Ltd.
Phone: 519-859-5719
Email: kane.erickson@stantec.com

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.

This Notice was first issued on July 4, 2023

From:	Micks, Sarah
Cc:	Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Bcc:	Bartlett, Isaac; karina.cerniavskaja@ontario.ca; eanotification.swregion@ontario.ca; mark.badali1@ontario.ca; karla.barboza@ontario.ca; joseph.harvey@ontario.ca; michael.nadeau@ontario.ca; chris.evans@ontario.ca; omafra.eanotices@ontario.ca; molly.mann@ontario.ca; noticereview@infrastructureontario.ca; lisa.wren@dfo-mpo.gc.ca; mbirch@countyofessex.ca; rbelanger@countyofessex.ca; Mike Galloway; jbehl@countyofessex.ca; abotham@countyofessex.ca; shabiba@countyofessex.ca; rwyma@kingsville.ca; jnorton@kingsville.ca; aplancke@kingsville.ca; jquennell@kingsville.ca; angela.ferguson@opp.ca; bkrauter@countyofessex.ca; tmartin@erca.org; planning@erca.org; secondarylanduse@hydroone.com; customer.service@elkenergy.com; Michael.Yeung@enbridge.com; bill.sorrell@cogeco.com; rcheyne@wave-direct.com; support@xplornet.com; support@mnsi.net; rob.petruk@gosfieldtel.ca; james.goodchild@bell.ca; info@buskids.ca; agroupservice@hotmail.com; mikebeethamconstruction@hotmail.com; brent@bkcornerstone.com; kevin@bradyhomes.ca; evolabuilders@hotmail.com; gmeuser@gordmeuserdesign.com; scott.mcfarland@homehardware.ca; p.porrone@hotmail.com; adam@solidrockhomes.ca; wbranco@noahhomes.ca; cindy.prince@amico.build; rob@nevanconstruction.ca;

Subject:	Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date:	Friday, July 7, 2023 12:15:00 PM
Attachments:	Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

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Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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A.3 - Agency Correspondence

Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study, Schedule "C"
Communication Log

Contact	Date	Comment	Draft Response/ Status
Agencies			
Mike Galloway CAO County of Essex mgalloway@countyofessex.ca	August 19, 2022 Email NOSC	Please include Allan Botham and Jerry Behl in all correspondence regarding this matter.	**Email Response August 19, 2022:** Thank you for providing their contact information! I've added them to our mailing list and they will receive all related correspondence going forward.
Kimberly Darroch kdarroch@erca.org	August 26, 2022 Email NOSC	Thank you for the Notice. I have copied our Planning inbox. Please send all Class EA study correspondence to the Planning inbox in the future, including Notices of Study Commencements, PICs, Completions, etc. Our office can provide feedback once some preliminary information is provided and reviewed. If there is more information, at this time, please forward to our attention or any other supporting background materials that you feel is appropriate for the ERCA review of this Project, at this point, in the approval process. Note, that depending on our level of involvement, there may be a fee charged for our review and or time spent this type of study. Please keep the following on the study distribution list: planning@erca.org – Planning inbox tmartin@erca.org – Tian Martin, P.Eng., Water Resources Engineer	**Email Response August 29, 2022:** Thanks for your email! I've revised our study distribution list as requested. Our project team is beginning some preliminary studies and will be in touch with any questions, requests, etc. as required.
Joseph Harvey Ministry of Tourism, Culture and Sport Joseph.harvey@ontario.ca	September 13, 2022 Email NOSC	Thank you for providing the Ministry of Tourism and Culture and Sport (MTCS) with the Notice of Commencement for the above-referenced project. MTCS 's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes: • archaeological resources, including land and marine; • built heritage resources, including bridges and monuments; and • cultural heritage landscapes. Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources. <u>Project Summary</u> The Town of Kingsville is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act.	**Email Response September 23, 2022:** Thank you for your email and letter dated September 8, 2022 regarding the Heritage Road to Road 2 West study. Your interest in this project is appreciated. A Stage 1 Archaeological Assessment, and a Cultural Heritage Assessment Report will be completed as part of this study to satisfy the requirements of the Municipal Class Environmental Assessment (EA) process. An electronic copy of the technical studies will be provided to your email address when available. We look forward to ongoing consultation with MTCS as the study progresses. Should you have any questions or concerns, please contact Tim Del Greco of the Town of Kingsville by telephone at 519-733-2305, or by email, tdelgreco@kingsville.ca or the undersigned.

		Identifying Cultural Heritage Resources While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Archaeological Resources This EA project may impact archaeological resources and should be screened using the MTCS Criteria for Evaluating Archaeological Potential and Criteria for Evaluating Marine Archaeological Potential to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at archaeology@ontario.ca. If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) shall be undertaken by an archaeologist licenced under the Ontario Heritage Act (OHA), who is responsible for submitting the report directly to MTCS for review. Built Heritage Resources and Cultural Heritage Landscapes The MTCS Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes should be completed to help determine whether this EA project may impact built heritage resources and/or cultural heritage landscapes. If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MTCS recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Please send the HIA to MTCS and the Town for review and comment and make it available to local organizations or individuals who have expressed interest in review. Cultural Heritage Reports will 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. Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations. Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.	

		<u>Environmental Assessment Reporting</u> All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MTCS whether any technical cultural heritage studies will be completed for this EA project and provide them to MTCS before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file. Thank you for consulting MTCS on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.	
	July 20, 2023 Email PIC 2	Thanks or providing us with the attached notice. I'm following up on the attached email which indicates that A Stage 1 Archaeological Assessment (AA), and a Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment will be completed as part of this study. To assist with our record keeping please provide us with the Project Information Form (PIF) number for the Stage 1 AA and provide an update on the status of the Cultural Heritage Report. We would also appreciate if the Cultural Heritage Report and any other recommended technical cultural heritage studies (e.g., Cultural Heritage Evaluation Report, Heritage Impact Assessment) be sent for our review as part of the environmental assessment process.	**Email Response July 26, 2023:** Hi Joseph, Thank you for your email! The Stage 1 Archaeological Assessment Report has been accepted into the register under PIF P422-0017-2022, MCM File Number 0017345. The draft CHR has actually just been compiled – I've attached the draft report to this email for MCM to review, as requested. Please let me know if you have any questions at all!
	August 24, 2023 Email	Please find attached MCM's comments on the Cultural Heritage Report prepared for the above referenced undertaking. Please do not hesitate to reach out with any questions or concerns. Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Draft Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (dated July 12, 2023 and prepared by Stantec) undertaken in support of the above-referenced project. MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage. Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources. **Project Summary** The Town of Kingsville is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will	Email Response August 25, 2023 Thank you for reviewing and providing your feedback. We will revise our report based on your comment, and will plan to include the report as an appendices in our final Environmental Study Report.

		involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act. **Comments** MCM has reviewed the Cultural Heritage Report and found that this report is consistent with the requirements, guidance and standards of the Municipal Class EA and with best practice guidance prepared by MCM, however we have the following observation: • Section 3.2 (Municipal Agency Requests) - Table 1 incorrectly states that MCM indicated that there are no provincial heritage properties located within or adjacent to the Study Area. This section should be revised to reflect MCM's response, dated September 7, 2022, which indicates that we are not aware of any provincial heritage properties within or adjacent to the study area. MCM recommends that this Cultural Heritage Report be included as an appendix in any EA report for public review and should be made available to local heritage organizations or any individuals who express an interest throughout the EA process. 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 continue to send any notices, report and/or documentation electronically to both Karla Barboza and myself. • Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca • Joseph Harvey, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 613-242-3743 | joseph.harvey@ontario.ca Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.	
Mark Badali Regional Environmental Planner (REP) Ministry of Environment Conservation and Parks	September 20, 2022 Email NOSC	Please find the attached letter of acknowledgement and supporting attachments in response to the Notice of Commencement of the Heritage Road to Road 2 West project (Schedule C) being undertaken by the Town of Kingsville under the Municipal Class Environmental Assessment.	

		I would also like to acknowledge receipt of the Notice of Public Information Centre (PIC) #1 issued subsequent to this Notice of Commencement	
Sumaiya Habiba shabiba@countyofessex.ca Environmental Coordinator	September 19, 2022 Email NOSC	Thank you for the opportunity to participate in this Project. County Roads have a primary function of the transportation of goods and services. The proposed Project may impact the following County Roads: County Road 20 and County Road 50. Any works within or that has an impact to a County road will have to be reviewed by the Infrastructure Planning Services Department. The County would like to be added to the contact list to receive future notices and information as the Project progresses. We look forward to future correspondence to better understand the Project and to have further discussions as it relates to County infrastructure.	**Email Response September 21, 2022:** Thank you for your email. I confirm receipt of your letter and comments, and we have added you to our contact mailing list to receive notifications of future milestones for this study.
Kim Darroch Team Lead, Planning Services Essex Region Conservation Authority kdarroch@erca.org	September 19, 2022 Email NOSC	This letter is in response to our receipt and review of the following Notice of Public Meeting for the Heritage Road to Road 2 - PIC 1 Notice. It is our understanding that this process is following the Municipal Class EA in accordance with the planning and design process for "Schedule C" projects as outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011 and 2015) under the Ontario Environmental Assessment Act. We note that the northernmost extent of Fox Ln near the intersection of Road 2 W crosses through the ERCA Limit of Regulated Area, as well as a Surface Water Intake Protection Zone. In addition, the Study Area is within 120 m of the Cedar Creek Wetland Complex (ER 15) PSW and Significant Valleyland associated with the Wigle Creek located to the west (see attached map). We note that PIC materials will be available on the Town's website for our review on September 20, 2022. If there is more information at this time, please forward any other supporting background materials that you feel are appropriate for ERCA review of this Project, at this point in the approval process. Our office would like to remain on the distribution list for subsequent notifications for this project. Please keep the following on the study distribution list: planning@erca.org – Planning inbox tmartin@erca.org – Tian Martin, P.Eng., Water Resources Engineer Thank you and we look forward to reviewing any subsequent information for this project. If you have any questions or require any additional information, please contact the undersigned.	**Email Response September 21, 2022:** Thank you for your email and comments! We've revised our study contact list based on your letter, and will notify Tian and the planning inbox of future milestones related to this study. We will also share the mapping and information regarding the study area conditions with our natural environment team.

Nithen Samuel Environmental Coordinator County of Essex NSamuel@countyofessex.ca	July 18, 2023 Email PIC 2	Thank you for sharing the Notice of Public Information Centre (PIC) 2 for this project. We understand that the study involves the extension of Heritage Road to Road 2 West, as well as the implementation of two local road connecting links and intersection improvements. These proposed developments have the potential to impact the transportation network within our county. We recognize the importance of collaboration and open communication in projects of this magnitude. The County is committed to ensure that any proposed works align with our transportation goals and minimize any disruptions to the county road network. Thank you once again for including us in this process. We anticipate future correspondence and discussions to ensure the successful development of this project.	
Cindy Prince Amico Cindy.prince@amico.build	June 12, 2023 Email PIC 2	**Amico met with the project team via Microsoft Teams on June 21, 2023.**	We are about to proceed to our second Public Information Centre for a Municipal Class EA being completed by Stantec for the Town of Kingsville for a new collector road on the west side of town between Heritage Road and Road 2 West. I've attached our notice of study commencement that was sent out last year. We'd like to meet with you prior to the PIC to present this project and address any questions you may have and discuss some design coordination between the new collector road and future development plans. We'll have more presentation materials to discuss closer to our meeting date. Could you please send me some availability over the next few weeks for a one hour meeting to discuss this project with us?
Walter Branco Noah Homes wbranco@noahhomes.ca	June 12, 2023 Email PIC 2		We are about to proceed to our second Public Information Centre for a Municipal Class EA being completed by Stantec for the Town of Kingsville for a new collector road on the west side of town between Heritage Road and Road 2 West. I've attached our notice of study commencement that was sent out last year. We'd like to meet with you prior to the PIC to present this project and address any questions you may have and discuss some design coordination between the new collector road and future development plans. We'll have more presentation materials to discuss closer to our meeting date. Could you please send me some availability over the next few weeks for a one hour meeting to discuss this project with us?
Rob Nevan Construction rob@nevanconstruction.ca	June 12, 2023 Email PIC 2		We are about to proceed to our second Public Information Centre for a Municipal Class EA being completed by Stantec for the Town of Kingsville for a new collector road on the west side of town between Heritage Road and Road 2 West. I've attached our notice of study commencement that was sent out last year. We'd like to meet with you prior to the PIC to present this project and address any questions you may have and discuss some design coordination between the new collector road and future development plans. We'll have more presentation materials to discuss closer to our meeting date. Could you please send me some availability over the next few weeks for a one hour meeting to discuss this project with us?

From:	Badali, Mark (MECP)
To:	tdelgreco@kingsville.ca
Cc:	Morrison, Sean (MECP); Hohner, Paula; Lang, Sarah; Erickson, Kane
Subject:	RE: Town of Kingsville, MCEA, Heritage Road to Road 2 West
Date:	Tuesday, September 20, 2022 3:35:52 PM
Attachments:	MECP Acknowledgement of NOC - MEA Class EA Sch C - Kingsville Heritage Rd to Rd 2 W.pdf Supporting Attachment - Proponent"s Intro to Delegation of Procedural Aspects of Consultation with Aboriginal Communities.pdf Supporting Attachment - Species at Risk Proponents Guide to Preliminary Screening (Draft May 2019).pdf Town of Kingsville, Heritage Road to Road 2 West - Notice of PIC 1.pdf ad_1284_nosc_Final.pdf

Good afternoon,

Please find the attached letter of acknowledgement and supporting attachments in response to the Notice of Commencement of the Heritage Road to Road 2 West project (Schedule C) being undertaken by the Town of Kingsville under the Municipal Class Environmental Assessment.

I would also like to acknowledge receipt of the Notice of Public Information Centre (PIC) #1 issued subsequent to this Notice of Commencement.

Best regards,

Mark Badali (he/him)
Regional Environmental Planner (REP) – Southwest Region
Project Review Unit | Environmental Assessment Branch
Ontario Ministry of the Environment, Conservation and Parks
Mark.Badali1@ontario.ca | (416) 457-2155

From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: August 19, 2022 9:42 AM
To: EA Notices to SWRegion (MECP) <eanotification.swregion@ontario.ca>
Cc: Hohner, Paula <Paula.Hohner@stantec.com>; tdelgreco@kingsville.ca; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Town of Kingsville, MCEA, Heritage Road to Road 2 West

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello,

Please find the attached Notice of Study Commencement and Project Information Form for the Town of Kingsville, Heritage Road to Road 2 West, Schedule 'C' Municipal Class Environmental Assessment.

Please let me know if you have any questions or concerns.

Thanks,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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

September 20, 2022

Tim Del Greco
Manager of Engineering
Town of Kingsville
tdelgreco@kingsville.ca

BY EMAIL ONLY

Re: **Heritage Road to Road 2 West**
Town of Kingsville
Municipal Class Environmental Assessment, Schedule C
Acknowledgement of Notice of Commencement

Dear Tim Del Greco,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Town of Kingsville (proponent) has indicated that the study is following the approved environmental planning process for a Schedule C project under the Municipal Class Environmental Assessment (Class EA).

The **updated (August 2022)** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.**

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- 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
- Munsee Delaware
- Delaware Nation

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances after initial discussions with the communities identified by the MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;

- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

A draft copy of the report should be sent directly to me prior to the filing of the final report, allowing a minimum of 30 days for the ministry's technical reviewers to provide comments.

Please also ensure a copy of the final notice is sent to the ministry's Southwest Region EA notification 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 mark.badali1@ontario.ca.

Sincerely,



Mark Badali
Regional Environmental Planner – Southwest Region

Cc: Sean Morrison, Manager, Sarnia District Office, MECP
Kane Erickson, Transportation Engineer, Stantec Consulting Ltd.
Sarah Lang, Environmental Planner, Stantec Consulting Ltd.
Paula Hohner, Associate, Senior Environmental Planner, Stantec Consulting Ltd.

Enclosed: Areas of Interest

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

A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities

AREAS OF INTEREST (v. August 2022)

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.
    - Projects located in MECP Central, Eastern or West Central Region may be subject to **A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)**.
    - 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)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011).**

- The **Provincial Policy Statement (2020)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed project is consistent with these policies.

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

☐ **Source Water Protection**

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

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e.

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

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

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

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

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

- In order to determine if this project is occurring within a vulnerable area, proponents can use 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

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

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

More Information

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

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

☐ **Climate Change**

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

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

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

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

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

Air Quality, Dust and Noise

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

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

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

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

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

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

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

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

Ecosystem Protection and Restoration

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

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

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, 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.

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

Surface Water

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

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

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

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

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

review the Water Taking User Guide for EASR for more information. Additionally, an Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

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

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

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

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

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

Excess Materials Management

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

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

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

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

Contaminated Sites

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

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

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

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

Servicing, Utilities and Facilities

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

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

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

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

Mitigation and Monitoring

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

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

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

Consultation

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

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

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

Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II 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.

Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020
Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

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

and

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

Ontario

A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

Aboriginal communities – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

Consultation – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

Crown – the Ontario Crown, acting through a particular ministry or ministries.

Procedural aspects of consultation – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

Proponent – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers

issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;

- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

b) What documentation and reporting does the Crown need from the proponent?

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;

- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;

- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigates any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

Client's Guide to Preliminary Screening for Species at Risk

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

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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).

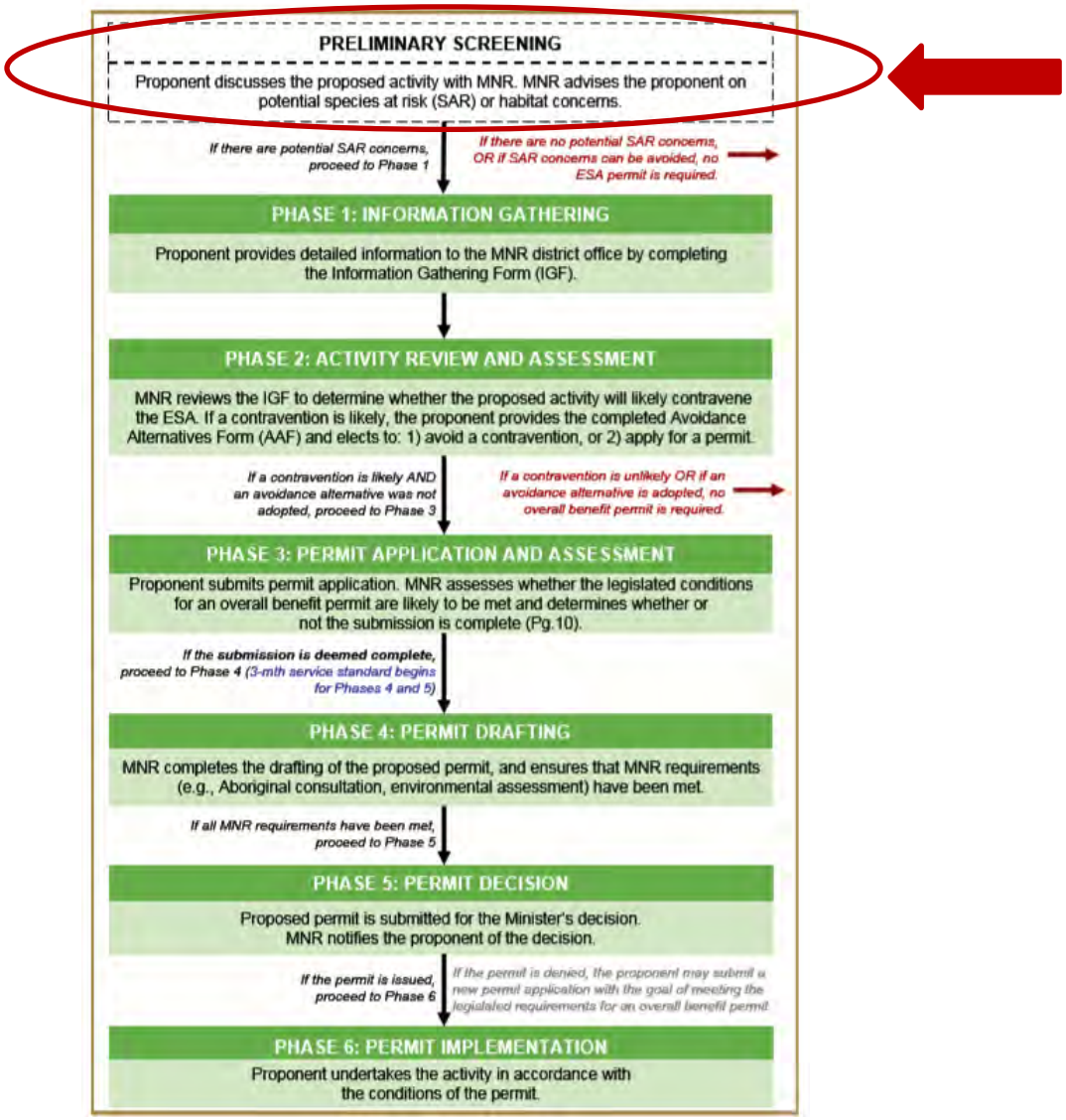
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

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.

1.3 Background and Context

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



2.0 Roles and Responsibilities

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

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

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

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

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

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

From: Lang, Sarah
To: Harvey, Joseph (MTCS)
Cc: Erickson, Kane; Tim Del Greco; Hohner, Paula
Subject: RE: File 0017419: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date: Friday, September 23, 2022 1:17:00 PM

Hello Joseph,

Thank you for your email and letter dated September 8, 2022 regarding the Heritage Road to Road 2 West study. Your interest in this project is appreciated.

A Stage 1 Archaeological Assessment, and a Cultural Heritage Assessment Report will be completed as part of this study to satisfy the requirements of the Municipal Class Environmental Assessment (EA) process. An electronic copy of the technical studies will be provided to your email address when available.

We look forward to ongoing consultation with MTCS as the study progresses. Should you have any questions or concerns, please contact Tim Del Greco of the Town of Kingsville by telephone at 519-733-2305, or by email, tdelgreco@kingsville.ca or the undersigned.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

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From: Harvey, Joseph (MTCS) <Joseph.Harvey@ontario.ca>
Sent: Thursday, September 8, 2022 9:48 AM
To: tdelgreco@kingsville.ca
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Lang, Sarah <Sarah.Lang@stantec.com>
Subject: FW: File 0017419: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Tim Del Greco,

Please find attached MTCS advice on the above referenced undertaking. Do not hesitate to contact me with any questions or concerns.

Regards,

Joseph Harvey | Heritage Planner
Heritage, Tourism and Culture Division | Programs and Services Branch | Heritage Planning Unit

From:	Harvey, Joseph (MTCS)
To:	tdelgreco@kingsville.ca
Cc:	Erickson, Kane; Lang, Sarah
Subject:	FW: File 0017419: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Thursday, September 8, 2022 9:50:17 AM
Attachments:	ad_1284_nosc_Final.pdf 2022-09-08_HeritageRd-MTCS-Ltr.pdf

Tim Del Greco,

Please find attached MTCS advice on the above referenced undertaking. Do not hesitate to contact me with any questions or concerns.

Regards,

Joseph Harvey | Heritage Planner
Heritage, Tourism and Culture Division | Programs and Services Branch | Heritage Planning Unit
Ministry of Tourism, Culture, and Sport
613.242.3743
Joseph.Harvey@ontario.ca

From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: August-19-22 9:51 AM
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

Ministry of Tourism, Culture and Sport

Programs and Services Branch
400 University Ave, 5th Flr
Toronto, ON M7A 2R9
Tel: 613.242.3743

Ministère du Tourisme, Culture et Sport

Direction des programmes et des services
400, av. University, 5e étage
Toronto, ON M7A 2R9
Tél: 613.242.3743

Ontario

September 8, 2022 EMAIL ONLY

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville
tdelgreco@kingsville.ca

MTCS File	**:**	**0017419**
Proponent	**:**	**Town of Kingsville**
Subject	**:**	**Notice of Study Commencement – MCEA Schedule C**
Project	**:**	**Heritage Road to Road 2 West**
Location	**:**	**Town of Kingsville**

Dear Tim Del Greco:

Thank you for providing the Ministry of Tourism and Culture and Sport (MTCS) with the Notice of Commencement for the above-referenced project. MTCS 's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and
- cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

Project Summary
The Town of Kingsville is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the Ontario Environmental Assessment Act.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation.

Archaeological Resources
This EA project may impact archaeological resources and should be screened using the MTCS *Criteria for Evaluating Archaeological Potential* and *Criteria for Evaluating Marine Archaeological Potential* to determine if an archaeological assessment is needed. MTCS archaeological sites data are available at *archaeology@ontario.ca*.

If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) shall be undertaken by an archaeologist licenced under the *Ontario Heritage Act (OHA)*, who is responsible for submitting the report directly to MTCS for review.

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

If there is potential for built heritage resources and/or cultural heritage landscapes on the property or within the project area, a Cultural Heritage Evaluation Report (CHER) should be undertaken by a qualified person to determine the cultural heritage value or interest of the property (or project area). If the property (or project area) is determined to be of cultural heritage value or interest and alterations or development is proposed, MTCS recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, be completed to assess potential project impacts. Please send the HIA to MTCS and the Town for review and comment and make it available to local organizations or individuals who have expressed interest in review.

Cultural Heritage Reports will 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.

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

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

Environmental Assessment Reporting

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MTCS whether any technical cultural heritage studies will be completed for this EA project and provide them to MTCS before issuing a Notice of Completion or commencing any work on the site. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MTCS on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Joseph Harvey
Heritage Planner
joseph.harvey@Ontario.ca

Copied to: Kane Erickson, Transportation Engineer, Stantec Consulting Ltd.
Sarah Lang, Environmental Planner, Stantec Consulting Ltd.

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. MTCS 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 MTCS 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, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Tourism, Culture and Sport 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*.

From:	Lang, Sarah
To:	Mike Galloway
Cc:	Allan Botham; Jerry Behl
Subject:	RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Friday, August 19, 2022 10:55:00 AM
Attachments:	image002.png image003.png

Hi Mike,

Thank you for providing their contact information! I've added them to our mailing list and they will receive all related correspondence going forward.

Thank you

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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From: Mike Galloway <MGalloway@countyofessex.ca>
Sent: Friday, August 19, 2022 10:33 AM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Cc: Allan Botham <ABotham@countyofessex.ca>; Jerry Behl <JBehl@countyofessex.ca>
Subject: FW: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Sarah,

Please include Allan Botham and Jerry Behl in all correspondence regarding this matter.

Thanks,
Mike

Mike Galloway, MBA, CMO
Chief Administrative Officer
County of Essex
360 Fairview Ave. W. Suite 202|Essex, ON|N8M 1Y6
P: 519-776-6441 ext. 1350

F: 519-776-4455
TTY: 1-877-624-4832

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From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: August 19, 2022 9:51 AM
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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Please consider the environment before printing this email.

From:	Lang, Sarah
To:	Sumaiya Habiba
Cc:	Jerry Behl
Subject:	RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Wednesday, September 21, 2022 2:21:00 PM
Attachments:	image002.png image003.png

Good Afternoon,

Thank you for your email. I confirm receipt of your letter and comments, and we have added you to our contact mailing list to receive notifications of future milestones for this study.

Regards,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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Vacation Alert: September 30 – October 11

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From: Sumaiya Habiba <SHabiba@countyofessex.ca>
Sent: Monday, September 19, 2022 1:39 PM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Cc: Jerry Behl <JBehl@countyofessex.ca>
Subject: FW: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Good afternoon Sarah,

Please see attached response letter.

Thanks very much,

Sumaiya

Sumaiya Habiba
Environmental Coordinator

County of Essex
360 Fairview Ave. W. Suite 315|Essex, ON|N8M 1Y6
P: 519-776-6441 ext. 1385
F: 519-776-4455
TTY: 1-877-624-4832

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From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: August 19, 2022 9:51 AM
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

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This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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September 19, 2022

Tim Del Greco, P.Eng
Manager of Engineering, Town of Kingsville
2021 Division Rd
Kingsville, ON N9Y 2Y9

Dear Mr. Del Greco

Re: Notice of Commencement – Heritage Road to Road 2 West MCEA

Thank you for the opportunity to participate in this Project. County Roads have a primary function of the transportation of goods and services. The proposed Project may impact the following County Roads: County Road 20 and County Road 50. Any works within or that has an impact to a County road will have to be reviewed by the Infrastructure Planning Services Department.

The County would like to be added to the contact list to receive future notices and information as the Project progresses. We look forward to future correspondence to better understand the Project and to have further discussions as it relates to County infrastructure.

Regards,

Sumaiya Habiba, EIT
Environmental Coordinator

cc. J. Behl, P.Eng. Manager, Transportation Planning & Development

519-776-6441
TTY 1-877-624-4832
360 Fairview Ave. W.
Essex, ON N8M 1Y6
countyofessex.on.ca

From:	Lang, Sarah
To:	Kimberly Darroch
Cc:	Planning
Subject:	RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Monday, August 29, 2022 4:27:00 PM

Hi Kimberly,

Thanks for your email! I've revised our study distribution list as requested. Our project team is beginning some preliminary studies and will be in touch with any questions, requests, etc. as required.

Thanks!

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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From: Kimberly Darroch <KDarroch@erca.org>
Sent: Friday, August 26, 2022 9:46 AM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Cc: Planning <planning@ERCA.org>
Subject: FW: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Thank you for the Notice.

I have copied our Planning inbox. Please send all Class EA study correspondence to the Planning inbox in the future, including Notices of Study Commencements, PICs, Completions, etc. Our office can provide feedback once some preliminary information is provided and reviewed. If there is more information, at this time, please forward to our attention or any other supporting background materials that you feel is appropriate for the ERCA review of this Project, at this point, in the approval process. Note, that depending on our level of involvement, there may be a fee charged for our review and or time spent this type of study.

Please keep the following on the study distribution list:

planning@erca.org – Planning inbox
tmartin@erca.org – Tian Martin, P.Eng., Water Resources Engineer

Regards,

KIM DARROCH, B.A.(HONS.), M.PL., RPP, MCIP
Team Lead, Planning Services, Watershed Management Services
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 | Essex, Ontario | N8M 1Y6
P. 519-776-5209 x 347 | F. 519-776-8688
kdarroch@erca.org www.essexregionconservation.ca

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Follow us on Twitter: @essexregionca

**NOTE: In accordance with public health guidelines, our offices are closed to the public, but staff are working remotely to provide responses to inquiries and review applications as efficiently as possible. Your patience and understanding is greatly appreciated at this time. **

From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: Friday, August 19, 2022 9:51 AM
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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From:	Lang, Sarah
To:	"Kimberly Darroch"; tdelgreco@kingsville.ca; Erickson, Kane
Subject:	RE: Notice of Public Information Centre #1 Heritage Road to Road 2 West
Date:	Wednesday, September 21, 2022 2:39:00 PM

Hi Kim,

Thank you for your email and comments!

We've revised our study contact list based on your letter, and will notify Tian and the planning inbox of future milestones related to this study. We will also share the mapping and information regarding the study area conditions with our natural environment team.

Thank you!

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

Vacation Alert: September 30 – October 11

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Please consider the environment before printing this email.

From: Kimberly Darroch <KDarroch@erca.org>
Sent: Monday, September 19, 2022 1:24 PM
To: Lang, Sarah <Sarah.Lang@stantec.com>; tdelgreco@kingsville.ca; Erickson, Kane <Kane.Erickson@stantec.com>
Subject: Notice of Public Information Centre #1 Heritage Road to Road 2 West

Please find attached the ERCA comments and screening map, with regard to the above noted project.

Regards,

KIM DARROCH, B.A.(HONS.), M.PL., RPP, MCIP
Team Lead, Planning Services, Watershed Management Services
Essex Region Conservation Authority
360 Fairview Avenue West, Suite 311 | Essex, Ontario | N8M 1Y6
P. 519-776-5209 x 347 | F. 519-776-8688
kdarroch@erca.org www.essexregionconservation.ca

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planning@erca.org
P.519.776.5209
F.519.776.8688
360 Fairview Avenue West
Suite 311, Essex, ON N8M 1Y6

September 19, 2022

Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville

Dear Tim:

RE: Heritage Road to Road 2 - PIC 1 Notice: Municipal Class EA Notice of Public Meeting

This letter is in response to our receipt and review of the following Notice of Public Meeting for the Heritage Road to Road 2 - PIC 1 Notice. It is our understanding that this process is following the Municipal Class EA in accordance with the planning and design process for "Schedule C" projects as outlined in the Municipal Class Environmental Assessment (June 2000, as amended in 2007, 2011 and 2015) under the Ontario Environmental Assessment Act.

We note that the northernmost extent of Fox Ln near the intersection of Road 2 W crosses through the ERCA Limit of Regulated Area, as well as a Surface Water Intake Protection Zone. In addition, the Study Area is within 120 m of the Cedar Creek Wetland Complex (ER 15) PSW and Significant Valleyland associated with the Wigle Creek located to the west (see attached map).

We note that PIC materials will be available on the Town's website for our review on September 20, 2022. If there is more information at this time, please forward any other supporting background materials that you feel are appropriate for ERCA review of this Project, at this point in the approval process.

Our office would like to remain on the distribution list for subsequent notifications for this project. Please keep the following on the study distribution list:

planning@erca.org – Planning inbox
tmartin@erca.org – Tian Martin, P.Eng., Water Resources Engineer

Thank you and we look forward to reviewing any subsequent information for this project. If you have any questions or require any additional information, please contact the undersigned.

Sincerely,

Kim Darroch

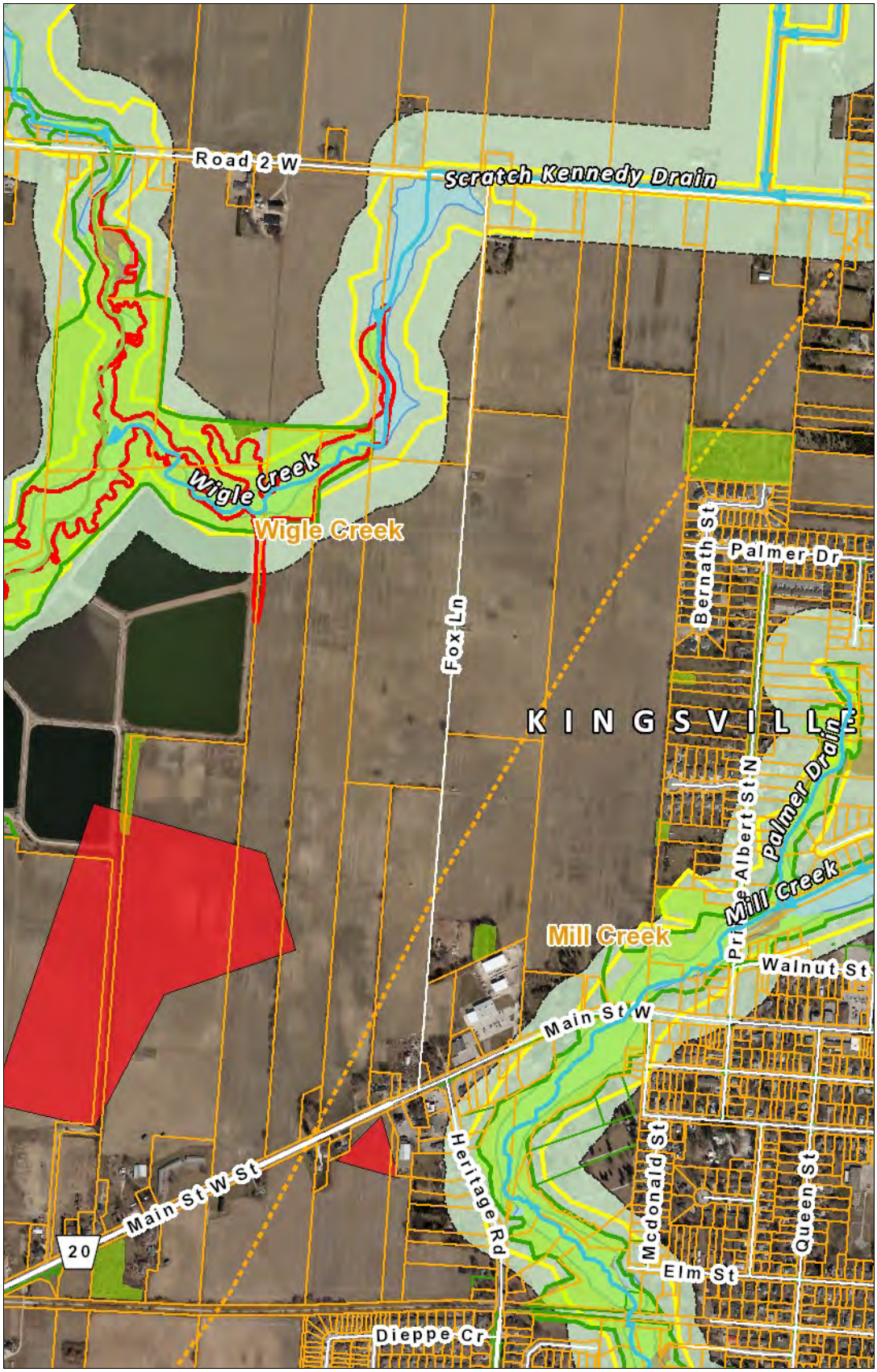
Kim Darroch, B.A.(Hons.), M.PL., RPP, MCIP

Team Lead, Planning Services

/dl

Essex Region Conservation Authority
sustaining the place for life

PSA 2022-9 Munic. Class EA

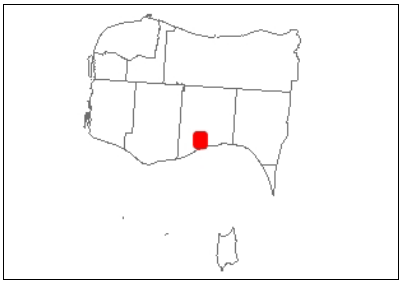


Essex Region Conservation Authority

Legend

- Municipal Drains (ERCA)
  - Natural
  - Municipal Drain (Open)
  - Municipal Drain (Closed)
  - Unknown/Other Status (Open)
  - Unknown/Other Status (Closed)
  - Private/Roadside (Open)
  - Private/Roadside (Closed)
- County Assessment
- County/Pelee Ownership
- Provincially Significant Wetland (PSW
- Significant Valley Land (SVL)
- Existing Natural Features (ERNHSS)
  - Open Water
  - Marsh
  - Swamp
  - Forest
  - Other Terrestrial Natural Feature
- 1:100 yr Flood Line
- Limit of Regulated Area
- Subwatershed (Line)
- Surface Water Intake Protection Zone
  - 1
  - 2
  - 3
- Highly Vulnerable Aquifer (HVA)

Location



0 266.70 533.4

Meters

1: 12,000 9/14/2022

Notes

\\swpserver\wms\Studies\EA\Municipal Class EA\Kingsville\-Heritage Road to Road 2 West Class EA

ERCA Geomatics

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From:	Nithen Samuel
To:	Tim Del Greco
Cc:	Micks, Sarah; Jerry Behl
Subject:	RE: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date:	Tuesday, July 18, 2023 10:49:23 AM
Attachments:	Twitter_7d425643-44d5-4c71-bf70-80ddc2b5b0c511111111.png Facebook_f1ab0de0-1179-48a2-a981-bbf05129d66c11111111.png Heritage to Rd 2 W NoC - Response Letter to PIC 2.pdf

Good Morning Tim,
I hope this email finds you well.. Please find the attached response from the County with regards to PIC 2 for this project.

Wishing you a pleasant day ahead.

Regards,
Nithen Samuel

Nithen Samuel
Environmental Coordinator
County of Essex
360 Fairview Ave. W. Suite 315|Essex, ON|N8M 1Y6
P: 519-776-6441 ext. 1385
F: 519-776-4455
TTY: 1-877-624-4832

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From: Micks, Sarah <Sarah.Micks@stantec.com>
Sent: July 7, 2023 12:19 PM
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

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Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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July 18, 2023

Tim Del Greco, P.Eng.
Manager of Engineering, Town of Kingsville
2021 Division Rd
Kingsville, ON N9Y 2Y9

Dear Mr. Del Greco

Re: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Thank you for sharing the Notice of Public Information Centre (PIC) 2 for this project. We understand that the study involves the extension of Heritage Road to Road 2 West, as well as the implementation of two local road connecting links and intersection improvements. These proposed developments have the potential to impact the transportation network within our county.

We recognize the importance of collaboration and open communication in projects of this magnitude. The County is committed to ensure that any proposed works align with our transportation goals and minimize any disruptions to the county road network. Thank you once again for including us in this process. We anticipate future correspondence and discussions to ensure the successful development of this project.

Regards,



Nithen Samuel, M.Eng.
Environmental Coordinator

cc. J. Behl, P.Eng. Manager, Transportation Planning & Development

519-776-6441
TTY 1-877-624-4832
360 Fairview Ave. W.
Essex, ON N8M 1Y6
countyofessex.on.ca

From: Erickson, Kane
To: Marks, Sarah
Subject: FW: Hydro One Response 20230817-NoticeOfPIC2-Heritage Road to Road 2 West
Date: Friday, August 18, 2023 9:14:57 AM
Attachments: 20230817-NoticeOfPIC2-Heritage Road to Road 2 West.pdf

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The fwd train

-----Original Message-----
From: Tim Del Greco <tdelgreco@kingsville.ca>
Sent: Friday, August 18, 2023 9:06 AM
To: Erickson, Kane <Kane.Erickson@stantec.com>
Subject: FW: Hydro One Response 20230817-NoticeOfPIC2-Heritage Road to Road 2 West

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: https://can01.safelinks.protection.outlook.com/?
url=http%3A%2F%2Fwww.kingsville.ca%2F&data=05%7C01%7CSarah.Micks%40stantec.com%7C02312f4f41859479692b808db95ed1e2%7C413e6f2e219a469297d3f2b4d80281e7%7C0%7C0%7C638279612962724245%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=38lCs%2FGOcQyAsmzrB1JVW5cRYrv0LVeWRGTkcJR5Ik%3D&reserved=0

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-----Original Message-----
From: SUN, Hongxia <Susan.SUN@HydroOne.com> On Behalf Of SECONDARY LAND USE Department
Sent: August 17, 2023 2:14 PM
To: Tim Del Greco <tdelgreco@kingsville.ca>
Cc: SECONDARY LAND USE Department <Department.SecondaryLandUse@hydroone.com>
Subject: Hydro One Response 20230817-NoticeOfPIC2-Heritage Road to Road 2 West

Please see the attached for Hydro One's Response.

Hydro One Networks Inc

SecondaryLandUse@HydroOne.com

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Hydro One Networks Inc.

483 Bay Street
8th Floor South Tower
Toronto, Ontario M5G 2P5

HydroOne.com

August 17, 2023

Re: Heritage Road to Road 2 West

Attention:
Tim Del Greco, P.Eng.
Manager of Engineering
Town of Kingsville

Thank you for sending us notification regarding (Heritage Road to Road 2 West).
In our assessment, we have confirmed that Hydro One has existing distribution assets within your study area.

At this time, we do not have sufficient information to comment on the potential resulting impacts that your project may have on our infrastructure. As such, we must stay informed as more information becomes available so that we can advise if any of the alternative solutions present actual conflicts with our assets, and if so; what resulting measures and costs could be incurred by the proponent. Note that this response does not constitute approval for your plans and is being sent to you as a courtesy to inform you that we must continue to be consulted on your project.

Hydro One must be consulted during all stages of your project. Please ensure that all future communications about this and future project(s) are sent to us electronically to secondarylanduse@hydroone.com

Sent on behalf of,

Secondary Land Use
Asset Optimization
Strategy & Integrated Planning
Hydro One Networks Inc.

From:	Harvey, Joseph (MCM)
To:	Micks, Sarah
Cc:	Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac; Smith, Frank; Barboza, Karla (MCM)
Subject:	RE: File 0017419: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date:	Thursday, August 24, 2023 11:21:55 AM
Attachments:	2023-08-24-HeritageRd-CHR-MCM-Comments.pdf

Sarah Micks,

Please find attached MCM's comments on the Cultural Heritage Report prepared for the above referenced undertaking. Please do not hesitate to reach out with any questions or concerns.

Thanks,

Joseph Harvey | Heritage Planner
Citizenship, Inclusion and Heritage Division | Heritage Branch | Heritage Planning Unit
Ministry of Citizenship and Multiculturalism
613.242.3743
Joseph.Harvey@ontario.ca

Effective October 17, 2022, units responsible for cultural heritage matters have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Responsibility for the Ontario Heritage Act and associated Provincial functions is now held by MCM. Individual staff roles and contact information remain unchanged.

From: Harvey, Joseph (MCM)
Sent: July 26, 2023 2:06 PM
To: Micks, Sarah <Sarah.Micks@stantec.com>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Smith, Frank <Frank.Smith@stantec.com>; Barboza, Karla (MCM) <Karla.Barboza@ontario.ca>
Subject: RE: File 0017419: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Hi Sarah,

Thank you for the updates on the archaeology and for submitting the Cultural Heritage Report for our review. We will review and provide comments, as appropriate, by late August.

Thanks,

Joseph Harvey | Heritage Planner
Citizenship, Inclusion and Heritage Division | Heritage Branch | Heritage Planning Unit
Ministry of Citizenship and Multiculturalism
613.242.3743
Joseph.Harvey@ontario.ca

Effective October 17, 2022, units responsible for cultural heritage matters have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Responsibility for the Ontario Heritage Act and associated Provincial functions is now held by MCM. Individual staff roles and contact information remain unchanged.

From: Micks, Sarah <Sarah.Micks@stantec.com>
Sent: July 26, 2023 10:01 AM
To: Harvey, Joseph (MCM) <Joseph.Harvey@ontario.ca>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Smith, Frank <Frank.Smith@stantec.com>
Subject: FW: File 0017419: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

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Hi Joseph,

Thank you for your email! The Stage 1 Archaeological Assessment Report has been accepted into the register under PIF P422-0017-2022, MCM File Number 0017345.

The draft CHR has actually just been compiled – I've attached the draft report to this email for MCM to review, as requested.

Please let me know if you have any questions at all!

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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From: Harvey, Joseph (MCM) <Joseph.Harvey@ontario.ca>
Sent: Thursday, July 20, 2023 6:49 PM
To: Micks, Sarah <Sarah.Micks@stantec.com>
Cc: tdelgreco@kingsville.ca; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: FW: File 0017419: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Hi Sarah,

Thanks or providing us with the attached notice.

I'm following up on the attached email which indicates that A Stage 1 Archaeological Assessment (AA), and a *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* will be completed as part of this study.

To assist with our record keeping please provide us with the Project Information Form (PIF) number for the Stage 1 AA and provide an update on the status of the Cultural Heritage Report. We would also appreciate if the Cultural Heritage Report and any other recommended technical cultural heritage studies (e.g., Cultural Heritage Evaluation Report, Heritage Impact Assessment) be sent for our review as part of the environmental assessment process.

Thanks,

Joseph Harvey | Heritage Planner
Citizenship, Inclusion and Heritage Division | Heritage Branch | Heritage Planning Unit
Ministry of Citizenship and Multiculturalism
613.242.3743
Joseph.Harvey@ontario.ca

Effective October 17, 2022, units responsible for cultural heritage matters have been transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Responsibility for the Ontario Heritage Act and associated Provincial functions is now held by MCM. Individual staff roles and contact information remain unchanged.

From: Micks, Sarah <Sarah.Micks@stantec.com>
Sent: July-07-23 12:16 PM
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

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Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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Ministry of Citizenship and Multiculturalism

Heritage Planning Unit
Heritage Branch
Citizenship, Inclusion and Heritage Division
5th Flr, 400 University Ave
Tel.: 613.242.3743

Ministère des Affaires civiques et du Multiculturalisme

Unité de la planification relative au patrimoine
Direction du patrimoine
Division des affaires civiques, de l'inclusion et du patrimoine
Tél.: 613.242.3743

August 24, 2023 EMAIL ONLY

Sarah Micks
Environmental Planner
Stantec
sarah.micks@stantec.com

MCM File	**:**	**0017419**
Proponent	**:**	**Town of Kingsville**
Subject	**:**	**Draft Cultural Heritage Report: Existing Conditions and Preliminary Assessment**
Project	**:**	**Heritage Road to Road 2 West – Municipal Class Environmental Assessment - Schedule C**
Location	**:**	**Town of Kingsville**

Dear Sarah Micks:

Thank you for providing the Ministry of Citizenship and Multiculturalism (MCM) with the Draft *Cultural Heritage Report*: *Existing Conditions and Preliminary Impact Assessment* (dated July 12, 2023 and prepared by Stantec) undertaken in support of the above-referenced project.

MCM's interest in this project relates to its mandate of conserving Ontario's cultural heritage.

Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.

Project Summary
The Town of Kingsville is initiating a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The study is being conducted in accordance with the requirements of Schedule 'C' projects as outlined in the Municipal Class EA document (2000, as amended), which is approved under the *Ontario Environmental Assessment Act*.

Comments
MCM has reviewed the Cultural Heritage Report and found that this report is consistent with the requirements, guidance and standards of the Municipal Class EA and with best practice guidance prepared by MCM, however we have the following observation:

- Section 3.2 (Municipal Agency Requests) - Table 1 incorrectly states that MCM indicated that there are no provincial heritage properties located within or adjacent to the Study

Area. This section should be revised to reflect MCM's response, dated September 7, 2022, which indicates that we are not aware of any provincial heritage properties within or adjacent to the study area.

MCM recommends that this Cultural Heritage Report be included as an appendix in any EA report for public review and should be made available to local heritage organizations or any individuals who express an interest throughout the EA process.

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 continue to send any notices, report and/or documentation electronically to both Karla Barboza and myself.

- Karla Barboza, Team Lead - Heritage | Heritage Planning Unit (Citizenship and Multiculturalism) | 416-660-1027 | karla.barboza@ontario.ca
- Joseph Harvey, Heritage Planner | Heritage Planning Unit (Citizenship and Multiculturalism) | 613-242-3743 | joseph.harvey@ontario.ca

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact me.

Sincerely,

Joseph Harvey
Heritage Planner
Heritage Planning Unit
joseph.harvey@Ontario.ca

Copied to: Tim Del Greco, Manager of Engineering, Town of Kingsville
Kane Erickson, Transportation Engineer, Stantec Consulting Ltd.
Paula Hohner, Stantec Consulting Ltd.
Isaac Bartlett, Stantec Consulting Ltd.
Frank smith, Stantec Consulting Ltd.

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, 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*.

From: Cindy Prince
To: Erickson, Kane
Cc: Kyle Mastronardi; Tim Del Greco; Bartlett, Isaac; Moreau, Kiel; Hohner, Paula; Micks, Sarah; Karky, Apurba
Subject: Re: Kingsville - Heritage Road to Road 2 West - MCEA - Meeting Request
Date: Wednesday, June 14, 2023 3:35:50 PM

Virtual meeting is perfect. Thanks.

Cindy Prince
AMICO AFFILIATES
VICE PRESIDENT
O:519-737-1577
C:519-796-6400

On Jun 14, 2023, at 3:33 PM, Erickson, Kane <Kane.Erickson@stantec.com> wrote:

Hi Cindy,

That time works for us but we would prefer to meet via MS Teams if that's ok with you. Our team is somewhat scattered across southern Ontario so it would be difficult to get us all down to Windsor for a short meeting. We do appreciate your offer to host at your office though.

I can send a meeting invite momentarily.

Thanks,

Kane

From: Cindy Prince <cindy.prince@amico.build>
Sent: Wednesday, June 14, 2023 9:00 AM
To: Erickson, Kane <Kane.Erickson@stantec.com>; rob@nevanconstruction.ca; Kyle Mastronardi <kyle.mastronardi@amico.build>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Moreau, Kiel <Kiel.Moreau@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Micks, Sarah <Sarah.Micks@stantec.com>; Karky, Apurba <Apurba.Karky@stantec.com>
Subject: RE: Kingsville - Heritage Road to Road 2 West - MCEA - Meeting Request

How about next Wednesday June 21st at 9:00 at the Amico offices?

<~WRD0001.jpg>

Cindy Prince
AMICO AFFILIATES
VICE PRESIDENT
O:519-737-1577
C:519-796-6400

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From: Erickson, Kane <Kane.Erickson@stantec.com>
Sent: Monday, June 12, 2023 3:12 PM
To: rob@nevanconstruction.ca; Kyle Mastronardi <kyle.mastronardi@amico.build>; Cindy Prince <cindy.prince@amico.build>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Moreau, Kiel <Kiel.Moreau@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Micks, Sarah <Sarah.Micks@stantec.com>; Karky, Apurba <Apurba.Karky@stantec.com>
Subject: Kingsville - Heritage Road to Road 2 West - MCEA - Meeting Request

You don't often get email from kane.erickson@stantec.com. Learn why this is important

Hi Rob, Kyle and Cindy,

We are about to proceed to our second Public Information Centre for a Municipal Class EA being completed by Stantec for the Town of Kingsville for a new collector road on the west side of town between Heritage Road and Road 2 West. I've attached our notice of study commencement that was sent out last year. We'd like to meet with you prior to the PIC to present this project and address any questions you may have and discuss some design coordination between the new collector road and future development plans. We'll have more presentation materials to discuss closer to our meeting date.

Could you please send me some availability over the next few weeks for a one hour meeting to discuss this project with us?

Thanks,

Kane Erickson, CD, P Eng
Transportation Engineer

Mobile: 519-859-5719
Kane.Erickson@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

<~WRD0001.jpg>

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From:	Erickson, Kane
To:	wbranco@noahhomes.ca; rob@nevanconstruction.ca; lindy@noahhomes.ca
Cc:	Micks, Sarah; Bartlett, Isaac; Hohner, Paula; Moreau, Kiel; Tim Del Greco
Subject:	Kingsville - West Side Collector Road - Pre-PIC meeting
Date:	Wednesday, June 28, 2023 9:23:14 AM
Attachments:	ad_1284_nosc_Final.pdf

Hi Walter,

We are about to proceed to our second Public Information Centre for a Municipal Class EA being completed by Stantec for the Town of Kingsville for a new collector road on the west side of town from Heritage Road and Main Street to Road 2 West. I've attached our notice of study commencement that was sent out last year. We'd like to meet with you prior to the PIC to present this project and address any questions you may have and discuss some design coordination between the new collector road and future development plans you may have. We'll have more presentation materials to discuss closer to our meeting date.

Could you please send me some availability this week and next week for a one hour meeting to discuss this project with us?

Thanks,

Kane Erickson, CD, P Eng
Transportation Engineer

Mobile: 519-859-5719
Kane.Erickson@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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A.4 - Indigenous Engagement

Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study, Schedule "C"
First Nations Communication Log

Contact	Date	Comment	Draft Response/ Status
First Nations			
Chippewas of the Thames First Nation Chief Jacqueline French Fallon Burch jfrench@cottfn.com fburch@cottfn.com Consultation through Nations Connect	NOSC	**Email Received August 19, 2022:** The Chippewas of the Thames First Nation has transitioned to using NationsConnect to receive consultation and engagement requests. Notifications or requests sent over email, mail or fax are not considered submitted and will not be reviewed. To register for NationsConnect, and submit your request, please visit NationsConnect.ca. Along with the project information, a spatial file in .kml, .kmz, or .zip shapefile formats will be required to submit your request. Once your project has been submitted, you can attach additional files or send updated communication through the Conversations feature on NationsConnect. If you have any technical questions about NationsConnect, please reach out to support@kwusen.ca.	**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
		Email Received September 9, 2022: We have received information concerning the Town of Kingsville, Heritage Road to Road 2 West MCEA, submitted August 29, 2022. The proposed project is located within the McKee Treaty area, to which Chippewas of the Thames First Nation (COTTFN) is a signatory. It is also located within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN Traditional Territory. After reviewing the Town of Kingsville, Heritage Road to Road 2 West MCEA, we have minimal concerns with the information that has been provided at this time. If there is an Archaeology Assessment conducted, 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 protocol - a document and a process that will guide positive working relationships. As per 'Appendix D' of the Wiindmaagewin, please find attached invoice #0387. Please do not hesitate to contact me if you have any questions.	**Email Response September 23, 2022:** Thank you for providing the Chippewas of the Thames First Nation decision regarding consultation for the Town of Kingsville, Heritage Road to Road 2 West MCEA study. The Stage 1 Archaeological Assessment report is currently being compiled, and we will provide it to you for review prior to filing with the Ministry of Tourism, Culture and Sport. If Stage 2 Archaeological Assessment work is required, we will be happy to coordinate participation from First Nation Field Liaisons. For the attached Invoice #0387, I'm wondering if it would please be possible for you to address this invoice to the Town of Kingsville? Please see the preferred billing details below: Town of Kingsville Attn: Tim Del Greco 2021 Division Road North Kingsville, ON N9Y 2Y9 519-733-2305 tdelgreco@kingsville.ca Please let me know if you have any questions or concerns.
	PIC 1		**Email Sent September 13, 2022:** Please see the attached Notice of Public Information Centre (PIC) #1 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

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	Archaeology November 18, 2022 Email		**Email sent November 18, 2022:** Further to previous correspondence sent by Stantec on behalf of the Town of Kingsville (the Town), Stantec is completing an archaeological assessment in in support of the Town's proposed West Side Collector Road expansion as part of a Municipal Class Environmental Assessment (EA). The Class EA is being completed to support a proposed collector road, i.e., an extension of Heritage Road between County Road 20 and Municipal Road 2 in the town of Kingsville to provide service to future local roads as part of future development. Please see a draft Stage 1 archaeological assessment of the study area for your review. Stantec will also be completing a Stage 2 archaeological assessment of the study area. Stantec and the Town would like to invite a representative from Chippewas of the Thames First Nation to join the archaeological crew during the archaeological assessment. A date for the Stage 2 assessment has yet to be determined, but we are aiming to complete the work this fall (if the weather cooperates), pending agricultural field ploughing, utility locates, and appropriate field, ground, and weather conditions. Once a date has been confirmed, I will provide additional meeting details and directions. Overall, we anticipate the field work will require approximately 3 days to complete. Please let me know if you have any comments regarding the Stage 1 report. If you are interested in participating in the Stage 2 fieldwork, please respond to the undersigned to get an agreement in place. Looking forward to hearing from you and have a great weekend,
		Email Response November 21, 2022: Thank you for the invitation to participate. I have quickly reviewed the report and this time do not have any concerns. Please find attached a copy of the agreement. If you have any questions, please feel free to contact me.	**Wednesday, December 7, 2022:** the agreement has been reviewed by Stantec corporate. We have left the track changes on for your review. If you have any additional edits or questions please let me know, and if you are okay with the changes we can get the agreement finalized.
		Email April 26, 2023: Attached is the agreement, we have left the track changes on for you to review. I would like to clarify Terms-S. 2.1- if this were to occur, we would require fieldwork updates and (as usual) the draft report. If you have any questions, please feel free to contact me.	
	PIC2		**Email sent July 7, 2023:**

	July 7, 2023		Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm. The PIC materials will also be available on the Town's website for your review on July 27, 2023, www.kingsville.ca. Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
	NOSC (completion)		
Chippewas of Kettle & Stony Point First Nation Chief Jason Henry Jason.Henry@kettlepoint.org	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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	PIC2		
	NOSC (completion)		
Oneida Nation of the Thames Chief Adrian Chrisjohn adrian.chrisjohn@oneida.on.ca	NOSC	**Email From Cherilyn Hill August 19, 2022:** Thank-you for the information. I have cc'd our Environment Consultation Coordinator, Brandon Doxtator as well as	**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term

Cherilyn Hill cherilyn.hill@oneida.on.ca Brandon Doxtator brandon.doxtator@oneida.on.ca Galah Antone galah.antone@oneida.on.ca		Galah Antone Chief's Assistant on this email for future reference. Brandon will follow-up with a response.	transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team. **Email Response August 19, 2022:** Thank you for letting me know. I've added Brandon and Galah to our study mailing list and they will receive all future notifications for this study
	PIC1		**Email Sent September 13, 2022:** Please see the attached Notice of Public Information Centre (PIC) #1 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The first PIC is being held to present background information, alternative solutions, and evaluation criteria for the study. The PIC will be in-person at the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Tuesday, September 20, 2022 from 5:00pm to 7:00pm. The PIC materials will also be available on the Town's website for your review on September 20, 2022, www.kingsville.ca. Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
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	NOSC (completion)		
Caldwell First Nation Chief Mary Duckworth chiefmaryduckworth@caldwellfirstnation.ca Michelle McCormack	NOSC	**Email Received September 14, 2022:** As part of the government to government relationship of First Nations with Canada, Caldwell First Nation typically does not engage in sessions meant for the general public, but rather we expect to engage on a more in-depth, community- and	**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the

ecc@caldwellfirstnation.ca Zack Hamm ecc2@caldwellfirstnation.ca		government-specific level. We will be interested in reviewing materials for this project, including the EA and any archaeology assessment associated with the development proposal. We typically work through a Technical Review Agreement for this, which includes any necessary meetings and site visits. We may at some point deem it necessary to conduct community engagement, and may, depending on the project, request the Chief and Council to weigh in. Additionally, we are interested in deploying field liaisons for any environmental or archaeological work undertaken in Caldwell's Traditional Territory, which we consider part of the legal obligation of the Duty to Consult. For this, we use a Field Participation Agreement/FPA. It is our preference to sign agreements directly with the proponent rather than consultant, but we may be flexible depending on project parameters. I can either send you copies of this agreement to fill out and have signed, or if you provide me the direct contact who would handle this on the proponent's end, I'll send the documents to them	extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
		Email Response September 23, 2022: Please find attached the agreements I mentioned. You can fill them out with your project and proponent details and have them signed on your end, then I'll have them signed by our CAO. I recommend making this for the overall project rather than specific to one AA or EA work to cut down on paperwork and to facilitate participation as fieldwork comes up/review is required. Please let me know if you have any questions.	**Email Response September 23, 2022:** Thank you for your email expressing Caldwell First Nation's interest in the Town of Kingsville, Heritage Road to Road 2 West EA study. A Stage 1 Archaeological Assessment report is currently being compiled, and we will provide it to you for review prior to filing with the Ministry of Tourism, Culture and Sport. If Stage 2 Archaeological Assessment work is required, we will be happy to coordinate participation from Field Liaisons. I have included Tim Del Greco, the Town of Kingsville Manager of Engineering, who you can address the agreements to. If at any point throughout the duration of this study you would prefer a meeting with the Town, that can be arranged. Please contact myself, or Tim if you are interested. Please let me know if you have any questions or concerns!
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		February 8, 2023: Thanks for following up. I've moved the agreements ahead to our CAO and I've entered the Stage 1 in our review queue. I should have our review complete within a week or so.	
		February 16, 2023: Find attached our letter indicating our review is complete of your West Side Collectors Stage 1 AA, and our endorsement of your recommendations. **Letter**: The Environment and Consultation Department has reviewed the noted report – your desktop research into the Study Area is in keeping with Ontario's best practices. Following review, our position is in agreement with the recommendations outlined in your report. The area retains archaeological potential and should proceed to further survey, exempting previously studied portions of the Study Area and the roadways/shoulders noted as having no extant potential. We look forward to participating in the upcoming fieldwork and reviewing the Stage 1 assessment following that.	
	PIC2		**Email sent July 7, 2023:**

	July 7, 2023		Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements. The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm. The PIC materials will also be available on the Town's website for your review on July 27, 2023, www.kingsville.ca. Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
	NOSC (completion)		
Delaware Nation (Moravian of the Thames) Chief Denise Stonefish denise.stonefish@delawarenation.on.ca Kimberly Snake director.operations@delawarenation.on.ca	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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	NOSC (completion)		
Aamjiwnaang First Nation Chief Chris Plain chief.plain@aamjiwnaang.ca Cathleen O'brien cobrien@aamjiwnaang.ca	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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	NOSC (completion)		
Munsee-Delaware Nation Chief Mark Peters chief.peters@munsee.ca reception@munsee.ca	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study, Schedule "C"
First Nations Communication Log

	NOSC (completion)		
MNO Windsor-Essex Metis Council windsoressexmetiscouncil@outlook.com shar.lan@hotmail.com	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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	NOSC (completion)		
Bkejwanong Territory (Walpole Island) Charles Sampson Mark Aquash	NOSC		**Email Sent August 19, 2022:** Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term

charles.sampson@wifn.org mark.aquash@wifn.org			transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements. This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act. If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.
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	NOSC (completion)		

From:	Lang, Sarah
Cc:	tdelgreco@kingsville.ca; Hohner, Paula; Erickson, Kane; Bartlett, Isaac
Bcc:	karina.cerniavskaja@ontario.ca; karla.barboza@ontario.ca; joseph.harvey@ontario.ca; michael.nadeau@ontario.ca; chris.evans@ontario.ca; omafra.eanotices@ontario.ca; molly.mann@ontario.ca; noticereview@infrastructureontario.ca; lisa.wren@dfo-mpo.gc.ca; mbirch@countyofessex.ca; jmustac@countyofessex.ca; rbelanger@countyofessex.ca; mgalloway@countyofessex.ca; pbziuk@countyofessex.ca; abotham@countyofessex.ca; rwyma@kingsville.ca; jnorton@kingsville.ca; aplancke@kingsville.ca; jquennell@kingsville.ca; angela.ferguson@opp.ca; bkrauter@countyofessex.ca; JBryant@erca.org; tmartin@erca.org; agyori@erca.org; planning@erca.org; customer.service@elkenergy.com; Michael.Yeung@enbridge.com; bill.sorrell@cogeco.com; rcheyne@wave-direct.com; support@xplornet.com; support@mnsi.net; rob.petruk@gosfieldtel.ca; james.goodchild@bell.ca; jason.henry@kettlepoint.org; adrian.chrisjohn@oneida.on.ca; cherilyn.hill@oneida.on.ca; chiefmaryduckworth@caldwellfirstnation.ca; ecc@caldwellfirstnation.ca; ecc2@caldwellfirstnation.ca; denise.stonefish@delawarenation.on.ca; director.operations@delawarenation.on.ca; chief.plain@aamjiwnaang.ca; cobrien@aamjiwnaang.ca; chief.peters@munsee.ca; reception@munsee.ca; windsoressexmetiscouncil@outlook.com; shar.lan@hotmail.com; charles.sampson@wifn.org; mark.aquash@wifn.org; shelley.armstrong@publicboard.ca; penny_king@wecdsb.on.ca; picajose@cscprovidence.ca; agroupservice@hotmail.com; mikebeethamconstruction@hotmail.com; brent@bkcornerstone.com; kevin@bradyhomes.ca; evolabuilders@hotmail.com; gmeuser@gordmeuserdesign.com; scott.mcfarland@homehardware.ca; p.porrone@hotmail.com; adam@solidrockhomes.ca; wbranco@noahhomes.ca; cindy.prince@amico.build; jfrench@cottfn.com; Fallon Burch; rudy@ricoroots.ca; kneuman2008@live.com; secondarylanduse@hydroone.com
Subject:	Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Friday, August 19, 2022 9:51:00 AM
Attachments:	ad_1284_nosc_Final.pdf

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

This study is being undertaken in accordance with the requirements for Schedule ‘C’ projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.

If you would like more information about the study, or would like to be added to the contact list to receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

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From:	Lang, Sarah
Cc:	Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Bcc:	karina.cerniavskaja@ontario.ca; eanotification.swregion@ontario.ca; mark.badali1@ontario.ca; karla.barboza@ontario.ca; joseph.harvey@ontario.ca; michael.nadeau@ontario.ca; chris.evans@ontario.ca; omafra.eanotices@ontario.ca; molly.mann@ontario.ca; noticereview@infrastructureontario.ca; lisa.wren@dfo-mpo.gc.ca; mbirch@countyofessex.ca; rbelanger@countyofessex.ca; mgalloway@countyofessex.ca; jbehl@countyofessex.ca; abotham@countyofessex.ca; rwyma@kingsville.ca; jnorton@kingsville.ca; aplancke@kingsville.ca; jquennell@kingsville.ca; angela.ferguson@opp.ca; bkrauter@countyofessex.ca; tmartin@erca.org; Planning; secondarylanduse@hydroone.com; customer.service@elkenergy.com; Michael.Yeung@enbridge.com; bill.sorrell@cogeco.com; rcheyne@wave-direct.com; support@xplornet.com; support@mnsi.net; rob.petruk@gosfieldtel.ca; james.goodchild@bell.ca; Jason.Henry@kettlepoint.org; adrian.chrisjohn@oneida.on.ca; cherilyn.hill@oneida.on.ca; brandon.doxtator@oneida.on.ca; galah.antone@oneida.on.ca; chiefmaryduckworth@caldwellfirstnation.ca; ecc@caldwellfirstnation.ca; ecc2@caldwellfirstnation.ca; denise.stonefish@delawarenation.on.ca; director.operations@delawarenation.on.ca; chief.plain@aamjiwnaang.ca; cobrien@aamjiwnaang.ca; chief.peters@munsee.ca; reception@munsee.ca; windsoressexmetiscouncil@outlook.com; shar.lan@hotmail.com; charles.sampson@wifn.org; mark.aquash@wifn.org; shelley.armstrong@publicboard.ca; penny_king@wecdsb.on.ca; picajose@cscprovidence.ca; agroupservice@hotmail.com; mikebeethamconstruction@hotmail.com; brent@bkcornerstone.com; kevin@bradyhomes.ca; evolabuilders@hotmail.com; gmeuser@gordmeuserdesign.com; scott.mcfarland@homehardware.ca; p.porrone@hotmail.com; adam@solidrockhomes.ca; wbranco@noahhomes.ca; cindy.prince@amico.build; rudy@ricoroots.ca; kneuman2008@live.com; mross@cogeco.ca; farmyharwood@gmail.com; kdkwiat@gmail.com; jackannbarr@gmail.com; szwiers@countyofessex.ca; dyck.kyle123@gmail.com; fisherj.fisher3@gmail.com; sbujna@gmail.com; gmccready1955@gmail.com
Subject:	Notice of Public Information Centre 1 - Town of Kingsville, Heritage Road to Road 2 West
Date:	Tuesday, September 13, 2022 2:19:00 PM
Attachments:	Town of Kingsville, Heritage Road to Road 2 West - Notice of PIC 1.pdf

Hello,

Please see the attached Notice of Public Information Centre (PIC) #1 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The first PIC is being held to present background information, alternative solutions, and evaluation criteria for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Tuesday, September 20, 2022 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on September 20, 2022, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

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Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:27 PM
To: chief.plain@aamjiwnaang.ca; cobrien@aamjiwnaang.ca
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

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Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

Stantec

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Please consider the environment before printing this email.

Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:26 PM
To: denise.stonefish@delawarenation.on.ca; director.operations@delawarenation.on.ca
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

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Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:25 PM
To: jason.henry@kettlepoint.org; 'fdesk@kettlepoint.org'
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

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Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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Please consider the environment before printing this email.

Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:28 PM
To: shar.lan@hotmail.com; windsoressexmetiscouncil@outlook.com
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

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Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:27 PM
To: chief.peters@munsee.ca; reception@munsee.ca
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

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Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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From:	Lang, Sarah
To:	Cherilyn Hill
Cc:	tdelgreco@kingsville.ca; Hohner, Paula; Erickson, Kane; Bartlett, Isaac; Brandon Doxtator; Galah Antone
Subject:	RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Friday, August 19, 2022 11:31:00 AM

Hi Cherilyn,

Thank you for letting me know. I've added Brandon and Galah to our study mailing list and they will receive all future notifications for this study.

Best Regards,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

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Please consider the environment before printing this email.

From: Cherilyn Hill <cherilyn.hill@oneida.on.ca>
Sent: Friday, August 19, 2022 10:16 AM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Brandon Doxtator <environment@oneida.on.ca>; Galah Antone <galah.antone@oneida.on.ca>
Subject: RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Good Morning Sarah:

Thank-you for the information. I have cc'd our Environment Consultation Coordinator, Brandon Doxtator as well as Galah Antone Chief's Assistant on this email for future reference. Brandon will follow-up with a response.

In Friendship,

Cherilyn Hill
Oneida Nation of The Thames
2210 Elm Ave Southwold, ON N0L 2G0
Phone: 519-652-6161 ext. 804

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From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: August 19, 2022 9:51 AM
Cc: tdelgreco@kingsville.ca; Hohner, Paula <Paula.Hohner@stantec.com>; Erickson, Kane <Kane.Erickson@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

CAUTION: This email originated from outside of the Oneida Nation Of The Thames Organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning,

Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.

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Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec

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Please consider the environment before printing this email.

Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:24 PM
To: adrian.chrisjohn@oneida.on.ca; cherilyn.hill@oneida.on.ca; environment@oneida.on.ca; galah.antone@oneida.on.ca
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

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Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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Please consider the environment before printing this email.

Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:28 PM
To: 'charles.sampson@wifn.org'; 'mark.aquash@wifn.org'
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

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Thank you,

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Direct: 519-432-4292

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Caldwell First Nation

From:	Zack Hamm
To:	Lang, Sarah
Cc:	Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac; Michelle McCormack; Allen Deleary
Subject:	Re: Notice of Public Information Centre 1 - Town of Kingsville, Heritage Road to Road 2 West
Date:	Friday, September 23, 2022 11:35:08 AM
Attachments:	Technical Review Agreement July 15 final.docx Fieldwork Participation Agreement July 15 final.docx

Thanks, Sarah,

Please find attached the agreements I mentioned. You can fill them out with your project and proponent details and have them signed on your end, then I'll have them signed by our CAO. I recommend making this for the overall project rather than specific to one AA or EA work to cut down on paperwork and to facilitate participation as fieldwork comes up/review is required. Please let me know if you have any questions.

Best,

Zack Hamm

Consultation Coordinator

Environment and Consultation Department (ECD)

Caldwell First Nation

14 Orange Street

Leamington | ON | N8H 1P5

Phone: 226-936-2940

ecc2@caldwellfirstnation.ca

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On Fri, Sep 23, 2022 at 11:28 AM Lang, Sarah <Sarah.Lang@stantec.com> wrote:

> Good Morning Zack,
>
> Thank you for your email expressing Caldwell First Nation's interest in the Town of Kingsville, Heritage Road to Road 2 West EA study.
>
> A Stage 1 Archaeological Assessment report is currently being compiled, and we will provide it to you for review prior to filing with the Ministry of Tourism, Culture and Sport. If Stage 2 Archaeological Assessment work is required, we will be happy to coordinate participation from Field Liaisons.
>
> I have included Tim Del Greco, the Town of Kingsville Manager of Engineering, who you can address the agreements to. If at any point throughout the duration of this study you would prefer a meeting with the Town, that can be arranged. Please contact myself, or Tim if you are interested.
>
> Please let me know if you have any questions or concerns!
>
> Thank you,
>
> **Sarah Lang**
>
> Environmental Planner
> sarah.lang@stantec.com
>
> Stantec
>
> 
>
> 
>
> The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

From: Zack Hamm <ecc2@caldwellfirstnation.ca>
Sent: Wednesday, September 14, 2022 10:15 AM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>; Michelle McCormack <ecc@caldwellfirstnation.ca>; Allen Deleary <cao@caldwellfirstnation.ca>
Subject: Re: Notice of Public Information Centre 1 - Town of Kingsville, Heritage Road to Road 2 West

Good morning Sarah,

As part of the government to government relationship of First Nations with Canada, Caldwell First Nation typically does not engage in sessions meant for the general public, but rather we expect to engage on a more in-depth, community- and government-specific level. We will be interested in reviewing materials for this project, including the EA and any archaeology assessment associated with the development proposal. We typically work through a Technical Review Agreement for this, which includes any necessary meetings and site visits. We may at some point deem it necessary to conduct community engagement, and may, depending on the project, request the Chief and Council to weigh in.

Additionally, we are interested in deploying field liaisons for any environmental or archaeological work undertaken in Caldwell's Traditional Territory, which we consider part of the legal obligation of the Duty to Consult. For this, we use a Field Participation Agreement/FPA.

It is our preference to sign agreements directly with the proponent rather than consultant, but we may be flexible depending on project parameters. I can either send you copies of this agreement to fill out and have signed, or if you provide me the direct contact who would handle this on the proponent's end, I'll send the documents to them.

Best,

Zack Hamm

Consultation Coordinator

Environment and Consultation Department (ECD)

Caldwell First Nation

14 Orange Street

Leamington | ON | N8H 1P5

Phone: 226-936-2940

ecc2@caldwellfirstnation.ca

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On Tue, Sep 13, 2022 at 2:19 PM Lang, Sarah <Sarah.Lang@stantec.com> wrote:

> Hello,
>
> Please see the attached Notice of Public Information Centre (PIC) #1 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study will involve the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.
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Environmental Planner
sarah.lang@stantec.com

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Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:26 PM
To: chiefmaryduckworth@caldwellfirstnation.ca; ecc@caldwellfirstnation.ca; ecc2@caldwellfirstnation.ca
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

Stantec

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Caldwell First Nation

14 Orange Street, Leamington, Ontario, N8H 1P5
Phone: **519-322-1766** Fax: **519-322-1533**

To: Darren Kipping, Project Archaeologist, Stantec

RE: Stage 1 Archaeological Assessment: Kingsville Municipal Class Environmental Assessment of a West Side Collector Road

The Environment and Consultation Department has reviewed the noted report – your desktop research into the Study Area is in keeping with Ontario's best practices. Following review, our position is in agreement with the recommendations outlined in your report. The area retains archaeological potential and should proceed to further survey, exempting previously studied portions of the Study Area and the roadways/shoulders noted as having no extant potential.

We look forward to participating in the upcoming fieldwork and reviewing the Stage 1 assessment following that.

Respectfully,

Zack Hamm
Environment & Consultation Department Manager
Caldwell First Nation
226-936-2940
Ecd.manager@caldwellfirstnation.ca

From:	Zack Hamm
To:	Kipping, Darren
Cc:	Michelle McCormack; Jenna Morrison; Erickson, Kane; Micks, Sarah; Tim Del Greco; Rob Lukacs
Subject:	Re: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2
Date:	Thursday, February 16, 2023 3:18:52 PM
Attachments:	CFN Review West Side Collector Road Kingsville Stage 1 AA.pdf

Good afternoon Darren,

Find attached our letter indicating our review is complete of your West Side Collectors Stage 1 AA, and our endorsement of your recommendations.

Best,

Zack Hamm

Environment and Consultation Department Manager

Environment and Consultation Department (ECD)

Caldwell First Nation

14 Orange Street

Leamington | ON | N8H 1P5

Phone: 226-936-2940

ecd.manager@caldwellfirstnation.ca

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On Wed, Feb 8, 2023 at 12:48 PM Kipping, Darren <Darren.Kipping@stantec.com> wrote:

> Thanks Zack.

Darren Kipping MA

Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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From: Zack Hamm <ecd.manager@caldwellfirstnation.ca>
Sent: Wednesday, February 8, 2023 12:36 PM
To: Kipping, Darren <Darren.Kipping@stantec.com>
Cc: Michelle McCormack <ecc@caldwellfirstnation.ca>; Jenna Morrison <etow@caldwellfirstnation.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Lang, Sarah <Sarah.Lang@stantec.com>; Tim Del Greco <tdelgreco@kingsville.ca>
Subject: Re: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Hello Darren,

Thanks for following up. I've moved the agreements ahead to our CAO and I've entered the Stage 1 in our review queue. I should have our review complete within a week or so.

Best,

Zack Hamm

Environment and Consultation Department Manager

Environment and Consultation Department (ECD)

Caldwell First Nation

14 Orange Street

Leamington | ON | N8H 1P5

Phone: 226-936-2940

ecd.manager@caldwellfirstnation.ca

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On Fri, Feb 3, 2023 at 11:54 AM Kipping, Darren <Darren.Kipping@stantec.com> wrote:

> Hey Zack,
>
> Hope 2023 is treating you well so far.
>
> I am just following up on the Stage 1 West Side Collector Road report and if Caldwell had any comments after review.
>
> We are looking to submit the Stage 1 report soon prior to the anticipated Stage 2 fieldwork this spring.

Regards,

Darren Kipping MA

Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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From: Kipping, Darren
Sent: Friday, November 18, 2022 2:05 PM
To: Zack Hamm <ecc2@caldwellfirstnation.ca>; Michelle McCormack <ecc@caldwellfirstnation.ca>; Jenna Morrison <etow@caldwellfirstnation.ca>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Lang, Sarah <Sarah.Lang@stantec.com>; Tim Del Greco <tdelgreco@kingsville.ca>
Subject: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Good afternoon Zack,

Further to previous correspondence sent by Stantec on behalf of the Town of Kingsville (the Town), Stantec is completing an archaeological assessment in in support of the Town's proposed West Side Collector Road expansion as part of a Municipal Class Environmental Assessment (EA). The Class EA is being completed to support a proposed collector road, i.e., an extension of Heritage Road between County Road 20 and Municipal Road 2 in the town of Kingsville to provide service to future local roads as part of future development.

Please see a draft Stage 1 archaeological assessment of the study area for your review.

Stantec will also be completing a Stage 2 archaeological assessment of the study area. Stantec and the Town would like to invite a representative from Caldwell First Nation to join the archaeological crew during the archaeological assessment. A date for the Stage 2 assessment has yet to be determined, but we are aiming to complete the work this fall (if the weather cooperates), pending agricultural field ploughing, utility locates, and appropriate field, ground, and weather conditions. Once a date has been confirmed, I will provide additional meeting details and directions. Overall, we anticipate the field work will require approximately 3 days to complete.

Please let me know if you have any comments regarding the Stage 1 report and if you are interested in participating in the Stage 2 fieldwork, please respond to the undersigned to get an agreement in place.

Looking forward to hearing from you and have a great weekend,

Darren Kipping MA

Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Caution: This email originated from outside of Stantec. Please take extra precaution.

Chippewas of the Thames First Nation

From:	Chippewas of the Thames First Nation
To:	fburch@cottfn.com; jmills@cottfn.com; rsmith@cottfn.com; Lang, Sarah
Subject:	Decision regarding consultation: 165001284 - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date:	Friday, September 9, 2022 10:43:58 AM
Attachments:	consultation-response-20163-165001284-20220909-1039.pdf inv-0387-heritage-line-extension-kingsville-stantec.pdf Wiindmaagewin-CONSULTATION-PROTOCOL-website.pdf

---

Please see attached PDF.

Deshkan Ziibiing
Chippewas of the Thames
First Nation Treaties, Lands
and Environment

320 Chippewa Road
Muncey, ON, N0L 1Y0
Tel: 519-289-5555
Fax: 519-289-2230
info@cottfn.com

Project Name:
Town of Kingsville, Heritage Road to Road 2 West, MCEA

FN Consultation ID:
165001284

Consulting Org Contact:
Sarah Lang

Consulting Organization:
Stantec

Date Received:
Monday, August 29, 2022

September 9, 2022

Dear: Sarah,

We have received information concerning the Town of Kingsville, Heritage Road to Road 2 West MCEA, submitted August 29, 2022. The proposed project is located within the McKee Treaty area, to which Chippewas of the Thames First Nation (COTTFN) is a signatory. It is also located within the Big Bear Creek Additions to Reserve (ATR) land selection area, as well as COTTFN Traditional Territory.

After reviewing the Town of Kingsville, Heritage Road to Road 2 West MCEA, we have minimal concerns with the information that has been provided at this time. If there is an Archaeology Assessment conducted, 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 protocol - a document and a process that will guide positive working relationships. As per 'Appendix D' of the Wiindmaagewin, please find attached invoice #0387.

Please do not hesitate to contact me if you have any questions.

Sincerely,

_____

Original Signed
Fallon Burch
Consultation Coordinator
Chippewa of the Thames First Nation
(519) 289-5555 Ext. 251

Chippewas of the Thames First Nation
Treaties, Lands & Environment Department

320 Chippewa Rd.
Muncey, Ontario N0L 1Y0

P: 519-289-5555
F: 519-289-2230

Consultation@cottfn.com
www.cottfn.com/consultation

Bill To: Stantec Consulting Ltd.
Phone: (519) 645-2007
Invoice #: 0387

ATTN: Sarah Lang

Address: 600-171 Queens Avenue
London, ON N6A 5J7

Fax:
Email: sarah.lang@stantec.com

Invoice Date: 2022-09-09

Invoice For: Heritage Road Extension Kingsville-Review/Screen

Item #	Description	Qty	Unit Price	Discount	Price
1	Filing Fee	1	$ 125.00	$ -	**$ 125.00**
2	1 - Consultation Coordinator	1	$ 85.00	-	**85.00**

Make all checks payable to:
Chippewas of the Thames First Nation
320 Chippewa Rd. Muncey, ON N0L 1Y0
Attn: Wiindmaagewin

Invoice Subtotal	$ 210.00
Administration Fee	15.00%
Other	
Deposit Received	
TOTAL	**$ 241.50**

** Charges comply with the *Consultation Service Fees Schedule, Appendix D of the* Wiindmaagewin

INTERAL USE ONLY: 20150 EC8800

Deshkan Ziibiing/Chippewas of the Thames First Nation

Wiindmaagewin

CONSULTATION PROTOCOL

Final

26 November 2016

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1. Introduction and purpose

The watersheds of southwestern Ontario have been the home of Anishinaabe people for millennia. Widespread archaeological evidence of the "Western Basin Late Woodland Tradition" confirms our traditional oral history teachers' accounts of this lengthy Anishinaabe dwelling in our territory of Waawayaatanong, or "Round Lake." This region is known as the third stopping place of the Water Drum on its sacred journey to Madeline Island, centuries before the era of colonization. We have continued to dwell here despite the disruptions stemming from conflicts with other Anishinaabe nations also dwelling near the Great Lakes, from the wars between various settler powers between 1757 and 1815, and from the imposition of Britain's, then the United States', and Canada's colonial rule.

Deshkan Ziibiing edbendaagzijig, "those that belong to Antler River" (The Chippewas of the Thames First Nation) comprise one of the traditional Anishi naabe nations governing the territory of Waawayaatanong, collectively known now as the Waawayaatanong Anishnaabeg Southwest Treaty Council. As a governing body, Deshkan Ziibiing has lengthy experience in developing relations with other communities interested in the lands and waters of Waawayaatanong, as early French explorers recognized, and as our historic treaty-making with Britain demonstrates.

The purpose of this protocol is to ensure that our relationships with other communities develop in the future in ways that are fully respectful of the breadth of Deshkan Ziibiing's responsibilities to these watersheds, and ways that are protective of the full range of our rights. This protocol shall serve to guide governments and third parties interested in pursuing healthy and mutually beneficial relationships with Deshkan Ziibiing.

2. Statement of reserved rights

The rights that Deshkan Ziibiing exercises in relation to our ancestral lands, treaty lands, reserve lands, and Addition to Reserve lands, are inherent, grounded most basically in the Creator's gift of lands, waters, and way of life to ndodeminaanig, "our clans." These rights are embodied in our historical and ongoing occupation of our territory, and in our practice of self-determination as a people. Our rights as a self-determining people are also recognized within, although they are certainly not created by, the formation of several treaties, the terms of constitutional documents, and international conventions, including Article three of the Jay Treaty (1794). Our historic treaty partner, Britain, recognized these rights, as seen within the joint context of the Royal Proclamation of 1763 and the Treaty of Niagara, 1764; and within the subsequent treaties formed between 1790 and 1827. Our traditional understanding of these treaties with Britain indicates that they in no way eliminate our own rightful control of, and enduring ability to benefit from, the lands and waters within our territory. Section 35(1) of *Canada's Constitution Act*, 1982, also clearly recognizes these rights, as do the expressions of international customary law elaborated within the *United Nations Declaration on the Rights of Indigenous Peoples* (2007). This present protocol neither contains nor implies anything that subtracts or derogates from the fullest understanding of the range of rights found within those legal instruments, or within our traditional and customary law.

3. Territory

Traditional Anishinaabe territory in southwestern Ontario north of the Thames River includes the 2.78 million acres marked on the treaty maps concerning the Longwoods (1822) and Huron (1827) tracts. In addition, south of the Thames River, traditional territory also includes the lands addressed in the McKee Treaty (1790), the London Township Treaty (1796), and the Sombra Township Treaty (1796). Deshkan Ziibiing is party with other Anishinaabe nations to several of these treaties, but is the sole Anishinaabe party to the Longwoods Treaty.

As recognized in these treaties, the ancestral lands of Deshkan Ziibiing thus include all the lands and waters between Lake Huron to the north and Lake Erie to the south, and stretching eastward from the eastern banks of the St. Clair and Detroit rivers to the Mississaugas of New Credit 1792 treaty lands, a line running northwards from Point Bruce on the Erie shore, to Point Clark on the Huron shore (see Appendix A for map). In addition, Deshkan Ziibiing territory extended into what are now the American states of Michigan and Ohio. Historically, we managed portions of our territory in common with other Anishinaabe nations, and at times in partnership with the Haudenosaunee. Nevertheless, the lands bordering the northern bank of the Thames River have been solely in the stewardship and possession of Deshkan Ziibiing since before the treaty era.

Upper Canada's settlement and development from the early nineteenth century certainly transformed much of this land from its pre-treaty state. Nevertheless, we who are Deshkan Ziibiing edbendaagzijig continue to hold our lands, and to assert over the full extent of our treaty lands and traditional territory our historic commitment to the protection of the watersheds of the Thames River, Bear Creek, and the Au Sable River, and to the Erie and Huron lakeshores. For the purposes of this protocol, we regard all of our ancestral lands as part of our consultation territory. As well, our understanding from our elders, an understanding we share with many other Anishinaabe nations, is that our treaties did not "surrender" our lands, despite what Britain and Canada have presumed. As part of our ongoing commitment to these watersheds, the citizens of Deshkan Ziibiing are currently engaged in aboriginal title research concerning the bed of the Thames River.

4. Community profile

As a community, Deshkan Ziibiing has always welcomed and incorporated people from other nations. Our families have always shared a common world around the Great Lakes with the families of the Pottawatomis and the Odawas. Delawares and Oneidas were welcomed here between 1791 and 1840, and allowed to create their own communities on land adjacent to and within our homeland. At various times, other Haudenosaunee, Shawnees, Huron/Wendats, as well as Anglo or French traders and settlers marrying our people, have all been incorporated into our society. Today, our population is approximately 2,800 people, with 1,000 residing here at Deshkan Ziibiing.

Institutions operating within our homeland territory today include a school system with an elected board; a midewigaan (mide lodge), a sundance lodge; the Southwest Ontario Aboriginal Health Access Centre and the Nimkee Nupigawagan Healing Centre; several businesses,

including retail, service and engineering consulting firms; the Chippewa Development Corporation, the Big Bear Creek Trust, and the Thunderbird Trust; as well as police and fire services, government offices, and two churches.

5. Historical Relationships

Deshkan Ziibiing has long engaged with other nations, in both war and peace. Prior to European movement into the Great Lakes region, conflict with various Iroquoian-speaking peoples in southern Ontario was also balanced with periods of peace. The creation of the fur trade, however, led to increased warfare with the Haudenosaunee – the Iroquois Confederacy, and to various protective alliances with the Hurons/Wendats, and with other Anishinaabe peoples. Deshkan Ziibiing allied with France in its war with Britain in the mid 18th century. Our warriors also fought with Pontiac to protect lands west of the Alleghenies after France withdrew from the Americas. Deshkan Ziibiing later allied with Britain in war against the revolutionary American colonies, and then again in the War of 1812 against American expansion into the Great Lakes region. Our ancestors fought during that war with Tecumseh, the great Shawnee leader and advocate for Anishinaabe independence, in order to protect our lands. His descendants are among our citizens today. Following Britain's retreat in 1815, our warriors were the sole defenders of Upper Canada from American incursions. As allies of Britain during the 20th century, our young men also fought and died in two world wars.

Deshkan Ziibiing's relationships with other nations have generally been pursued through the creation of treaty partnerships. The oldest of our partnerships, more recently called the Three Fires Confederacy, is one grounded in shared language and joint protection with the Odawa and Potawatomi nations. Gdoonaaganinaan "Our Dish"— formed with the Haudenosaunee; and the Treaty of Montreal – formed with the French and over thirty Anishinaabe nations; ended decades of war and competition over the fur trade, in 1701. These partnerships establishing the foundations of peace were all grounded in mutual respect, and a shared understanding that legal alliances between distinct political communities are created and maintained through ceremony, through appeals to the Creator to attest the sincerity of promises, and through an exchange of wampum belts. Our treaty alliances were most basically a mutual extension of our kinship loyalties and responsibilities, as our gimaag indicated by attaching their doodem symbols to the Longwoods Treaty, and to many others. This extension of kinship to create social and political bonds remains as significant for us today as it was for our ancestors during the tumultuous years of the 17th and 18th centuries.

The great Treaty of Niagara (1764) emerged from this long practice, and is the template for all subsequent treaties between Britain and the Chippewas of the Thames. Its Two Row Wampum, a belt the Haudenosaunee first used with the Dutch in 1613, provides a fuller account of the sort of relationship of equals established between Britain and Chippewas of the Thames than appears in the written texts of the Royal Proclamation (1763), the post-War of 1812 treaties, or within any legislation embodying Canada's unilateral presumption of colonial rule over us.

Deshkan Ziibiing made all of its treaties with Britain, and none with Canada, as our elders have emphasized. The legal certainty that Canada has derived from those treaties is weaker than it might be had it undertaken to achieve a common understanding with our people. Apart from

our gimaag having inscribed their doodem symbols on parchment and paper, the treaty texts, and most other documents pertaining to the formation of our treaties, are only available in English. The documentary record contains very little to indicate the fullness of our ancestors' understandings of the treaty process, or of the shameful nature of the post-War of 1812 relationship with Britain, and subsequently with Canada.

Britain's withdrawal from the Ohio valley, and gradual abandonment of its Anishinaabe allies to the colonial administration of Canada, has had a lasting effect on the people of Deshkan Ziibiing. Colonial rule presumed the 'surrender' of well over 90% of our traditional territory. Efforts to 'civilize' our people, through Canada's unilateral imposition of the Indian Act (1876), confinement through the imposition of the 'Indian Pass' system, harsh policing of our harvesting and hunting practices, and not least, the creation of a residential school on our homeland (Mt. Elgin Industrial Institute, 1851-1946), certainly took a toll on our well-being, and constrained our control and use of our lands and waters. However, throughout the hundred and fifty years of Canada's assertions of sovereignty over our lands and nation, our people have remained insistent on our continued inherent rights. In 2013, Deshkan Ziibiing resolved a Specific Land Claim dispute with Canada, over its taking of the Big Bear Creek lands in the 1830s. In 2015 the Supreme Court of Canada agreed to consider our objections to the failure of consultation surrounding Enbridge's reversal of flow for Line 9. As the city of London expands, and as the province undertakes a variety of energy development projects, Deshkan Ziibiing remains intent on protecting our traditional territory. Our vision for the engagement formalized in this protocol remains that of Tecumseh, our treaty chiefs, and the Two Row Wampum. First, we are committed to self-determination regarding the preservation and restoration of our Anishinaabe jurisdiction and heritage. Second, we are committed to the formation of fair partnerships focused on the wise and respectful use of our traditional lands and waters.

6. Principles of intersocietal governance and communication

Our engagement with other communities stems from our recognition of several principles, which derive from our Creator's gifts to us of life and land, and from our Creator having placed us within a world full of relationships with others. Our responsibility to maintain these relationships, in accord with principles derived from our creation story, is central to our continued wellbeing as a people. These principles animated our ancestors in their treaty partnerships historically, and they remain alive today in our dealings with federal, provincial, and municipal bodies. They indicate our fundamental orientation towards all matters of discussion and consultation concerning our rights and responsibilities. They function in addition to, although not in conflict with, the well known principles that Canada's courts have constructed from the common law regarding "the duty to consult and where necessary accommodate" (Haida Nation 2004). The courts have had a difficult time explaining how common law principles serve the task of reconciliation between settlers and Anishinaabe peoples, for they leave parties at odds, and mandate an inherently adversarial process. Our principles, however, grounded in our creation story, do provide a basis for fruitful and healthy intersocietal development, governance, and communication.

a. Principles of governance

(1) Gdinawendimi: "We are all related." A basic truth of our creation story is that we are related to everything that shares the world with us. Our original Anishinaabe doodem ancestors: Ajijaak "Crane," Waabizhesh "Marten," Bneshiinh "Bird," Wawashkesh "Deer," Maang "Loon," Giigoonh "Fish," Mko "Bear;" all demonstrate that we humans are related to, that is, are family with, beings who are other than human. That our ancestors shaped our treaties with Britain by inscribing many of those same doodemag on treaty texts indicates that they extended the web of kinship relations to include settlers. We expect that all consultation and discussion with governments and third parties will focus on how the proposed project will foster this relatedness.

(2) Mno-bmaadiziwin: "The good life." We understand that the Creator placed us within our world's web of spiritual and bio-physical relationships in order for life to flourish, for all to enjoy the world. Life flourishes when we base our relationships on the gifts of the Seven Grandfathers: Nbwaakaawin "wisdom," Zaagidiwin "love," chi "respect," Aakde'ewin – or Zoongide'ewin "bravery," Gwakwaadiziwin "honesty," Dbaadendiziwin "humility," Debwewin "truth." We expect that all proposals from and discussions with governments and third parties will demonstrate how the proposed project enhances the good life for all our relations.

(3) Naaknigewin: "Law". This measure for our decisions and determinations is the gift of the Creator. We expect that all consultation and discussion with governments and third parties will aim to respect and embody law as the measure for our decisions provided by the Creator.

(4) Anishinaabe dbendizawin: "Anishinaabe independence," or "self-determination." Some of our elders overcame their repressive years spent within the local residential school, and were able to play crucial roles in entrenching the recognition of our rights into sec. 35(1) of Canada's Constitution Act, 1982. Their personal struggles have taught us that we were created to live as an independent people, and are therefore able to ally with, but not to become subject to, other independent peoples. Many British treaty negotiators failed to understand this. Canada's unilateral imposition of regulations on our people, and its presumptuous administration of our lands, stems from its own consistent failure to understand this. Nevertheless, we have seen in some settler leaders, such as Sir William Johnson and his work at Niagara in 1764, the enduring possibility that our peoples might finally create a relationship of equality. William Johnson's Two Row Wampum embodies this alliance of equals, each party free to follow its own way without interference, but each also attentive to the wellbeing of the other. We expect that all proposals from governments will respect this most basic tenet of the Two Row Wampum.

b. Principles of communication

(1) Zgaswediwin: "To smoke together." This word combines two sorts of acts into one. When Anishinaabeg met in council, they began with the ceremony of smoking. In our stories, Nanabush provided our ancestors with the pipe of peace in order to help us foster the path of goodwill and reconciliation towards earth, plants, animals, and our fellow humans. Asemaa, "tobacco," carries our thoughts and prayers to the Creator, and demonstrates our desire to speak the truth, and to build relationships that reflect gratitude in our dependence on the natural order, law, or policing naaknigewin. We expect that all consultation and communication regarding project proposals

reflects the willingness of governments and third parties to place their thoughts and words in the same context.

(2) Ginoondiwin: “talk to each other.” As our elders have said, and as many accounts of Anishinaabe councils have indicated, our practice has been to reach decisions in common, after full and satisfying discussion addressing the concerns of all involved. As Mississauga historian and chief Peter Jones (1802-56) noted in his rending of a council meeting during the 1850s, the practice of addressing the concerns of all greatly reduced the number of “warm discussions.” We expect federal, provincial and municipal governments to engage with us in consultation that is animated by their need to satisfy our concerns, and not by the needs of third parties, or by deadlines imposed outside of those we might mutually agree to within our processes of consultation. In addition, we expect that when governments attempt to justify project proposals likely to infringe upon our rights and responsibilities, that we will be the party that determines the adequacy of the justification.

(3) Gii-nenmaasiinaawaan: “they didn’t let them”. Anishinaabe participants in treaty talks with settler governments fully expected to be able to consent to or dissent from the proposed matter at hand, as the available written record in Anishinaabemowin makes clear. Our consent to proposals that might affect our rights and responsibilities to our lands, waters and wellbeing is basic to our status as a people possessing dibendizawin, or self- determination. In all matters of consultation and communication, we expect federal, provincial and municipal governments to honour this customary principle of international law, embodied also in article 32(2) of The United Nations Declaration on the Rights of Indigenous Peoples (2007), and finally adopted by Canada in 2016.

(4) Chi-dibaakinigewin: a “great judgement,” as in a treaty between nations. Our ancestors spoke solemnly with settler governments in order to reach agreements that would establish mutually beneficial relationships, which by their nature are on-going, and subject to changing needs and circumstances. However, governments have been one-sided in regard to changing needs in relation to our lands, waters and wellbeing. They have seen our agreements as open, but only as justifying their constant erosion of our control over those lands and waters, and of our well being. We expect that governments interested inconsultation will temper this apparently endless desire to consume our lands and waters to the ill effect of our own wellbeing. As well, we expect that when governments insist to the contrary on the legal certainty of treaties and agreements, they will demonstrate persuasively to us how that certainty of the treaty encourages the mutually beneficial relationships that treaties are supposed to establish.

c. Principles of co-existence and economy

(1) Gdoonaaganinaan: "Our Dish," the agreement reached with the Haudenosaunee in 1701, enabled both our peoples to hunt and harvest in mutual safety, and for mutual wellbeing, within our ancestral lands. We expect federal, provincial and municipal governments to demonstrate clearly and persuasively how proposed projects will undertake to secure mutual safety and mutual wellbeing.

(2) Maatookiiwin: "sharing" Our agreements with settler governments concern our sharing of the lands that the Creator has shared with us. There are no Anishinabemowin transcriptions of treaties that use the word adaawaage, meaning "to sell." Similarly, as Akiwenzii, gimaa of the Lac Courte Orielles Ojibwe, said in relation to the 1837 treaty he co-signed with a US delegation seeking Wisconsin lands: "Gaawiin wiin gimiinisinoon, anishaa ida wi'in," that is, "I do not make a present of this, I merely lend it to you." Or, in an 1864 petition to U.S. President Abraham Lincoln, several of those same Anishinaabe chiefs said "Gaawin wiin aki nimbagidinamawaasii," that is, "I do not offer the land." We expect that governments interested in projects affecting our lands, waters, and wellbeing will demonstrate how the proposed project embodies this same spirit of sharing of what the Creator has provided, and also charged us with protecting.

(3) Gnawenjigewin: "to take care of things." Our use of the lands and waters of our territory is subject to Anishinaabe principles of stewardship, derived from our creation story, and instilled through the growth of traditional knowledge. We expect that all communication regarding project proposals will demonstrate how projects plan to incorporate Deshkan Ziibiing participation in the tasks of co-management and governance, as well as employ conservation practices grounded in and consistent with our traditional knowledge.

(4) Niigaan-inaabiwin: "looking ahead". Decision making that respects the full web of relationships within which the Creator has placed us aims to chart the impacts of our choices as far as possible into the future, in order to minimize the destructiveness of those choices. We expect that all government decisions and project proposals with potential to affect our lands, waters, air, health and wellbeing will demonstrate as concretely as possible the long-term implications of the proposal for Deshkan Ziibiing. We expect that they will also concretely demonstrate the steps to be taken to ensure that they will uphold Deshkan Ziibiing's responsibilities to protect the web of relationships constituting our traditional territory.

7. Consultation process and requirements

a. Aims of consultation

Appropriate consultation between Deshkan Ziibiing edbendaagzijig and federal, provincial and municipal authorities serves several purposes. At its heart, appropriate consultation is a dialogue between communities, a mutual engagement, rather than a mere notification of an external party's intention. Our being fully informed about projects and decisions that may affect our nation protects our full range of rights and responsibilities, as recognized within

traditional Anishinaabe law, in Canada's Constitution, within the jurisprudence of Canada's courts, and in customary international law. It "burnishes the Covenant Chain," by fostering the treaty relationship that should, but does not yet, exist between our people and Canada. In addition to protecting our range of rights, appropriate accommodation also promotes and deepens the path of reconciliation that will ensure a healthier future for both settler and Anishinaabe communities. Appropriate consultation encourages the development of projects that are mutually beneficial to all parties, and it ensures that projects have wide legitimacy both within Deshkan Ziibiing, and also within the larger network of Anishinaabe nations at home around the Great Lakes.

b. Responsibilities of all parties

(1) All parties engaged in consultation activities have responsibilities in common. Among these are the responsibilities to participate in good faith, and to treat each other with respect, transparency, and honesty. In addition, Deshkan Ziibiing recognizes that each party has its own unique responsibilities to ensure that the outcome of consultation is a fair, respectful and mutually beneficial understanding of the matter under discussion. Our Anishinaabe understanding of our treaty relationships as the extension of family networks and the attribution of kinship terms encourages us to respect the range of responsibilities borne by parties to consultation.

(2) Crown responsibilities: Deshkan Ziibiing expects that federal, provincial, and municipal governments will consistently embody the Crown's self-proclaimed obligations towards First Nations. These obligations include a) its fiduciary duties, b) its unyielding motivation to uphold the honour of the Crown, and c) its ongoing commitment to pursue reconciliation with First Nations. Deshkan Ziibiing edbendaagzijig expect that all inquiries and proposals submitted by the Crown for our consideration, and all government actions undertaken during the course of consultation, are capable of upholding the highest standards of justification on the basis of these three obligations.

Specific Crown responsibilities include timely, effective, and engaged oversight and coordination of all consultation processes and activities involving Deshkan Ziibiing, and consistent with the honour of the Crown. Competent oversight and coordination requires the Crown to "trigger" the consultation process, that is, as soon as it becomes aware of, or contemplates, activities and proposals that may affect us. Such oversight should include regular updates and dialogues on all consultation processes under way with Deshkan Ziibiing, and on all Crown determinations of limits to consultation. Oversight also includes due diligence to insure that a project's range, depth, and timeframe of consultation activities are consistent with, and adequate to, Deshkan Ziibiing's own expressed needs. Crown responsibility also includes timely and adequate provision of funding necessary for Deshkan Ziibiing to participate in consultation. As well, Crown responsibility includes forthright commitment to the timely and effective accommodation of Deshkan Ziibiing's full range of rights. In addition, Crown responsibility extends to its earnest incorporation of Deshkan Ziibiing's partnership into the planning and decision-making process related to the project, as these affect Deshkan Ziibiing lands, waters, air, health, and wellbeing.

Third party responsibilities: Deshkan Ziibiing acknowledges that third party entities may be delegated certain procedural aspects of the Crown's duty to consult with us, when they pursue commercial or developmental interests in accessing our lands and waters, or potentially affecting our air, health, and well- being. We expect that third parties are responsible for providing full, accurate, and up-to-date information about their projects. Such information should be provided as it becomes available, and should not be subject to explicit requests from Deshkan Ziibiing staff. We also expect that that a project proponent seeking to enter into a relationship with us will actively work to accommodate our concerns, and to view its responsibility to accommodate in a positive manner. To that end, we expect that proponents will be conscientious in adjusting their timelines in order to allow for Deshkan Ziibiing's full participation in any necessary consultation activities. We expect that project proponents will acknowledge their responsibility to consider alternative approaches with us, when implementing their proposal conflicts with our aboriginal and treaty rights, and our ability to protect our lands, waters, air, health, and wellbeing. We expect that proponents will also commit to explore with Deshkan Ziibiing opportunities to share meaningfully in the range of benefits that might result from implementation of their project.

Should consultation need to proceed past the initial stage, we expect project proponents to provide us with the following written acknowledgements:

a) a statement fully acknowledging our inherent and treaty rights, and our responsibilities to our territory, as they relate to the project,

b) a statement indicating that the proponent will share this acknowledgement of our rights and responsibilities in all subsequent communication about the project with shareholders, the public, government departments, lenders, and others,

c) a statement instructing the proponent's subcontractors that they also function within the same framework of Deshkan Ziibiing rights and responsibilities,

d) a statement disclosing all judgments made against the proponent in all jurisdictions, the involvement of all silent partners, and all agreements made with other First Nations, American Indian tribes, and Anishinaabe communities globally, and

e) a statement acknowledging that work on the project will only follow the full process of consultation and determination of accommodation.

(4) Deshkan Ziibiing responsibilities: These are, first of all, those that our elders have conveyed from the Creator regarding our obligations to protect the land and waters of our traditional territory. Our responsibilities to our contemporary partners in consultation are similar to those we undertook together with our historic partner in treaty. They include our commitment to uphold the terms of this protocol, as well as of any subsequent agreements arising in regard to consultation and accommodation. We acknowledge the responsibility of staff to provide accurate, sufficient, and timely government or proponent information to Chief and Council, and to Deshkan Ziibiing edbendaagzijig, in order to ensure that our people engage in full discussion and informed decision making regarding proposed projects. We acknowledge our responsibility to explain to governments and proponents, clearly and fully, any concern, distrust, or discomfort

that we have with a project proposal, to state our rights clearly and forthrightly, and to offer suggestions about how proponents and governments might resolve our concerns in good faith.

c. Contact procedures

(1) All proposals for activities with potential to affect Deshkan Ziibiing lands, waters, air, health, and wellbeing must be submitted to the office of the Chief, at the earliest possible moment in the development of a project idea. Such proposed activities include projects directly impacting Deshkan Ziibiing lands, waters and air, as well as those concerning implementation of, or modifications to, regulations and statutes with potential to affect our lands, waters, air, health, and wellbeing. Upon receipt, proposals will be delegated to the proper Deshkan Ziibiing staff for initial processing.

(2) Submission of proposals describing government or third party projects is necessarily part of the government-to-government relationship conducted between Deshkan Ziibiing and appropriate federal, provincial and municipal authorities. Accordingly, all commercial and industrial proposals with potential to affect Deshkan Ziibiing lands, waters, air, health, and wellbeing must be submitted through the relevant government office. All inquiries and initial proposals should be sent via regular mail to:

Chief
Deshkan Ziibiing/Chippewas of the Thames First Nation
320 Chippewa Road
Muncey, Ontario N0L1Y0
Canada

Copy to:
Director Lands and
Environment
Deshkan Ziibiing/Chippewas of the Thames First Nation
77 Anishinaabeg Road
Muncey, Ontario NOL1Y0
Canada

(3) All inquiries and initial proposals should contain brief, plain language descriptions of projects, including as necessary:

a) copies of all project proponent communication with Crown departments regarding the delegation of consultation activities and procedures,

b) accurate contact information for senior, decision-capable, Crown staff members, as well as for senior level project proponents, when appropriate,

c) early disclosure of all potential project segmentation or staging scenarios,

d) precise indications of affected landscape boundaries,

e) estimated forms of all impacts and risks – including climate change impacts, and all

impacts on biodiversity, air quality, and watershed integrity,

d) explication of potential benefits to Deshkan Ziibiing,

e) preferred timeframes for all aspects of project implementation,

f) estimated time span for effects stemming from life of the project,

g) complete catalogs, with content descriptions, of all relevant studies, mappings, reports, memos, permit applications, motions, and other documents regarding the project proposal,

h) explanation of how the proposal embodies a partner relationship between Deshkan Ziibing and federal, provincial, and municipal governments,

i) up-to-date measures of corporate social responsibility, such as ISO26000-2010, or B Corp certification.

d. Deshkan Ziibiing processing of inquiries and proposals

1) Designated Deshkan Ziibiing staff will post through regular mail a first response to inquiries and initial proposals, within two weeks of their receipt. First responses will indicate the timeframe necessary for any subsequent Deshkan Ziibiing follow-up to the initial inquiry or proposal, and will include a reasonable target date for beginning subsequent communication.

2) Deshkan Ziibiing determines its participation in consultation on the basis of two variables. First, it assesses projects on a scale of a) *minimal* impact, b) *moderate* impact, and c) *extensive* impact. Examples of minimal impact projects include road repair and resurfacing, and replacement of existing structures. Examples of extensive impact projects include nuclear energy waste storage facilities, alternative energy developments, oil and gas pipelines or facilities, and landfills.

A. Minimal impact consultation

1. Information about a proposed project is received by Chief, and forwarded to the Director of Lands and Environment and the Consultation Coordinator,
2. The Consultation Coordinator screens the proposal, logs details, and scans the entire package into a database,
3. The Consultation Coordinator prepares a response, and forwards it to the appropriate party (government department or third party proponent). Typically, the response indicates that Deshkan Ziibing has no concerns, and requests continued updates about the proposal, should details change. Consultation service fees apply.

B. Moderate impact consultation

1. Information about a proposed project is received by Chief, and forwarded to the Director of Lands & Environment, and the Consultation Coordinator,
2. The Consultation Coordinator screens the proposal, logs details and scans entire package into database,
3. The Consultation Coordinator adds to the log of projects submitted monthly to the

Environment Committee. Time sensitive responses will be emailed to the Environment Committee, with recommendations and comments for quicker response. The Coordinator prepares a response, and posts it to the appropriate party.

Response 1: Deshkan Ziibiing requests consultation. The appropriate party will be invited to meet with the Lands & Environment department, and may be asked to provide capacity: requests for jobs, job training or a formal request for Capacity Funding Agreement.

Response 2: Deshkan Ziibiing requests additional information in order to determine the extent of concern.

Consultation service fees apply.

C. Extensive impact consultation

1. The process is similar to that of medium impact consultation,
2. With the completion of a necessary Capacity Funding Agreement, and where appropriate, such additional agreements as memoranda of understanding, or community benefit agreements.
3. As well as with the necessary addition of a Deshkan Ziibiing-determined community engagement process, and community ratification.

Second, in addition to the impact scale for required consultation, Deshkan Ziibiing distinguishes between two levels of the scope to consultation. *Landscape level* consultation concerns the evaluation of specific impacts on our lands, waters, air, health, and well-being. *Strategic level* consultation insures more broadly that Deshkan Ziibiing is fully engaged in all federal, provincial and municipal policy formation, planning, implementation, and evaluation, that may affect our traditional territory, immediate homelands, health, and well-being, both at present and in the future.

e. Deshkan Ziibiing-determined provision of required information

Deshkan Ziibiing expects governments and delegated third parties to provide all relevant information, as Deshkan Ziibiing Lands and Environment staff, or Chief and Council might determine is necessary, in order to complete Deshkan Ziibiing's careful evaluation of the impact of the project.

f. Government to government engagement

Although Deshkan Ziibiing may choose to participate in public reviews, studies, and assessments of projects mandated or offered by the Crown to stakeholders in the public sphere, Deshkan Ziibiing is committed to the proposition that it is *not* a stakeholder. The Crown's duty to consult and where necessary accommodate Deshkan Ziibiing requires a separate process on those occasions when we indicate the necessity of consultation. Such consultation, grounded in fiduciary obligations and government willingness to uphold the honour of the Crown, cannot be subsumed.

For those projects and proposals that have a direct impact on Deshkan Ziibiing, we expect that authorities will respect our role and input in providing any necessary terms of reference, or in determining the scope of any necessary review, and in recommending knowledgeable

individuals to serve on reviewing panels and coordinating committees.

Deshkan Ziibiing also expects that its longstanding relationship of alliance with the Crown means that government to government affairs at the minimum must be worked out together in joint dialogue. Accordingly, we expect that the Crown will determine together with us in order to weigh whether it might be appropriate in a given situation to delegate its consultation obligations to a third party.

g. Project-specific work plans

The extent of a project's impact may require us to produce a work plan detailing the steps necessary in order to successfully complete the consultation process. Such a work plan may be developed in conjunction with the relevant government department and the project proponent. Should a work plan need joint development, Deshkan Ziibiing will provide the other consultation parties with a suitable draft, generally within 30 days following our initial contact. Although specific projects may require additional components, in general, plans will include as necessary the following sorts of components:

1. Realistic timeframe,
2. Budget (either cumulative or phase-specific, depending upon the nature of the project),
3. Catalog of information required from each party,
4. List of experts for any necessary review of the project – including legal review, and to undertake any additional studies necessary for Deshkan Ziibiing's informed assessment of the project,
5. List of necessary research projects,
6. Appropriate settings for gathering input from elders,
7. List of proposed meetings between parties, with details of time, place, goals and attendees,
8. Internal consultation steps necessary to incorporate voices of Deshkan Ziibiing edbendaagzijig,
9. Work plan monitoring procedures,
10. Review and evaluation of information,
11. Community decision and notification letter to Crown and proponent,
12. Drafting of any relevant memoranda or agreements.

Work plans may need to be revised as consultation proceeds, and should be done in agreement with all parties. Should government departments and project proponents object to Deshkan Ziibiing's work plan requirements, and only in the aftermath of good faith efforts to reach an

agreement, the parties may turn to a neutral mediator in order to successfully complete an adequate work plan.

h. Elders, traditional knowledge, and confidentiality

As necessary, Deshkan Ziibiing will indicate the specific ways in which traditional knowledge should inform our assessment of a project proposal's fit within the parameters of the Deshkan Ziibiing rights and responsibilities laid out above. To that end, staff will develop provisions for insuring that elders play an appropriate role in assessing the project.

Given that much traditional knowledge refers to matters that are sensitive to members of families, or that might only be transmittable within appropriate relational contexts between individuals, we expect that government departments and project proponents will fully respect our judicious determinations of confidentiality, in regards to the gathering of information from elders and other recognized knowledge keepers.

i. Processes for Deshkan Ziibiing internal consultation

Deshkan Ziibiing's practice of governance reflects a long history of community-based decision making, one preceding the development of democratic governments by centuries. Depending upon the matter for consultation, government departments and project proponents will need to embrace our approach to internal consultation, and be willing to work with the processes necessary for Deshkan Ziibiing edbendaagzijig to determine their level of trust and support for the project.

j. Conditions for providing consent

Decisions regarding a project may be achieved in two ways. Those projects seen to have little impact on Deshkan Ziibiing lands, air, waters, health and wellbeing may be evaluated completely through the efforts of administrative staff, select committees of council, or of council and chief.

Those projects with significant potential to impact Deshkan Ziibiing lands, air, waters, health and wellbeing, will require the scrutiny of the community as whole. Our traditions of governance charge our leaders with gathering and articulating the voices of the community as a whole. Thus, projects raising significant concerns for Deshkan Ziibiing edbendaagzijig will need to be accepted by the community in order for Chief and Council to speak in favour of them.

k. Ongoing needs for consultation

Deshkan Ziibiing expects that consultation on specific matters will likely vary in terms of its duration. Consultation partners may not need to continue discussion past a particular point in the life of a project. However, we expect to be able to determine when we need to continue consultation throughout the life of a project, or even afterwards – for instance, if decommissioning or cumulative effects raise continuing or additional concerns regarding our lands, air, waters, health and wellbeing.

Government or proponent changes to a project, such as its timeline, design, or implementation,

are not unilateral matters. We expect that we will continue the consultation relationship through such reconfigurations.

As well, consultation may need to continue in conjunction with the development of any co-management procedures.

8. Capacity requirements:

Project proponents may see their specific enterprises as unique and urgent efforts. For Deshkan Ziibiing, however, the reality is that our administrative offices receive many proposals, notifications, overviews, and pressing correspondence, on a daily basis. The office of Treaty, Lands and Environment is quite small, with staff workloads consistently focused on a variety of pressing tasks. Unlike other departments of Deshkan Ziibiing governance, Treaty, Lands and Environment's work is self-funded. Consequently, Deshkan Ziibiing requires a range of capacity funding in order to ensure that proposals are adequately, efficiently, and fairly considered within the consultation process.

a. Consultation Service Fees

A complete breakdown of consultation service fees for the varying levels of project impact is attached (refer to Appendix D).

The extent of any ongoing processing fees will depend upon the nature of the investment of time and staff necessary for Deshkan Ziibiing to reach an informed and thorough assessment of the project's implications for our lands, waters, air, health, and wellbeing. We would expect to determine these fees, when significant, in conjunction with government administrators and project proponents. We would also expect that such determination would focus on the matter of insuring Deshkan Ziibiing's ability to fully engage in the consultation matter at hand.

b. Deshkan Ziibiing's participation in research

Depending upon the nature of the project, Deshkan Ziibiing may find that its ability to make a full and informed decision about the proposed project's fit within the framework of principles outlined above requires the conduct of additional research. To the extent that proponents and government departments directly engage in research related to Deshkan Ziibiing, we expect that we will be involved in determining the purpose and scope of the research, the participants in the research, and their roles, and the extent to which the research will involve the work of Deshkan Ziibiing community members, and/or staff. Study methods may include but are not limited to:

- Agricultural Assessment
- Air Quality Assessment
- Cultural Heritage Assessment
- Archeology Assessment
- Ecology Assessment
- Groundwater/Surface Water Assessment
- Land Use Planning Forecast Assessment
- Noise/Vibration Assessment
- Social Assessment
- Traffic Assessment

- Visual/Landscape Assessment

We expect that any resulting staffing needs will be appropriately met by agreement with the Crown and the proponent.

c. Deshkan Ziibiing-initiated research

In addition to research organized in service of the proponent's project, it may also be necessary for Deshkan Ziibiing to initiate its own research projects in order to reach a successful determination about the project. Examples of such research needs include questions about the cumulative effects of a project; or assessments of cultural and archeological, biodiversity, endangered species habitat, or water quality impacts; or traditional land use and occupancy studies where the project is not suited to assessing in the light of existing studies; or competent and thorough assessments of the extent of community support, when a project appears to be especially contentious. We expect that the capacity to engage in such research will be supported by agreement with the Crown and the proponent.

d. Travel and/or hosting expenses

Depending upon the project, it may be necessary for staff, elders, or others, to travel to a project site, or to host meetings or gatherings with those who have historical knowledge and family memories significant to collect, in order to increase Deshkan Ziibiing's ability to provide a thorough assessment of a project. We expect that governments and proponents will bear these costs.

e. Honoraria for elders

Our long-standing practice is to acknowledge our dependence upon the wisdom and knowledge of our elders, a dependence that extends to those outside our community who also wish to draw upon their wisdom and knowledge. Such acknowledgment is appropriately made in terms of money and gifts. We expect governments and proponents to provide these costs, which can be determined in conjunction with staff.

f. Distribution of print materials

Depending upon the nature of the project, staff may need to circulate significant amounts of print materials to Deshkan Ziibiing edbendaagzijig. We expect governments and proponents to provide these costs, as well.

9. Accommodation, mitigation, and compensation plans

Projects with potential to affect our lands, waters, health, and wellbeing cannot proceed without our determining in advance with governments and proponents exactly how they intend to mitigate any impacts, accommodate the depth and extent of our concerns, and compensate any envisioned losses or harms to our lands, waters, air, health and wellbeing. In general, the protection of our inherent and treaty rights, and the respect for our obligations to preserve the lands and waters of Deshkan Ziibiing, are matters to resolve prior to any discussion of potential benefits that might be created through implementation of the project.

The following are non-exhaustive examples of provisions and separate instruments to work out, as necessary, in the process of consultation, in order for Deshkan Ziibiing edbendaagzijig to

embrace the legitimacy of a project:

1. conclusion of any resulting memoranda of understanding, terms of reference, or impact benefit agreements
2. formation of equity and partnership agreements
3. configuration of rents and royalties
4. determination of the extent and composition of intellectual property
5. securing of training, employment, and education opportunities for Deshkan Ziibiing edbendaagzijig within the lifespan of the project
6. development of any necessary co-management structure
7. evidence of serious incorporation of Deshkan Ziibiing concerns into the drafting and subsequent ratification or authorization of all legislation and regulations affecting our lands, air, waters, health and wellbeing

Deshkan Ziibiing expects that the Crown in fulfillment of its fiduciary duty and its diligent regard to uphold the honour of Crown, will assist as, and only as, we may request it to, in undertaking all aspects of negotiation or discussion regarding any agreement that we might reach with a project proponent.

In addition, we expect that all agreements regarding matters of accommodation, mitigation, and compensation are in place before work on a project begins, or if such work actually began prior to our learning of the project from the relevant government department, before the work continues any further.

10. Dispute resolution mechanisms

In the event that governments and third parties are not content with Deshkan Ziibiing's determinations regarding the requirements necessary for our assessing a project, or regarding our conclusion that a particular project does not fit within the framework of rights, responsibilities, and principles elaborated above, we acknowledge that all parties reserve the right to engage in various means of dispute resolution.

a. Deshkan Ziibiing expects that its expressed and timely intention to pursue dispute resolution will be sufficient for the other parties to place a hold on project development until the dispute is resolved.

b. Given our historic commitment to resolving disagreements without "warm discussion", the first step in resolving disputes must be honest, good faith discussion in which the Deshkan Ziibiing and the Crown acknowledge that they each have equal decision-making power with the other.

c. Should agreement between representatives of the parties be unreachable, continuing discussion should take place between such senior-level

decision-makers as Chief, Ministers, deputy ministers, and executives.

d. Should these discussions fail to yield agreement, the parties may call in the services of a neutral mediator, whose costs will be borne by agreement with the Crown and the proponent.

e. If the dispute between Deshkan Ziibiing and the other parties is a matter of scientific, technical, historical, archeological, or other such knowledge, the parties may rely upon an assessment from a panel of experts, chosen in equal number by the parties, and whose expenses will be provided by agreement with the Crown and the proponent.

f. Termination of any agreements or processes prior to completion of consultation should be subject to what the Supreme Court has referred to as “the duty of good faith and honest performance” (Bhasin v. Hrynew, 2014).

g. Deshkan Ziibiing reserves all right to pursue such adjudication as may seem to it necessary, whether within Canada’s courts, or before international bodies, such as the Inter-American Court of Human Rights.

11. Appendices

A. COTTFN Consultation Map

B. Southwestern Ontario Treaty Map

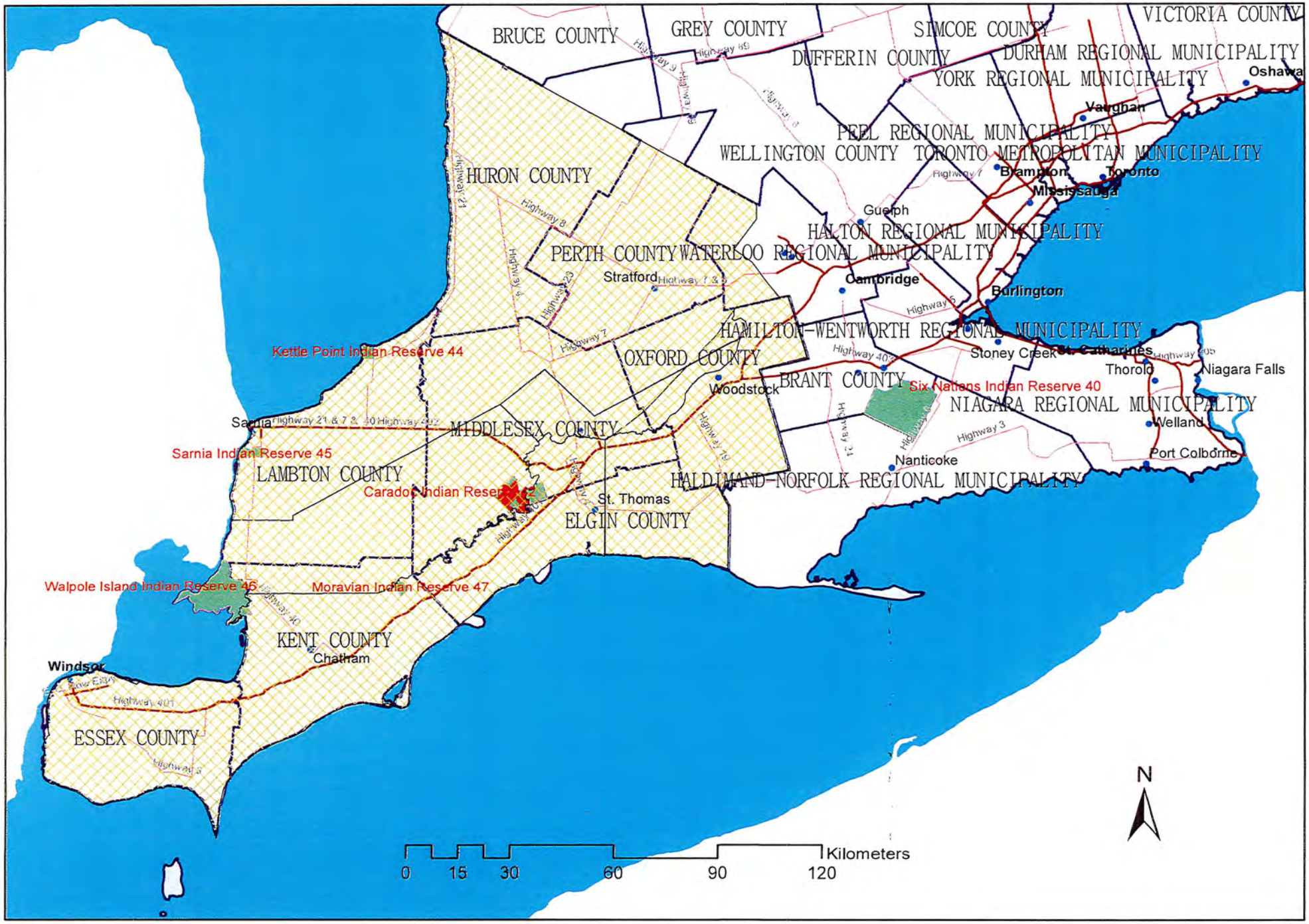
C. Consultation Flow Chart

D. Consultation Service Fees

This protocol is subject to revision and further development, determinable by Chief and Council, and reflecting as needed the consent of Deshkan Ziibiing edbendaagzijig.

For use with permission of Deshkan Ziibiing/Chippewas of the Thames.

FINAL-Big Bear Creek ATR Land Selection Area



SOUTHERN FIRST NATION TREATY TERRITORY

Legend

- TREATY #53, August 18, 1943
- Treaty #7, September 7, 1796
- Treaty #6, September 7, 1796
- TREATY #29, July 10, 1827
- Treaty #25, July 8, 1822
- Treaty #2, May 19, 1790
- **Treaty & Traditional Territory**

GODERICH

KITCHENER

LONDON

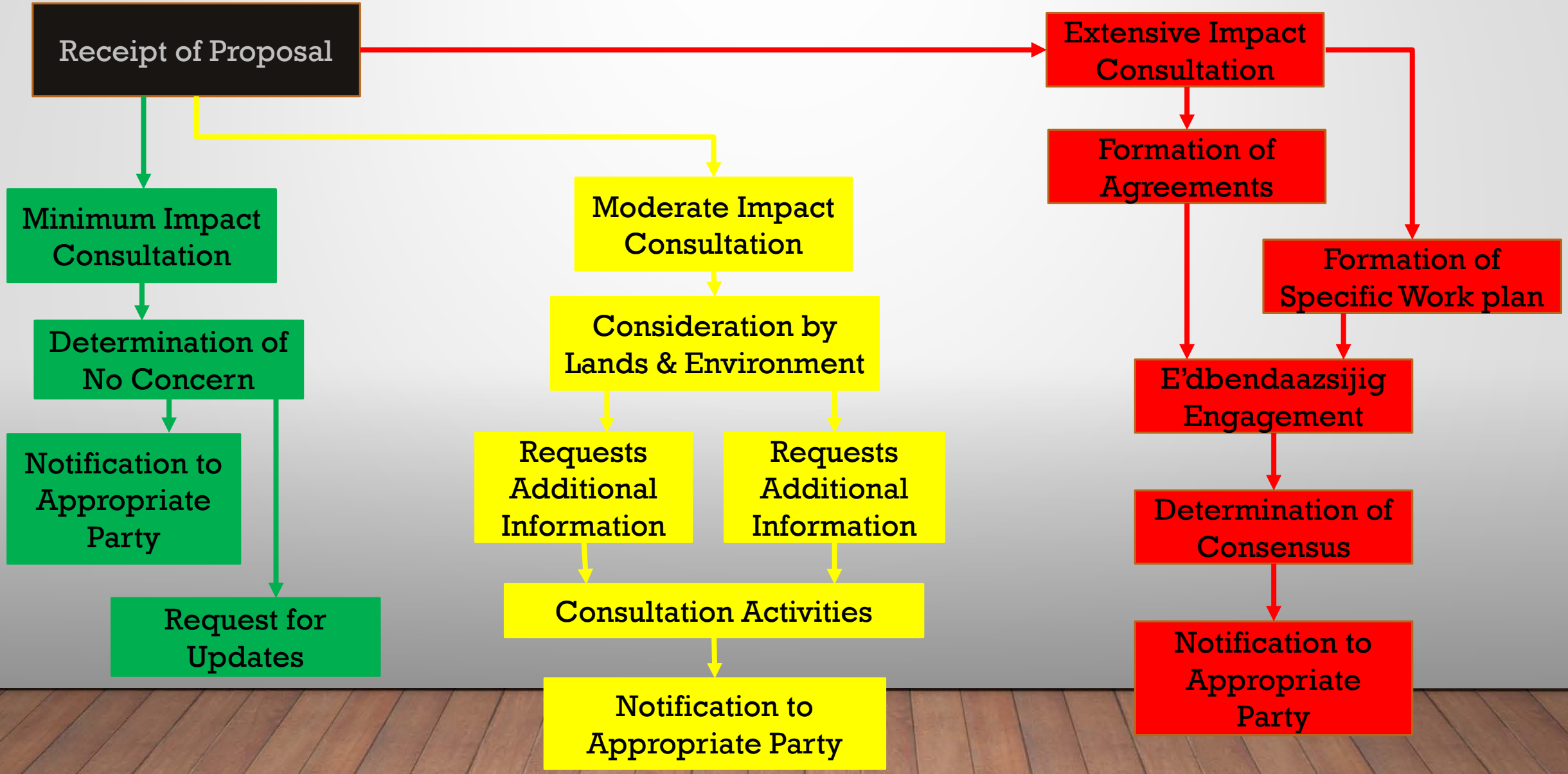
SARNIA

CHATHAM

WINDSOR

0 5 10 20 30 40 Kilometers

Deshkan Ziibiing Consultation Flow Chart



TREATY, LANDS & ENVIRONMENT

Capacity Delivery Overview

CONSULTATION AND ACCOMMODATION

Chippewas of the Thames First Nation (COTTFN) has developed a general framework for the First Nation in all aspects of its treaty, lands and environmental issues.[i]

Under this framework, the First Nation is able to provide a response to all incoming correspondence from project proponents under the *Duty to Consult* and Engagement. COTTFN uses an internal process for ranking and identifying both risks and opportunities when project information is received; and incorporates both environmental and *Haida*-spectrum analysis for the First Nation.

Consultation Service Fees, EMS-CA-Rc-03

Cost Recovery

As part of Chippewas of the Thames First Nation Administration the Treaties, Lands & Environment department is responsible for carrying out the environmental and land-related priorities of the nation. Our responsibilities extend to the Traditional Territory of our ancestors; the lands that were agreed to be shared through the Treaties between 1790 and 1822; and the lands that our ancestors chose to be reserved for us and future generations.

Our department is primarily funded through own-source revenues, reflecting a prioritization of lands and the environment based not only on our inherent responsibilities, but also influenced by a vision for the future. This vision utilizes both Traditional Knowledge and other environmental sciences.

Relatively recent developments in Canadian Law and policy, specifically the Duty to Consult, has introduced a dramatic increase in activity for our department. When we engage with a project proponent, it is important that the time and effort involved in receiving correspondence and identifying appropriate response levels is not to be underestimated.

COTTFN has developed three levels of response. These are based on the impacts the project may have on our Aboriginal and Treaty Rights. These levels are also based on factors that the COTTFN has identified in accordance with the responsibilities given to us by the Creator, and our responsibilities to future generations.

The following fee schedule reflects estimated compensation for time and resources that our office requires to actively engage with proponents for the Duty to Consult. These estimates do not include additional costs, such as Honorarium for Elders, Legal Fees, Hosting Fees, fees associated with study participation, i.e. Archaeology, Natural Heritage, Ecology, etc. (this is not an exhaustive list)

When such costs arise, they will be communicated prior to billing.

Colour Coded Ranking of Projects

Definition	Colour
Level 1: Minimal Impact	Costs Associated - Standard
Level 2: Moderate Impact	Costs Associated - Standard
Level 3: Extensive Impact	Costs Associated - Standard

LEVEL 1-ENGAGEMENT

ENGAGEMENT, CONSULTATION AND ACCOMMODATION					
Level 1					
Project					
Minimal					
Director	**Activity**	**Daily**	**Hourly**	**Units Estimated**	**Projected Cost**
	Review, high level response and issuing correspondence; and providing direction to staff on the First Nation response based on broad First Nation concerns.	$ 550.00			NA
Senior Environment Officer	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Environmental review for impacts to traditional territory and based on First Nation concerns, such as, but not limited to: noise, air, waste, contaminants, discharges, greenhouse gases, permitting required, cumulative effects. Development of Recommendations and support to the COTTFN Environment Committee.		$ 85.00	4	$ 340.00
Consultation Coordinator	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Receipt of Information, Risk Identification, Internal Notification of Projects, Entry into Database, Issuing Correspondence, Maintenance of filing system, Library Services. Report production for the COTTFN Environment Committee and administrative support.		$ 85.00	4	$ 340.00
Treaty Research	Activity	Daily	Hourly	Units Estimated	
	Identification of project in relation to traditional territory, treaty areas, unceded areas, historical occupation	$ 450.00			NA
COTTFN Environmental Committee	Activity	Daily	Hourly	Units Estimated	
	Reviews projects that have been submitted by the Treaty, Lands and Environment Department and approves recommendations by staff; and/or provides further direction on the project.	$ 250.00		1	$ 250.00
Filing Fee	fee charged to accept a document for processing and filing retention				$ 125.00
TRAVEL	For proponents' meetings, workshops, open houses, public meetings.			**0.525 / km**	TBD
				SUB-TOTAL	$ 1055.00
ADMINISTRATION CHARGE 15%	Central Mail, Financial Services: payroll, reimbursement procedures, accounts payable and receivable, production of financial statements, year-end audit. Photocopying, phone and internet service.			**15%**	$ 158.25
				GRAND TOTAL:	$ 1,213.25

***These prices are effective as of November 2018*

** Prices subject to change, without notice

LEVEL 2-CONSULTATION

ENGAGEMENT, CONSULTATION AND ACCOMMODATION					
Level 2					
Project					
Moderate					
Director	**Activity**	**Daily**	**Hourly**	**Units Estimated**	**Projected Cost**
	Review, high level response and issuing correspondence; and providing direction to staff on the First Nation response based on broad first Nation concerns.	$ 550.00		1	$ 550.00
Senior Environment Officer	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Environmental review for impacts to traditional territory and based on First Nation concerns, such as, but not limited to: noise, air, waste, contaminants, discharges, greenhouse gases, permitting required, cumulative effects. Development of Recommendations and support to the COTTFN Environment Committee.		$ 85.00	6	$ 510.00
Consultation Coordinator	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Receipt of Information, Risk Identification, Internal Notification of Projects, Entry into Database, Issuing Correspondence, Maintenance of filing system, Library Services. Report production for the COTTFN Environment Committee and administrative support.		$ 85.00	8	$ 680.00
Events & Promotions Coordinator	Activity	Daily	Hourly	Units Estimated	
	Development of internal community consultation communication website and social media update, and event planning		$ 65.00	5	$ 325.00
Treaty Research	Activity	Daily	Hourly	Units Estimated	
	Identification of project in relation to traditional territory, treaty areas, unceded areas, historical occupation.	$ 450.00		1	$ 450.00
COTTFN Environmental Committee	Activity	Daily	Hourly	Units Estimated	
	Reviews projects that have been submitted by the Treaty, Lands and Environment Department and approves recommendations by staff; and/or provides further direction on the project.	$ 250.00		2	$ 500.00
COTTFN Band Council	Activity	Daily	Hourly	Units Estimated	Projected Cost
	Reviews projects, deliberates, and provides overall direction to Treaty, Lands & Environment	$ 350.00		2	$ 700.00
COTTFN Development Corporation	Activity	Daily	Hourly	Units Estimated	
	The Development Corporation will be responsible for conducting the due diligence required to assess project feasibility, risk and benefit to the community. The information gathered will be presented to the Corporation's Board of Directors to determine the level of contribution and any future involvement based on economic viability and community consensus.	$ 300.00		1	$ 300.00
Filing Fee	Fee charged to accept a document for processing and filing retention				$ 125.00
TRAVEL	For proponents' meetings, workshops, open houses, public meetings.			**0.525 / km**	TBD
				SUB-TOTAL	$ 4,140.00
ADMINISTRATION CHARGE 15%	Central Mail, Financial Services: payroll, reimbursement procedures, accounts payable and receivable, production of financial statements, year- end audit. Photocopying, phone and internet service.			**15%**	$ 621.00
				GRAND TOTAL:	$ 4,761.00

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LEVEL 3- HIGH RIGHTS/HIGH IMPACTS

ENGAGEMENT, CONSULTATION AND ACCOMMODATION					
Level 3					
Negotiations and/or					
Extensive Impact					
Director	**Activity**	**Daily**	**Hourly**	**Units Estimated**	**Projected Cost**
	High level response and issuing correspondence; and providing direction to staff on the First Nation response based on broad first Nation concerns.	$ 550.00		2	$1,100.00
Senior Environment Officer	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Environmental review for impacts to traditional territory and based on First Nation concerns, such as, but not limited to: noise, air, waste, contaminants, discharges, greenhouse gases, permitting required, cumulative effects. Development of Recommendations and support to the COTTFN Environment Committee.		$ 85.00	6	$ 510.00
Consultation Coordinator	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Receipt of Information, Risk Identification, Internal Notification of Projects, Entry into Database, Issuing Correspondence, Maintenance of filing system, Library Services. Report production for the COTTFN Environment Committee and administrative support.		$ 85.00	10	$ 850.00
Events & Promotions Coordinator	**Activity**	**Daily**	**Hourly**	**Units Estimated**	
	Development of internal community consultation communication website and social media update, and event planning		$ 65.00	5	$ 325.00
Treaty Research	Activity	Daily	Hourly	Units Estimated	
	Identification of project in relation to traditional territory, treaty areas, unceded areas, historical occupation	$ 450.00		1	$ 450.00
COTTFN Environmental Committee	Activity	Daily	Hourly	Units Estimated	
	Reviews projects that have been submitted by the Treaty, Lands and Environment Department and approves recommendations by staff; and/or provides further direction on the project.	$ 250.00		3	$ 750.00
COTTFN Band Council	Activity	Daily	Hourly	Units Estimated	Projected Cost
	Reviews projects, deliberates, and provides overall direction to Treaty, Lands & Environment	$ 350.00		2	$ 700.00
COTTFN Development Corporation	Activity	Daily	Hourly	Units Estimated	
	The Development Corporation will be responsible for conducting the due diligence required to assess project feasibility, risk and benefit to the community. The information gathered will be presented to the Corporation's Board of Directors to determine the level of contribution and any future involvement based on economic viability and community consensus.	$ 300.00		2	$ 600.00
Filing Fee	Fee charged to accept a document for processing and filing retention				$ 125.00
TRAVEL	For proponents' meetings, workshops, open houses, public meetings.			0.525 / km	TBD
				SUB-TOTAL	$ 5, 410.00
ADMINISTRATION CHARGE	Central Mail, Financial Services: payroll, reimbursement procedures, accounts payable and receivable, production of financial statements, year-end audit. Photocopying, phone and internet service.			**15%**	$ 811.50
				GRAND TOTAL:	$ 6, 221.50

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** Prices subject to change, without notice

Micks, Sarah

From: Fallon Burch <fburch@cottfn.com>
Sent: Tuesday, October 4, 2022 10:21 AM
To: Lang, Sarah
Cc: Rochelle Smith; jmills@cottfn.co; Tim Del Greco; Erickson, Kane
Subject: RE: Decision regarding consultation: 165001284 - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Attachments: INV-0387-Heritage Line Extension-Kingsville-Stantec-REVISED.pdf

Good morning Sarah,

As per your request, please find attached the revised invoice. We look forward to your follow regarding the archaeology assessment. If you have any questions, please feel free to contact me.

Thank you,

Fallon

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
Email: fburch@cottfn.com
519-289-5555 Ex: 251
320 Chippewa Road, Muncey, Ontario

Visit us online at cottfn.com

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From: Lang, Sarah <Sarah.Lang@stantec.com>
Sent: September 23, 2022 8:59 AM
To: Fallon Burch <fburch@cottfn.com>
Cc: Rochelle Smith <rsmith@cottfn.com>; jmills@cottfn.co; Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>
Subject: RE: Decision regarding consultation: 165001284 - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Hello Fallon,

Thank you for providing the Chippewas of the Thames First Nation decision regarding consultation for the Town of Kingsville, Heritage Road to Road 2 West MCEA study. The Stage 1 Archaeological Assessment report is currently being compiled, and we will provide it to you for review prior to filing with the Ministry of Tourism, Culture and Sport. If Stage 2 Archaeological Assessment work is required, we will be happy to coordinate participation from First Nation Field Liaisons.

For the attached Invoice #0387, I'm wondering if it would please be possible for you to address this invoice to the Town of Kingsville? Please see the preferred billing details below:

Town of Kingsville
Attn: Tim Del Greco
2021 Division Road North
Kingsville, ON N9Y 2Y9
519-733-2305
tdelgreco@kingsville.ca

Please let me know if you have any questions or concerns.

Thank you!

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

Stantec





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From: Chippewas of the Thames First Nation <no-reply-cottfn@knowledgekeeper.ca>
Sent: Friday, September 9, 2022 10:41 AM
To: fburch@cottfn.com; jmills@cottfn.com; rsmith@cottfn.com; Lang, Sarah <Sarah.Lang@stantec.com>
Subject: Decision regarding consultation: 165001284 - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Please see attached PDF.

From:	Mohsin, Mobina
To:	Kipping, Darren
Cc:	Erickson, Kane; Micks, Sarah
Subject:	RE: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2
Date:	Monday, June 12, 2023 6:52:02 PM
Attachments:	image001.png image002.png

Hi Darren,

Please let COTTFN know that their email was stuck in your junk folder, and ask them if they are willing to make the same edits as we recently agreed on for the MTO project. If so, perhaps they can send us the updated agreement or we can update it on our end. I can then request BL approval. Thanks.

Regards,

Mobina Mohsin B.A., J.D.
Senior Counsel – Infrastructure

~~Direct: 519 585-7371~~
Mobile: 647 299-4003
Mobina.Mohsin@stantec.com

Stantec
100-300 Hagey Boulevard
Waterloo ON N2L 0A4

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From: Kipping, Darren <Darren.Kipping@stantec.com>
Sent: Monday, June 12, 2023 2:46 PM
To: Mohsin, Mobina <Mobina.Mohsin@stantec.com>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Micks, Sarah <Sarah.Micks@stantec.com>
Subject: FW: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Hey Mobina,

Somehow this was in my junk folder since April. Its from Caldwell regarding our STage 2 for West Side Collector Road for the Town of Kingsville.

It looks like they have an issue with some of the language we recently cleared up with them for Talbotville.

Maybe we can update and get back to them.

Darren Kipping MA, RPA
Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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From: Fallon Burch <fburch@cottfn.com>
Sent: Wednesday, April 26, 2023 11:48 AM
To: Kipping, Darren <Darren.Kipping@stantec.com>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Carolyn Albert <calbert@cottfn.com>; Jennifer Mills <jmills@cottfn.com>
Subject: RE: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Good morning Darren,

Attached is the agreement, we have left the track changes on for you to review.

I would like to clarify ***Terms-S. 2.1***- if this were to occur, we would require fieldwork updates and (as usual) the draft report. If you have any questions, please feel free to contact me.

NOTE:

I will away from the office from April 27th – May 5th, please feel free to contact my colleague Jennifer Mills during this time.

COTTFN

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
Email: fburch@cottfn.com
519-289-5555 Ex: 251
320 Chippewa Road, Muncey, Ontario

Visit us online at cottfn.com

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From: Kipping, Darren <Darren.Kipping@stantec.com>
Sent: Wednesday, December 7, 2022 11:25 AM
To: Fallon Burch <fburch@cottfn.com>; Carolyn Albert <calbert@cottfn.com>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>
Subject: RE: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Hey Fallon,

the agreement has been reviewed by Stantec corporate. We have left the track changes on for your review.

If you have any additional edits or questions please let me know, and if you are okay with the changes we can get the agreement finalized.

Regards,

Darren Kipping MA
Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

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600-171 Queens Avenue
London ON N6A 5J7

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From: Fallon Burch <fburch@cottfn.com>
Sent: Monday, November 21, 2022 2:47 PM
To: Kipping, Darren <Darren.Kipping@stantec.com>; Carolyn Albert <calbert@cottfn.com>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Henderson, Sarah <Sarah.Henderson@stantec.com>; Tim Del Greco <tdelgreco@kingsville.ca>
Subject: RE: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Good afternoon Darren,

Thank you for the invitation to participate. I have quickly reviewed the report and this time do not have any concerns.

Please find attached a copy of the agreement. If you have any questions, please feel free to contact me.

Thank you,

Fallon

Fallon Burch
Consultations Coordinator
Chippewas of the Thames First Nation
320 Chippewa Road, Muncey, ON N0L 1Y0
519-289-2662 ext. 213

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From: Kipping, Darren <Darren.Kipping@stantec.com>

Sent: November 18, 2022 2:11 PM
To: Fallon Burch <fburch@cottfn.com>; Carolyn Albert <calbert@cottfn.com>
Cc: Erickson, Kane <Kane.Erickson@stantec.com>; Henderson, Sarah <Sarah.Henderson@stantec.com>; Tim Del Greco <tdelgreco@kingsville.ca>
Subject: West Side Collector Road - Kingsville, ON - Stage 1 and Stage 2

Good afternoon Fallon,

Further to previous correspondence sent by Stantec on behalf of the Town of Kingsville (the Town), Stantec is completing an archaeological assessment in in support of the Town's proposed West Side Collector Road expansion as part of a Municipal Class Environmental Assessment (EA). The Class EA is being completed to support a proposed collector road, i.e., an extension of Heritage Road between County Road 20 and Municipal Road 2 in the town of Kingsville to provide service to future local roads as part of future development.

Please see a draft Stage 1 archaeological assessment of the study area for your review.

Stantec will also be completing a Stage 2 archaeological assessment of the study area. Stantec and the Town would like to invite a representative from Chippewas of the Thames First Nation to join the archaeological crew during the archaeological assessment. A date for the Stage 2 assessment has yet to be determined, but we are aiming to complete the work this fall (if the weather cooperates), pending agricultural field ploughing, utility locates, and appropriate field, ground, and weather conditions. Once a date has been confirmed, I will provide additional meeting details and directions. Overall, we anticipate the field work will require approximately 3 days to complete.

Please let me know if you have any comments regarding the Stage 1 report. If you are interested in participating in the Stage 2 fieldwork, please respond to the undersigned to get an agreement in place.

Looking forward to hearing from you and have a great weekend,

Darren Kipping MA
Project Archaeologist

Direct: 519 933-1827
darren.kipping@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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Micks, Sarah

From: Micks, Sarah
Sent: Friday, July 7, 2023 12:33 PM
To: jfrench@cottfn.com; fburch@cottfn.com
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: Notice of PIC 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA.pdf

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

Stantec

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Micks, Sarah

From: Fallon Burch <fburch@cottfn.com>
Sent: Friday, July 7, 2023 1:20 PM
To: Micks, Sarah; Jacqueline French
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: RE: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Attachments: NationsConnect User Guide.pdf

The Chippewas of the Thames First Nation has transitioned to using NationsConnect to receive consultation and engagement requests. **Notifications or requests sent over email, mail or fax are not considered submitted and will not be reviewed.**

To register for NationsConnect, and submit your request, please visit NationsConnect.ca.

Along with the project information, a spatial file in .kml, .kmz, or .zip shapefile formats will be required to submit your request. Once your project has been submitted, you can attach additional files or send updated communication through the Conversations feature on NationsConnect.

If you have any technical questions about NationsConnect, please reach out to support@kwusen.ca.

Regards,

COTTFN

Fallon Burch
Consultation Coordinator
Chippewas of the Thames First Nation
Email: fburch@cottfn.com
519-289-5555 Ex: 251
320 Chippewa Road, Muncey, Ontario

Visit us online at cottfn.com

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From: Micks, Sarah <Sarah.Micks@stantec.com>
Sent: Friday, July 7, 2023 12:33 PM
To: Jacqueline French <jfrench@cottfn.com>; Fallon Burch <fburch@cottfn.com>
Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Hello,

Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.

The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.

Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

Stantec

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Caution: This email originated from outside of Stantec. Please take extra precaution.

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A.5 - Public Engagement

Heritage Road to Road 2 West

Municipal Class Environmental Assessment

Town of Kingsville

Public Information Centre #1

Tuesday, September 20, 2022 from 5:00pm to 7:00pm

Grovedale Arts & Culture Centre
103 Park Street, Kingsville, ON

Welcome!

The goals of this Public Information Centre (PIC) are to:

- Introduce the project and why it is being undertaken
- Provide an overview of the process that this study will follow for the project
- Provide a summary of the problems and opportunities to address
- Present existing conditions within the study area
- Present the evaluation of alternative solutions
- Answer any questions you may have and provide an opportunity to get involved in the project

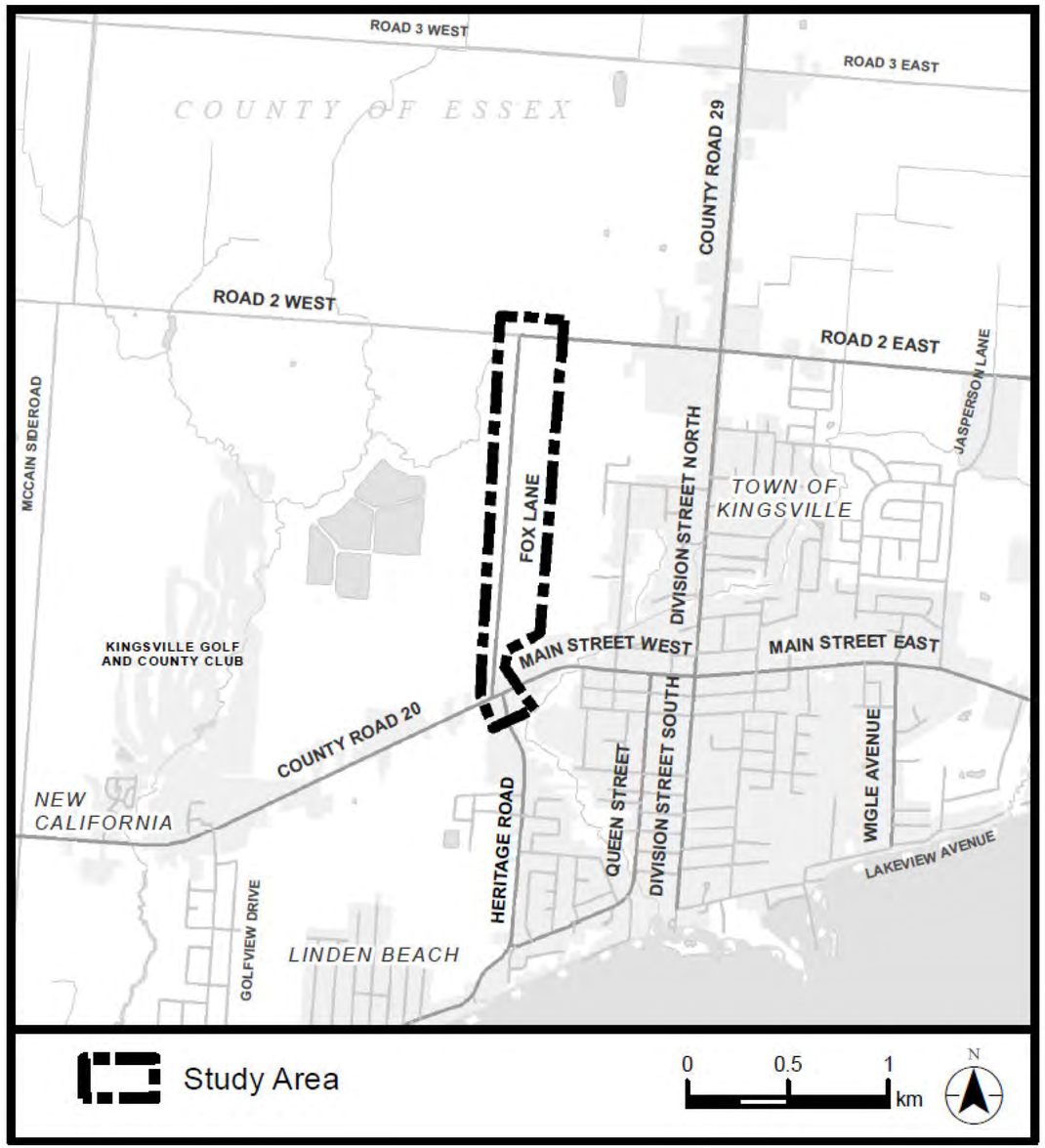
Comments received during this study will be used to help identify the recommended approach for current and future improvements within The Town of Kingsville.

Project Overview

The Town of Kingsville is undertaking a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. The study will involve:

- Extension of Heritage Road to Road 2 West
- Two new local roads connecting to the new residential subdivision
- Active transportation infrastructure
- Intersection improvements at Main Street West and Heritage Road

These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.

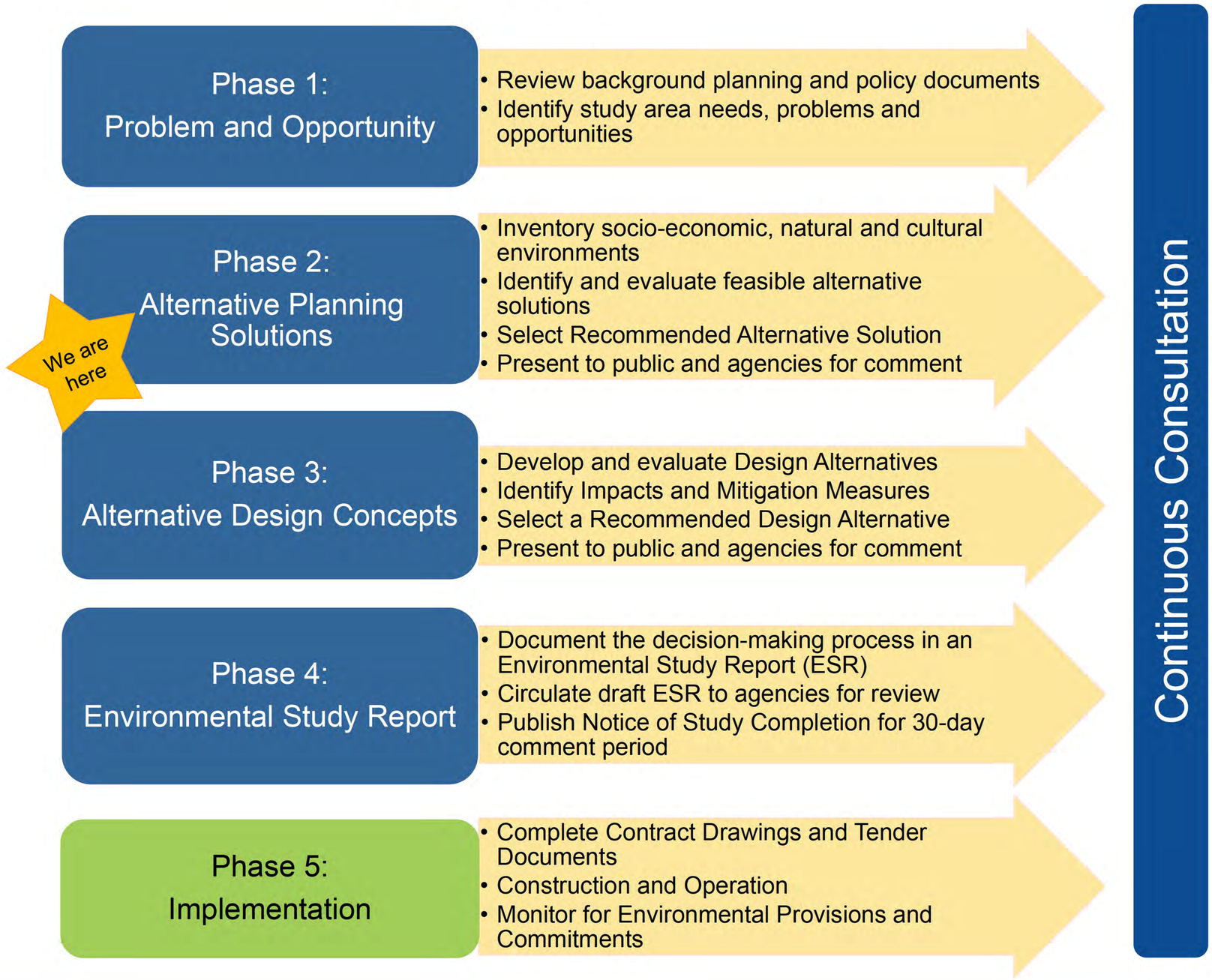


Municipal Class EA Process

The Municipal Class EA process is legislated through the Ontario Environmental Assessment Act.

The process provides a decision-making framework that enables the requirements of the EA Act to be met for municipal infrastructure projects.

This EA Study is being conducted as a Schedule 'C' project and will cover Phase 1 to Phase 4 of the EA process.



Planning and Policy Context

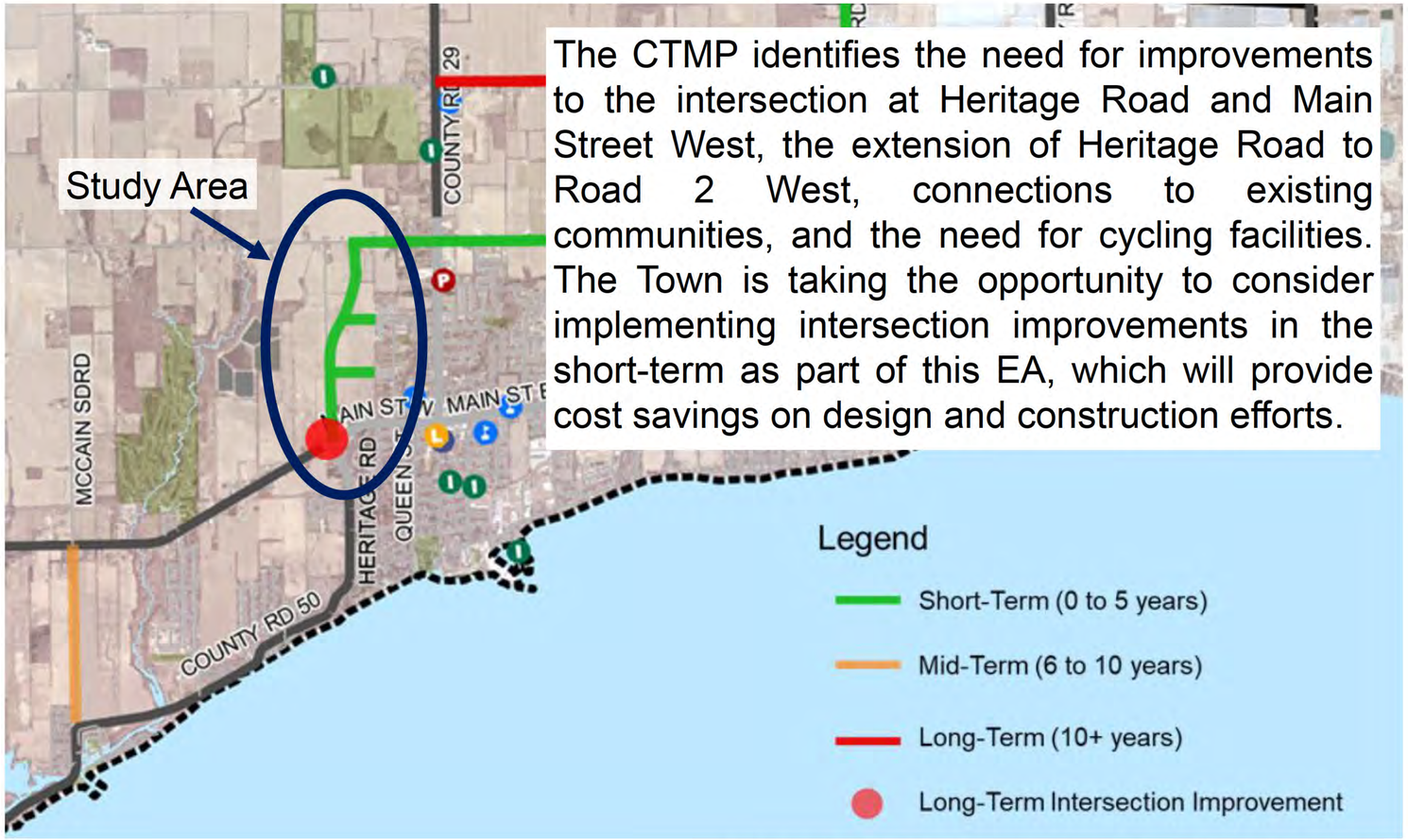
Town of Kingsville Official Plan

The Town's Official Plan (2011) guides future development to the year 2026 and anticipates continued growth within the community. The Plan designates the land within the study area as Residential and Agricultural.

Comprehensive Transportation Master Plan

The Town is nearing the completion of a Comprehensive Transportation Master Plan (CTMP) to:

- guide the future of transportation across the community
- identify transportation improvements within the Town
- create a safe, efficient, and sustainable multi-modal transportation network



The CTMP identifies the need for improvements to the intersection at Heritage Road and Main Street West, the extension of Heritage Road to Road 2 West, connections to existing communities, and the need for cycling facilities. The Town is taking the opportunity to consider implementing intersection improvements in the short-term as part of this EA, which will provide cost savings on design and construction efforts.

Source: CTMP – Figure 35 Road Network Improvement Phasing

Problem & Opportunity

The Town of Kingsville is experiencing growth within the community. The growth has created an increase in active transportation, vehicular and truck traffic on the existing transportation network.

The Town of Kingsville is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. To accommodate future growth and development within the community, improvements are required: the extension of Heritage Road to Road 2 West; two new local roads; and intersection improvements.





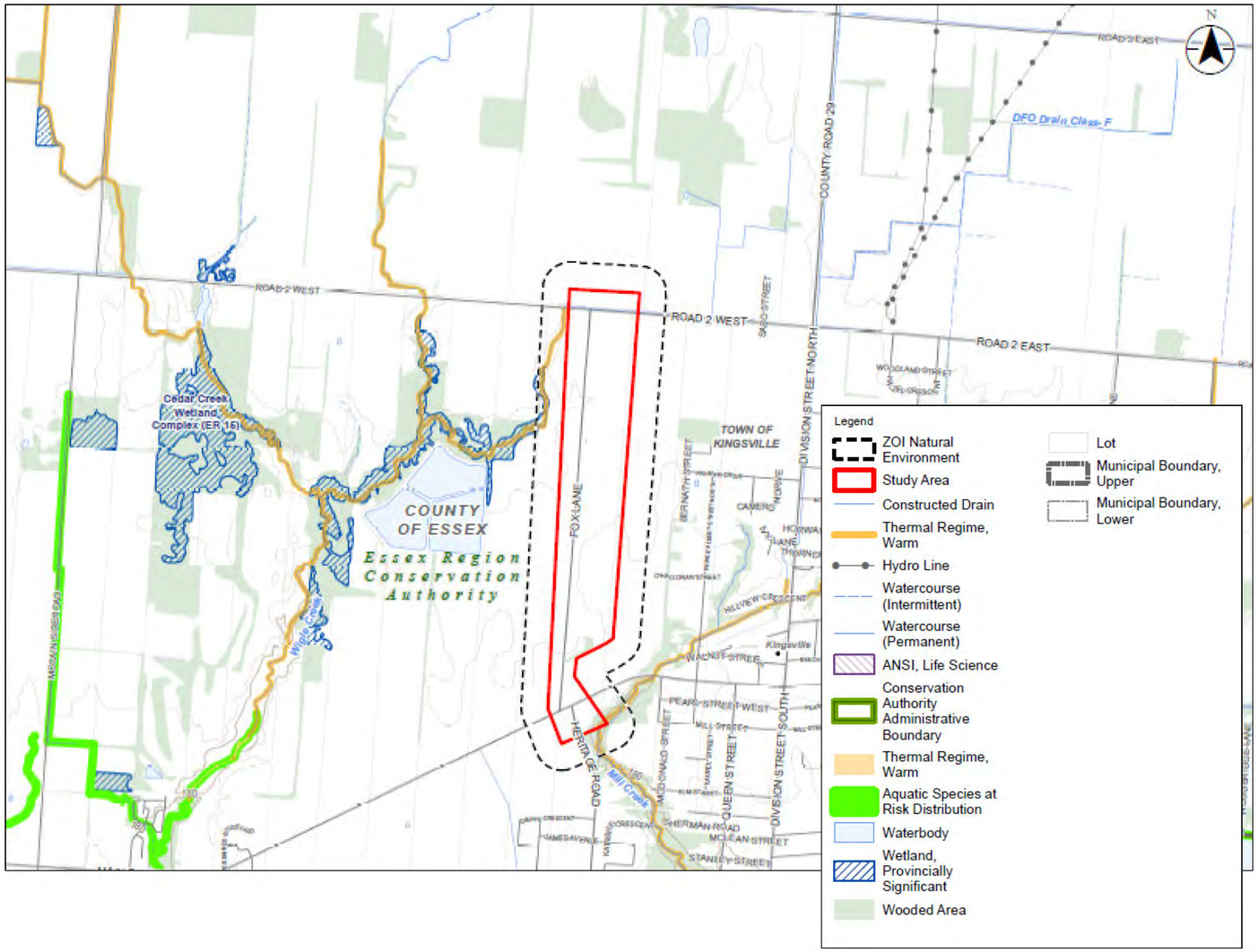


Existing Conditions – Natural Environment

The study area is located within the Essex Region Conservation Authority, Lake Erie Watershed Boundary. Natural heritage features within or near the study area include:

- Provincially Significant Wetland
- Watercourse
- Wooded Area

The proximity and potential impacts to natural features will be considered during the evaluation of alternative solutions.



Existing Conditions – Cultural Environment

Archaeological Resources

A *Stage 1 Archaeological Assessment* is underway as part of this study. It is anticipated that portions of the study area retain archaeological potential based on proximity to primary and secondary water sources, proximity to early historical transportation routes, and historical maps indicating an Indigenous presence throughout the Region. A *Stage 2 Archaeological Assessment* may be required.



Cultural Heritage

The Town of Kingsville is rich in arts and culture. Based on preliminary desktop findings using the criteria from the Ministry of Tourism, Culture, and Sport (MTCS), the study area may have potential built heritage resources at the intersection of Main Street West and Fox Lane, and along the southern part of Fox Lane. Additional investigations will be undertaken to determine if a *Cultural Heritage Report: Existing Conditions and Impact Assessment* is required.



Existing Conditions – Transportation

The existing Heritage Road is classified as a Major Arterial road in the south-west area of Kingsville. As identified through previous studies and the Town's updated CTMP, an extension of Heritage Road with a Collector road between Main Street West and Road 2 West as well as two local roads are required to support planned development in the Town. The proposed alignment of this new Collector road is largely based on the existing alignment of Fox Lane which is currently a gravel farm access road.

The existing unsignalized intersection at Main Street West and Heritage Road is identified for future traffic signals in the updated CTMP. The feasibility of a roundabout will also be considered at this intersection as part of this study.





Alternative Solutions

The following Alternative Solutions have been considered to support existing and future transportation needs in the community:

Alternative	Description	Recommendation
Do Nothing	• Status quo. Study area would remain in existing condition, and only planned improvements will be in place.	• Do not carry forward (for comparison purposes only)
Limit Development	• Limit development within the Town of Kingsville.	• Do not carry forward (future growth in the Town has been approved)
Transportation Demand Management	• Measures to manage travel demand by encouraging carpooling, shifting travel demand to off-peak hours, etc.	• Carry forward as part of the overall transportation strategy
Improve Other Roadways	• Continue to improve roadways within and adjacent to the study area.	• Carry forward as part of the overall transportation strategy
Operational Improvements	• Enhance traffic operations of roadway through improvements including intersections (traffic signals, roundabouts, turning lanes), access management and other measures.	• **Carry forward as the preferred alternative solution**
Construct new Heritage Road extension	• Extend Heritage Road from Main Street to Road 2 West, and provide 2 traffic lanes, cycling facilities and sidewalks.	• **Carry forward as the preferred alternative solution**

Evaluation Criteria

The Alternative Designs will be assessed using the factors and criteria below. Comments received from agencies, stakeholders, First Nations and Métis and members of the public will be integrated as required.

Socio-Economic

- Potential to address needs of existing and future users (pedestrians, cyclists, motorists)
- Consistency with Town and County planning policies
- Potential for property impacts

Natural Environment

- Potential to impact fish and fish habitat
- Potential to impact significant natural heritage features
- Potential to impact significant wildlife habitat and species at risk (SAR)

Evaluation Criteria Continued

Technical Considerations

- Ability to accommodate traffic demand
- Ability to accommodate Accessibility for Ontarians with Disabilities Act (AODA) requirements
- Consistency with planned transportation network (i.e., roads and active transportation facilities)
- Ability to improve network connectivity (i.e., roads and active transportation facilities)

Cultural Environment

- Potential to impact archaeological resources
- Potential to impact cultural heritage resources and/or cultural landscapes

Potential Alternative Design Concepts

A new collector road (Heritage Road extension) along Fox Lane would provide a direct connection from Main Street West to Road 2 West.

The proposed alignment shown was determined based on technical analyses, agreements and discussions with area property owners and developers, and may be refined as a result of detailed field investigations. The alignment supports design requirements to provide a safe, multi-modal corridor.

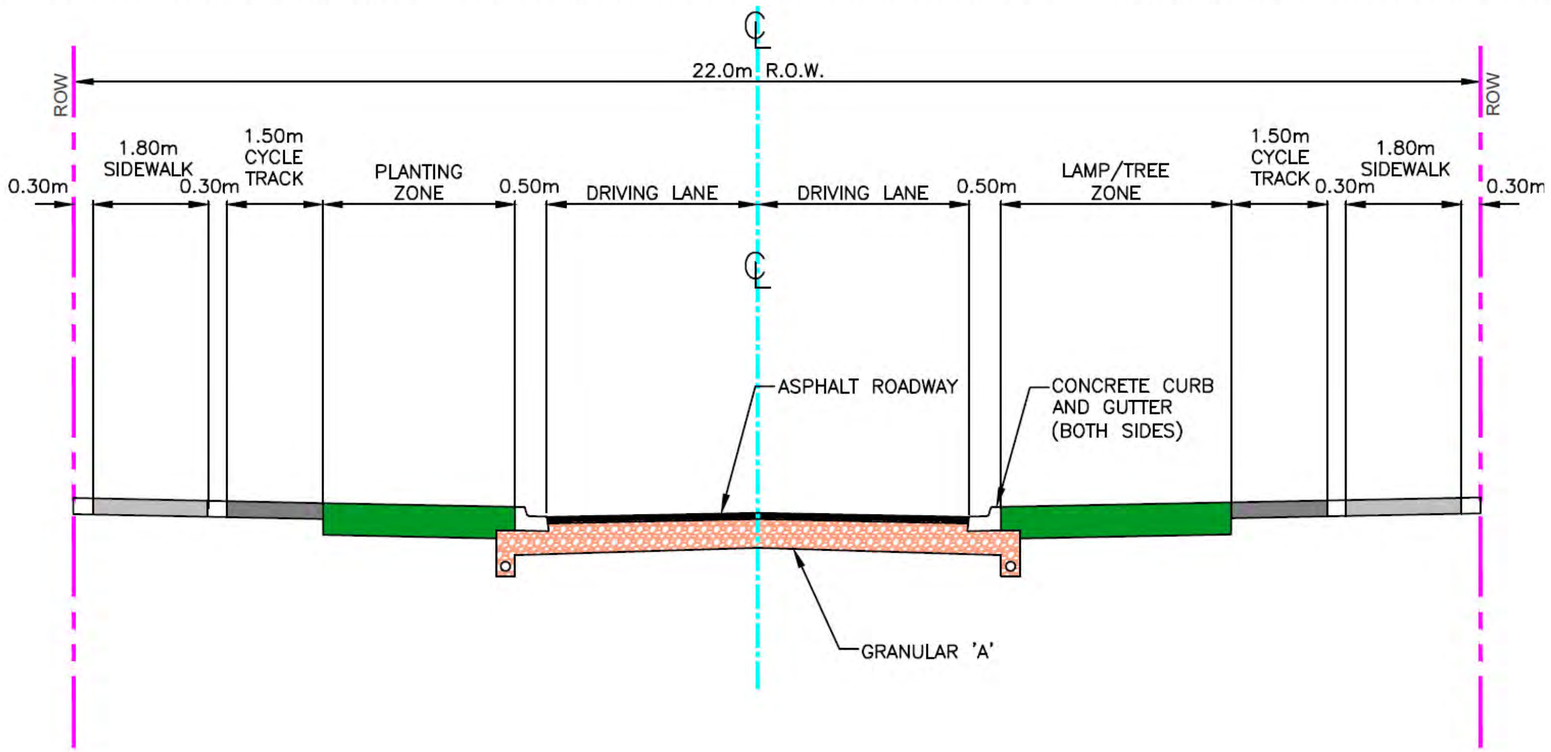
In addition to the new collector road, improvements at the Heritage Road and Main Street West intersection would need to be completed.



Potential Alternative Design Concepts –
Conceptual Cross-Section

The CTMP identified Heritage Road extension as a Collector Road, which requires a wide cross-section to accommodate vehicles, active transportation, sidewalks, etc. The CTMP also identified the road for a one-way Cycle Track facility. A draft conceptual cross-section is displayed below, and is subject to further refinement:

Does this conceptual cross-section meet your expectations and needs for a multi-modal roadway? What additional features would you like to see included?

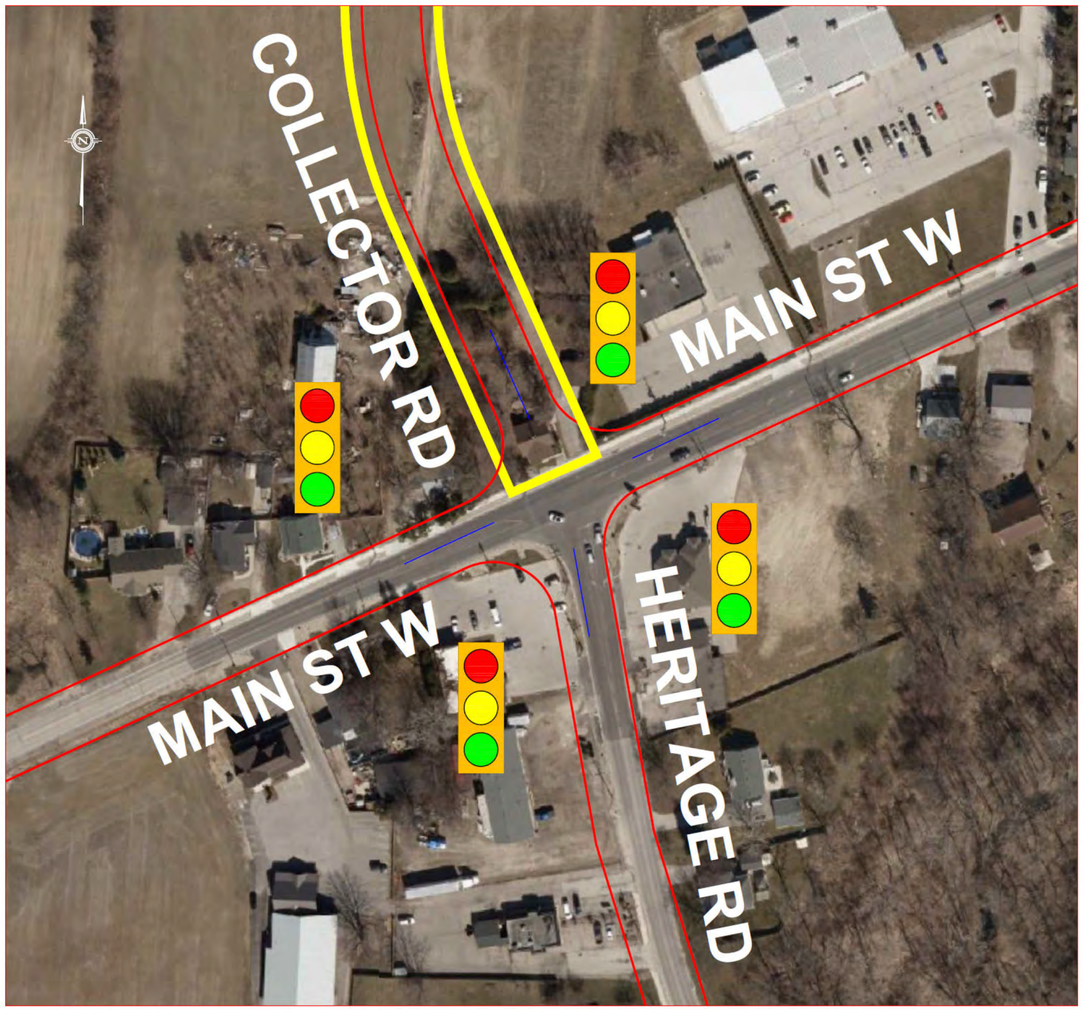


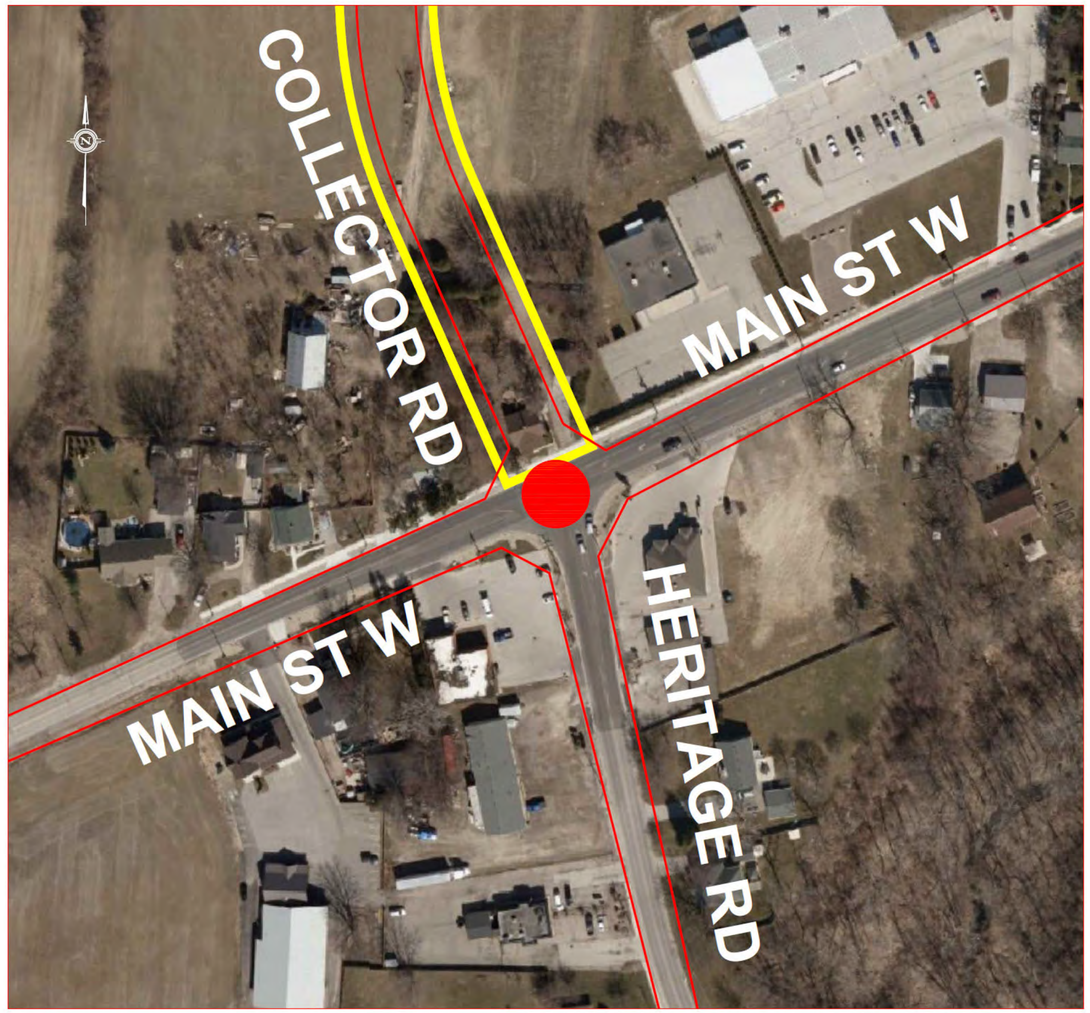
URBAN COLLECTOR ROAD - CYCLE TRACKS

N.T.S.

Potential Alternative Design Concepts – Intersection Improvements

The Alternative Design Concepts for the intersection improvements at Main Street West and Heritage Road may consider the following options:





Next Steps

Following this PIC, the project team will complete the next steps identified below:

- Review and respond to comments received
- Continue to engage First Nations and Métis communities, and consult with the public and agencies
- Confirm the Preferred Solution
- Develop and evaluate Alternative Design Concepts
- Complete technical studies

The results of these next steps will be used to identify the **Recommended Design Concept**, which will be presented at Public Information Centre #2, tentatively scheduled for winter 2023.

Thank you!

Thank you for participating in PIC #1 for the Town of Kingsville, Municipal Class EA for the Heritage Road to Road 2 study.

Your feedback is valuable and appreciated. Please provide comments by filling out the comment form or by contacting a member of the project team below by **October 20, 2022**:

Tim Del Greco, P.Eng.
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The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
(519) 733-2305
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Kane Erickson, CD, P.Eng.
Transportation Engineer
Stantec Consulting
600-171 Queens Avenue
London, Ontario N6A 5J7
(519) 859-5719
Kane.Erickson@stantec.com



Stantec

Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
Public Information Centre #1 Presentation Transcript
September 2022

Slide 1 – Title Slide

Hello and thank you for joining us for Town of Kingsville, Heritage Road to Road 2 West Municipal Class Environmental Assessment, Public Information Centre (or PIC) number 1.

Slide 2 – Welcome!

The goals of this Public Information Centre #1 are to:

- Introduce the project and why it is being undertaken
- Provide an overview of the process that this study will follow for the project
- Provide a summary of the problems and opportunities to address
- Present existing conditions within the study area
- Present the evaluation of alternative solutions
- Answer any questions you may have and provide an opportunity to get involved in the project

Comments received during this study will be used to help identify the recommended approach for current and future improvements within The Town of Kingsville.

Slide 3 – Project Overview

The Town of Kingsville is undertaking a Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. The study will involve:

- Extension of Heritage Road to Road 2 West
- Two new local roads connecting to the new residential subdivision
- Active transportation infrastructure
- Intersection improvements at Main Street West and Heritage Road

These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.

Slide 4 – Municipal Class EA Process

The Municipal Class EA process is legislated through the Ontario Environmental Assessment Act.

The process provides a decision-making framework that enables the requirements of the EA Act to be met for municipal infrastructure projects.

This EA Study is being conducted as a Schedule ‘C’ project and will cover Phase 1 to Phase 4 of the EA process; we are currently nearing completion of Phase 2 of the study.

Slide 5 – Planning and Policy Context

Key plans were reviewed to provide background context for this study:

Town of Kingsville Official Plan

The Town's Official Plan (2011) guides future development to the year 2026 and anticipates continued growth within the community. The Plan designates the land within the study area as Residential and Agricultural.

Comprehensive Transportation Master Plan

The Town is nearing the completion of a Comprehensive Transportation Master Plan (CTMP) to:

- guide the future of transportation across the community
- identify transportation improvements within the Town
- create a safe, efficient, and sustainable multi-modal transportation network

The CTMP identifies the need for improvements to the intersection at Heritage Road and Main Street West, the extension of Heritage Road to Road 2 West, connections to existing communities, and the need for cycling facilities. The Town is taking the opportunity to consider implementing intersection improvements in the short-term as part of this EA, which will provide cost savings on design and construction efforts.

Slide 6 – Problem & Opportunity

At the start of the study, a problem or opportunity statement is prepared which is used to guide the study as alternative solutions are developed. The problem and opportunity statement developed for this project is as follows:

The Town of Kingsville is experiencing growth within the community. The growth has created an increase in active transportation, vehicular and truck traffic on the existing transportation network.

The Town of Kingsville is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. To accommodate future growth and development within the community, improvements are required: the extension of Heritage Road to Road 2 West; two new local roads; and intersection improvements.

Slide 7 – Existing Conditions – Natural Environment

The study area is located within the Essex Region Conservation Authority, Lake Erie Watershed Boundary. Natural heritage features within or near the study area include:

- Provincially Significant Wetland
- Watercourse

- Wooded Area

The proximity and potential impacts to natural features will be considered during the evaluation of alternative solutions.

Slide 8 – Existing Conditions - Cultural Heritage

Archaeological Resources

A *Stage 1 Archaeological Assessment* is underway as part of this study. It is anticipated that portions of the study area retain archaeological potential based on proximity to primary and secondary water sources, proximity to early historical transportation routes, and historical maps indicating an Indigenous presence throughout the Region. A *Stage 2 Archaeological Assessment* may be required.

Cultural Heritage

The Town of Kingsville is rich in arts and culture. Based on preliminary desktop findings using the criteria from the Ministry of Tourism, Culture, and Sport (MTCS), the study area may have potential built heritage resources at the intersection of Main Street West and Fox Lane, and along the southern part of Fox Lane. Additional investigations will be undertaken to determine if a *Cultural Heritage Report: Existing Conditions and Impact Assessment* is required.

Slide 9 – Existing Conditions – Transportation

The existing Heritage Road is classified as a Major Arterial road in the south-west area of Kingsville. As identified through previous studies and the Town's updated CTMP, an extension of Heritage Road with a Collector road between Main Street West and Road 2 West as well as two local roads are required to support planned development in the Town. The proposed alignment of this new Collector road is largely based on the existing alignment of Fox Lane which is currently a gravel farm access road.

The existing unsignalized intersection at Main Street West and Heritage Road is identified for future traffic signals in the updated CTMP. The feasibility of a roundabout will also be considered at this intersection as part of this study.

Slide 10 – Alternative Solutions

The following Alternative Solutions have been considered to support existing and future transportation needs in the community:

- Do Nothing
- Limit Development
- Transportation Demand Management
- Improve Other Roadways

- Operational Improvements
- Construct new Heritage Road extension

Operational Improvements and Construct new Heritage Road extension alternatives were selected to be carried forward as the preferred alternative solutions.

Slide 11 – Evaluation Criteria

The Alternative Designs will be assessed using the factors and criteria below. Comments received from agencies, stakeholders, First Nations and Métis and members of the public will be integrated as required.

Socio-Economic

- Potential to address needs of existing and future users (pedestrians, cyclists, motorists)
- Consistency with Town and County planning policies
- Potential for property impacts

Natural Environment

- Potential to impact fish and fish habitat
- Potential to impact significant natural heritage features
- Potential to impact significant wildlife habitat and species at risk (SAR)

Slide 12 – Evaluation Criteria Continued

Technical Considerations

- Ability to accommodate traffic demand
- Ability to accommodate Accessibility for Ontarians with Disabilities Act (AODA) requirements
- Consistency with planned transportation network (i.e., roads and active transportation facilities)
- Ability to improve network connectivity (i.e., roads and active transportation facilities)

Cultural Environment

- Potential to impact archaeological resources
- Potential to impact cultural heritage resources and/or cultural landscapes

Slide 13 – Potential Alternative Design Concepts

A new collector road (Heritage Road extension) along Fox Lane would provide a direct connection from Main Street West to Road 2 West.

The proposed alignment shown was determined based on technical analyses, agreements and discussions with area property owners and developers, and may be refined as a result of detailed field investigations. The alignment supports design requirements to provide a safe, multi-modal corridor.

In addition to the new collector road, improvements at the Heritage Road and Main Street West intersection would need to be completed.

Slide 14 – Potential Alternative Design Concepts – Conceptual Cross Section

The CTMP identified Heritage Road extension as a Collector Road, which requires a wide cross-section to accommodate vehicles, active transportation, sidewalks, etc. The CTMP also identified the road for a one-way Cycle Track facility. A draft conceptual cross-section is displayed below, and is subject to further refinement.

Does this conceptual cross-section meet your expectations and needs for a multi-modal roadway? What additional features would you like to see included?

Slide 15 – Potential Alternative Design Concepts – Intersection Improvements

The Alternative Design Concepts for the intersection improvements at Main Street West and Heritage Road may consider the following options:

- A signalized intersection
- A roundabout

Slide 16 – Next Steps

Following this Public Information Centre, the Project Team will complete the next steps below:

- Review and respond to comments received
- Continue to engage First Nations and Métis communities, and consult with the public and agencies
- Confirm the Preferred Solution
- Develop and evaluate Alternative Design Concepts
- Complete technical studies

The results of these next steps will be used to identify the Recommended Design Concept, which will be presented at Public Information Centre #2, tentatively scheduled for winter 2023.

Slide 17 – Thank you!

Thank you for participating in Public Information Centre #1 for the Town of Kingsville, Municipal Class EA for the Heritage Road to Road 2 study.

Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
Public Information Centre #1 Presentation Transcript
September 2022

Your feedback is valuable and appreciated. Please provide comments by filling out the comment form or by contacting a member of the project team below by October 20, 2022.

Thank you again for your interest in the study!

Public Information Centre 1 Sign-In

Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study

Grovedale Arts & Culture Centre (103 Park Street, Kingsville) – Tuesday, September 20, 2022

Name / Title	Address	Contact Information (Email/Phone)
Jackie Barrans		
Gord Queen		
Ken Kwiat		
Laura Lucier		
Gregg McCreadY		
Ken Neuman		
Mike Glass		
Brent Patterson		
Justina Peters		
Jay Jones		

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. This information will be kept on file and may be included in study documentation, which will be made available for public review.

Kingsville

Public Information Centre 1 Sign-In
Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study

Grovedale Arts & Culture Centre (103 Park Street, Kingsville) – Tuesday, September 20, 2022

Stantec

Name / Title	Address	Contact Information (Email/Phone)
Dennis Rogers		
ADAM EDWARDS		
Sheri Lowrie		
Lori + Mike Harris		
George Zwick		
MIKE ROSS		
HAROLD REMMICK		
Jan + Jack Fisher		
DAVE Golden		
DAWN DEYONG		

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Kingsville

Public Information Centre 1 Sign-In
Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study

Grovedale Arts & Culture Centre (103 Park Street, Kingsville) – Tuesday, September 20, 2022

Stantec

Name / Title	Address	Contact Information (Email/Phone)
Tamara Stomp		
Paul Repke		
Barry O. Wilson		
Cindy Prince		
Jan DeLellis		
Sandy Sutak		

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. This information will be kept on file and may be included in study documentation, which will be made available for public review.

Heritage Road to Road 2 West

Municipal Class Environmental Assessment

Town of Kingsville

Public Information Centre #2

Thursday, July 27, 2023 from 5:00pm to 7:00pm

Grovedale Arts & Culture Centre
103 Park Street, Kingsville, ON

Welcome!

The goals of this Public Information Centre (PIC) are to:



- Provide an update on the project since PIC #1
- Present the alternative design concepts
- Present the evaluation of alternative design concepts and recommended design
- Answer any questions you may have and provide an opportunity to get involved in the project

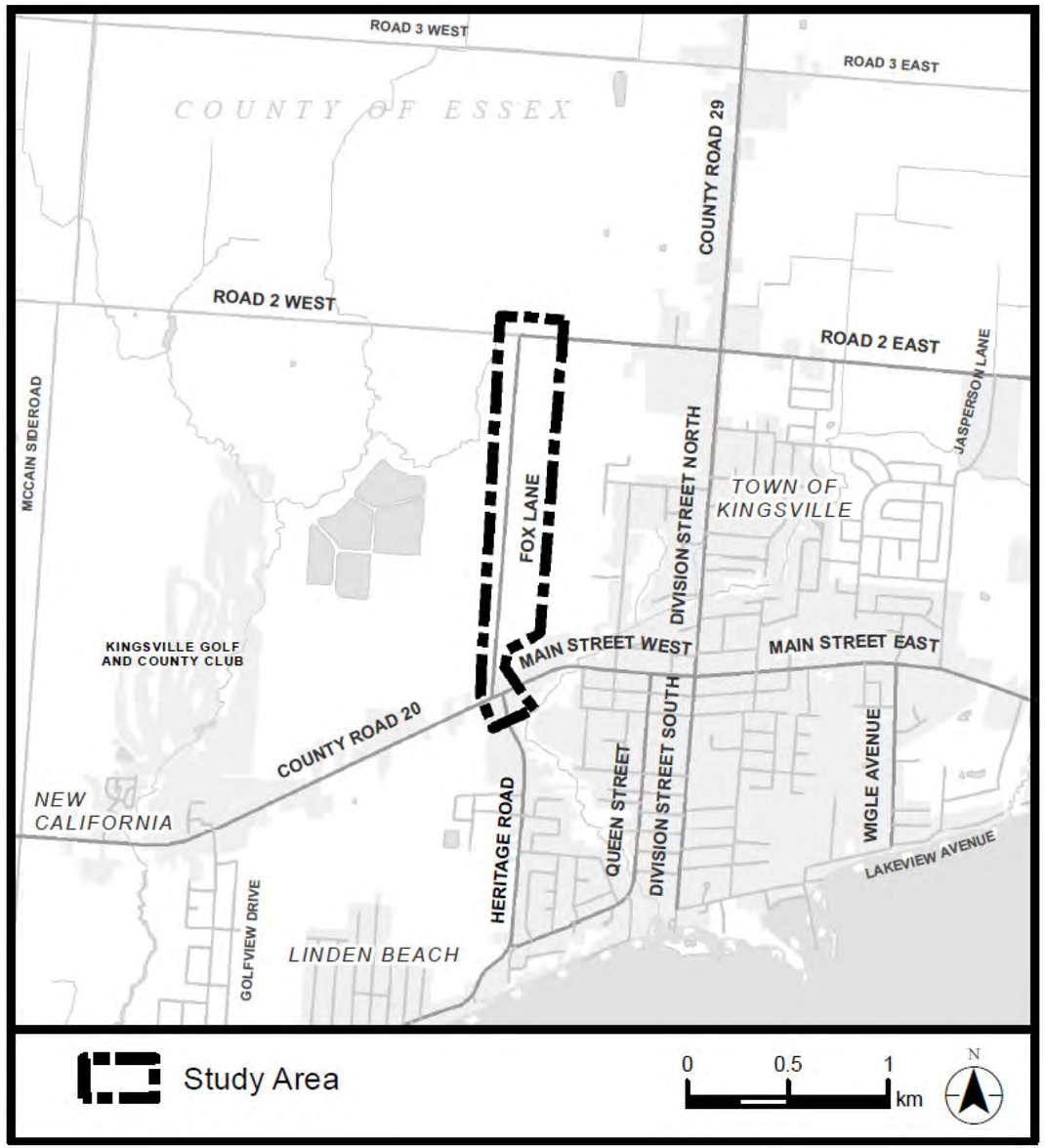
Comments received during this study will be used to help identify the recommended approach for current and future improvements within the study area.

Project Overview

The Town of Kingsville is undertaking a Schedule C Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. The study will involve:

- Extension of Heritage Road to Road 2 West
- Two new local roads connecting to the new residential subdivision
- Active transportation infrastructure
- Intersection improvements at Main Street West and Heritage Road

These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.



Municipal Class EA Process

The Municipal Class EA process is legislated through the Ontario Environmental Assessment Act.

The process provides a decision-making framework that enables the requirements of the EA Act to be met for municipal infrastructure projects.

This EA Study is being conducted as a Schedule 'C' project and will cover Phase 1 to Phase 4 of the EA process.

Phase 1: Problem and Opportunity

- Review background planning and policy documents
- Identify study area needs, problems and opportunities

Phase 2: Alternative Planning Solutions

- Inventory socio-economic, natural and cultural environments
- Identify and evaluate feasible alternative solutions
- Select Recommended Alternative Solution
- Present to public and agencies for comment

Phase 3: Alternative Design Concepts

We are here

- Develop and evaluate Design Alternatives
- Identify Impacts and Mitigation Measures
- Select a Recommended Design Alternative
- Present to public and agencies for comment

Phase 4: Environmental Study Report

- Document the decision-making process in an Environmental Study Report (ESR)
- Circulate draft ESR to agencies for review
- Publish Notice of Study Completion for 30-day review period

Phase 5: Implementation

- Complete Contract Drawings and Tender Documents
- Construction and Operation
- Monitor for Environmental Provisions and Commitments

Continuous Consultation

Preferred Alternative Solution

The following Alternative Solutions have been carried forward from PIC #1 to address the problems and opportunities identified in the study area:

Operational Improvements

- Enhance traffic operations of the roadway through improvements including intersections (traffic signals, roundabouts, turning lanes), access management and other measures.

Heritage Road Extension

- Extend Heritage Road from Main Street to Road 2 West with two traffic lanes, cycling facilities and sidewalks.

Problem & Opportunity

The Town of Kingsville is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. To accommodate future growth and development within the community, improvements are required: the extension of Heritage Road to Road 2 West; two new local roads; and intersection improvements.

Alternative Designs

Based on the preferred solution, alternative designs were developed for the project including:

Intersection Improvements at Heritage Road and Main Street

- Signalized Intersection
- Roundabout

Road Cross-Sections

- Option A – Rural Collector with Single Multi-Use Trail
- Option B – Rural Collector with Fully Paved Shoulders
- Option C – Urban Collector Road with Cycle Tracks

Road Alignments for the Extension of Heritage Road

- Option 1 – Widen existing Fox Lane to the west
- Option 2 – Widen existing Fox Lane to the east
- Option 3 – Widen existing Fox Lane symmetrically (to the centreline)
- Option 4 – New alignment east of Fox Lane

Evaluation Criteria

The Alternative Designs were assessed using the factors and criteria below:

Socio-Economic

- Planning Policies, Property Impacts, Residential Uses, Agricultural Uses, Traffic Noise, Light Pollution



Natural Environment

- Wildlife, Vegetation



Cultural Environment

- Archaeological Resources, Built Heritage Resources and Cultural Heritage Landscapes



Technical Considerations

- Construction Staging, Constructability, Cost

Alternative Road Cross-Sections

Option A – Rural Collector with Single Multi-Use Trail

This cross-section includes a paved, two-lane road, with granular shoulders and a 3.0m multi-use trail on one side of the road only. The multi-use trail accommodates pedestrians and cyclists in both directions. This cross-section accommodates large agricultural vehicles.

Option B – Rural Collector with Fully Paved Shoulders

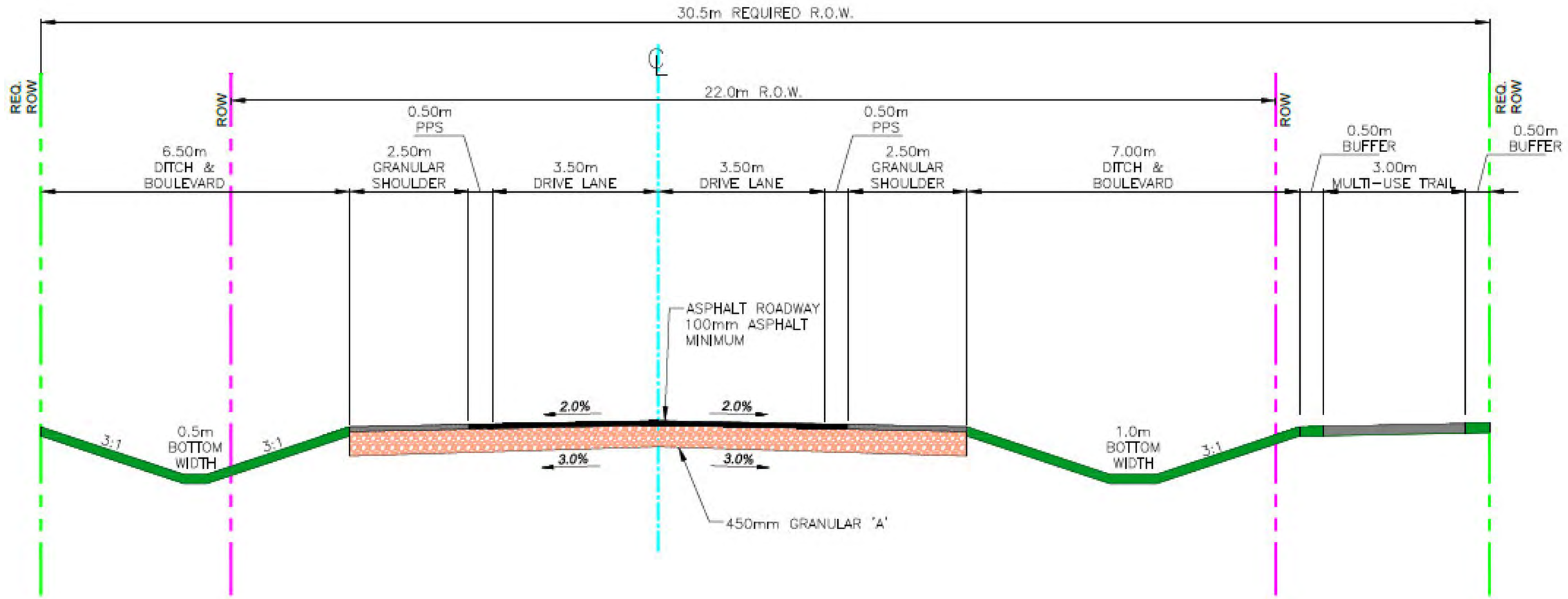
This cross-section includes a paved, two-lane road, with a 1.0m buffer between the travel lanes, and on-road bike lanes. The road accommodates all modes of transportation, including trucks, agricultural vehicles, cyclists and pedestrians. Agricultural vehicles would be required to share the road platform with cyclists using the bike lanes and waiting for clear opportunities to pass.

Option C – Urban Collector Road with Cycle Tracks

This urban cross-section utilizes the entire right-of-way to provide sidewalks, cycle tracks, and a fully paved roadway with curb and gutter. The roadway accommodates all modes of transportation, with the exception of agricultural vehicles, which would be required to use the existing Fox Lane access off Main Street to access farmlands adjacent to the extension of Heritage Road.

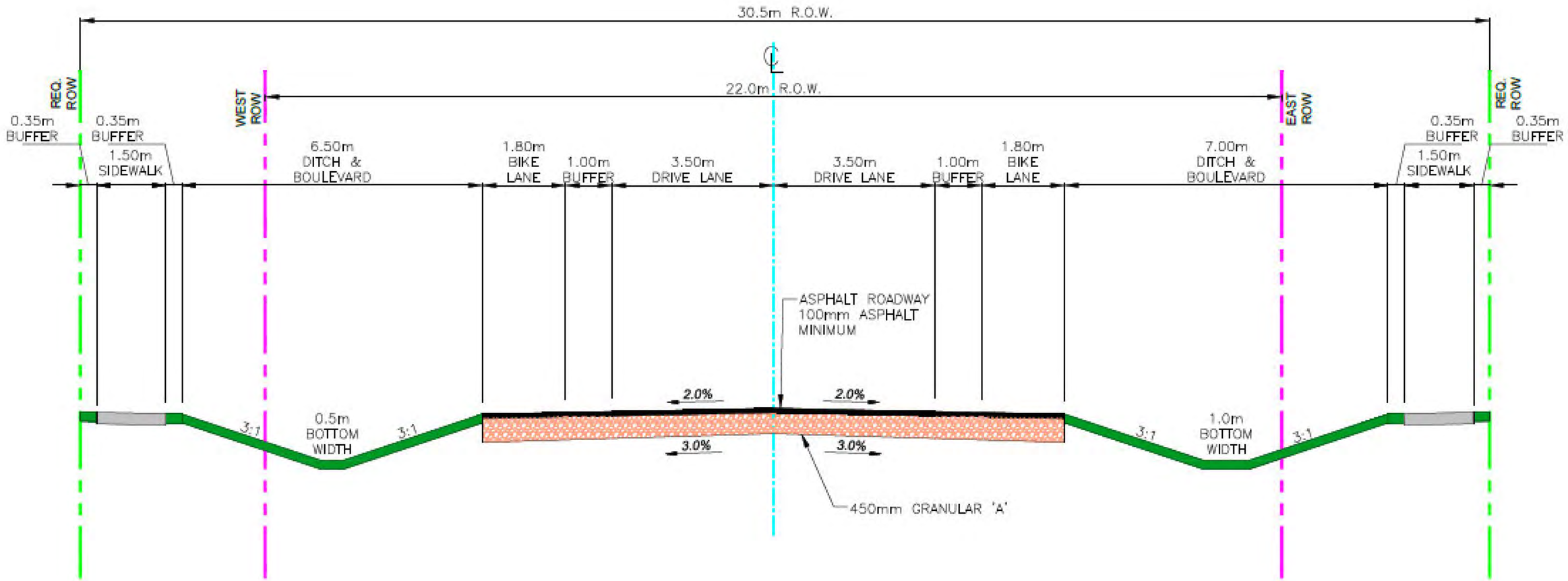
Alternative Road Cross-Section – Option A

Option A - Rural Collector with Single Multi-Use Trail



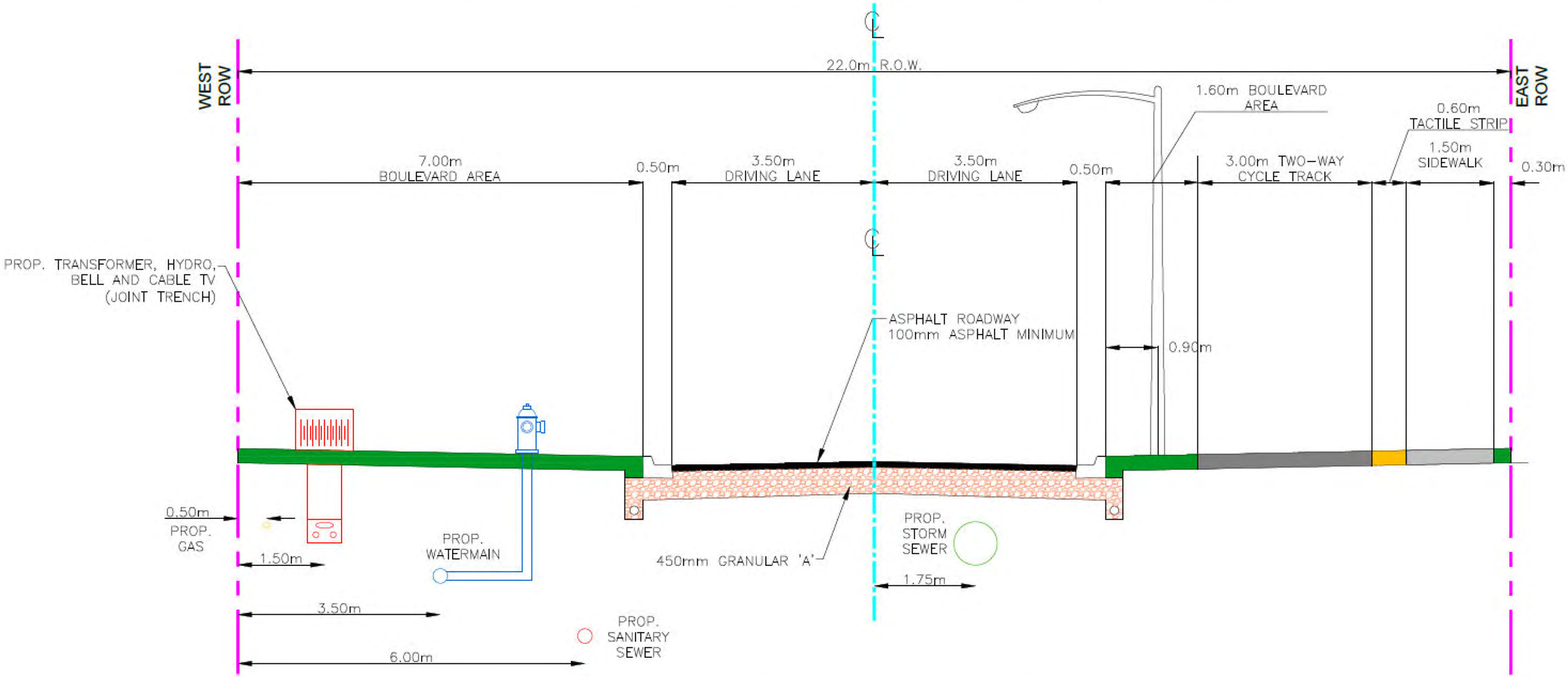
Alternative Road Cross-Section – Option B

Option B - Rural Collector with Fully Paved Shoulders



Recommended Road Cross-Section

Option C - Urban Collector Road with Cycle Tracks

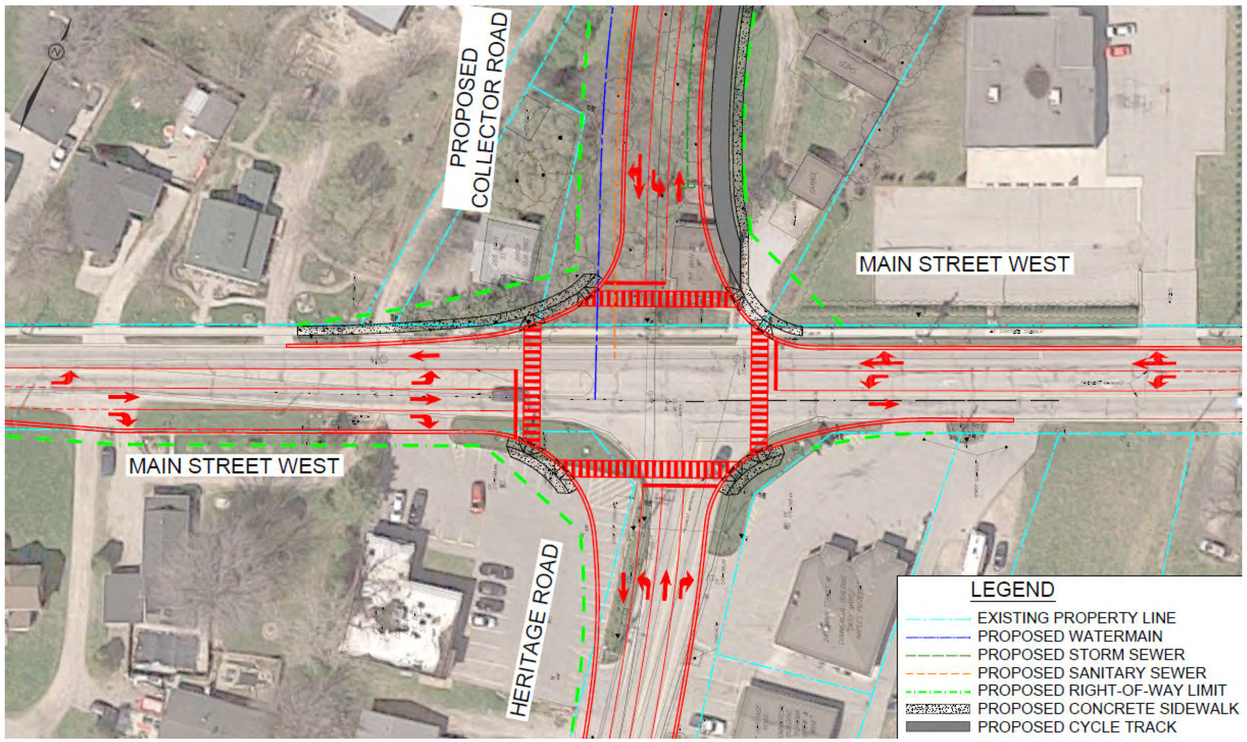


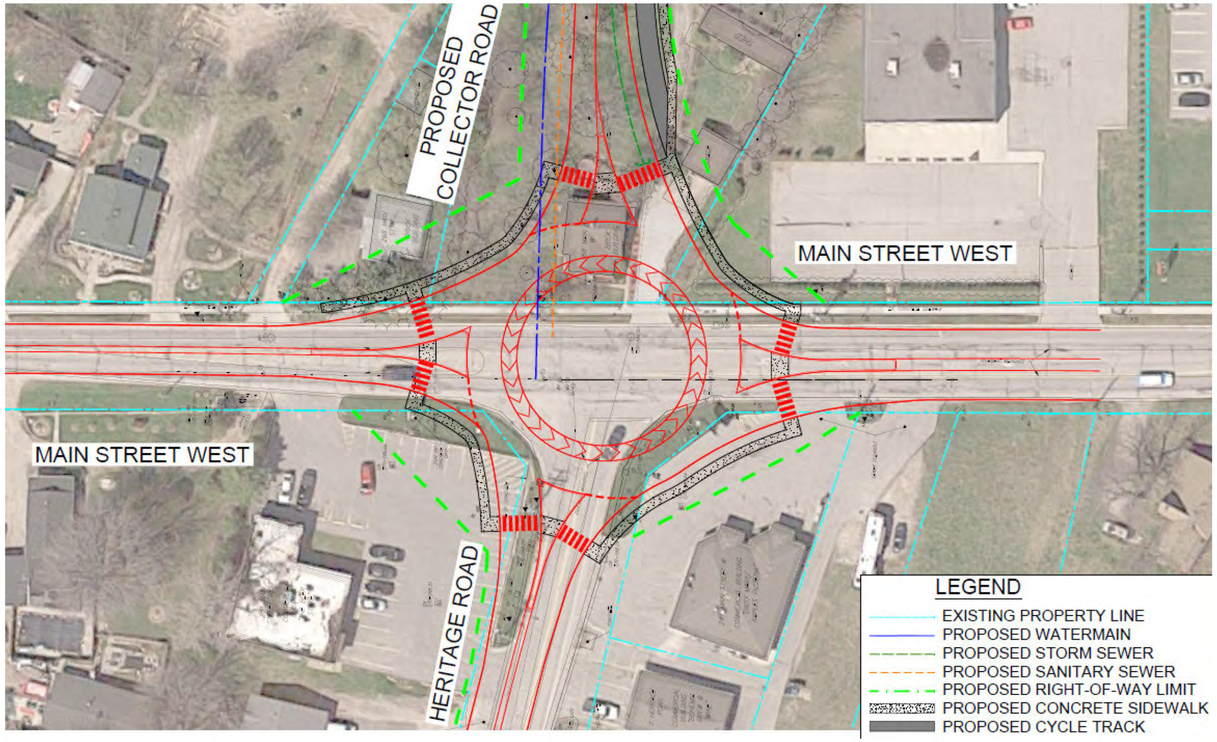
URBAN COLLECTOR ROAD

N.T.S.

Intersection Improvements at Heritage Road and Main Street

Two alternative intersection designs were considered for the Heritage Road and Main Street intersection; a signalized intersection and a roundabout.

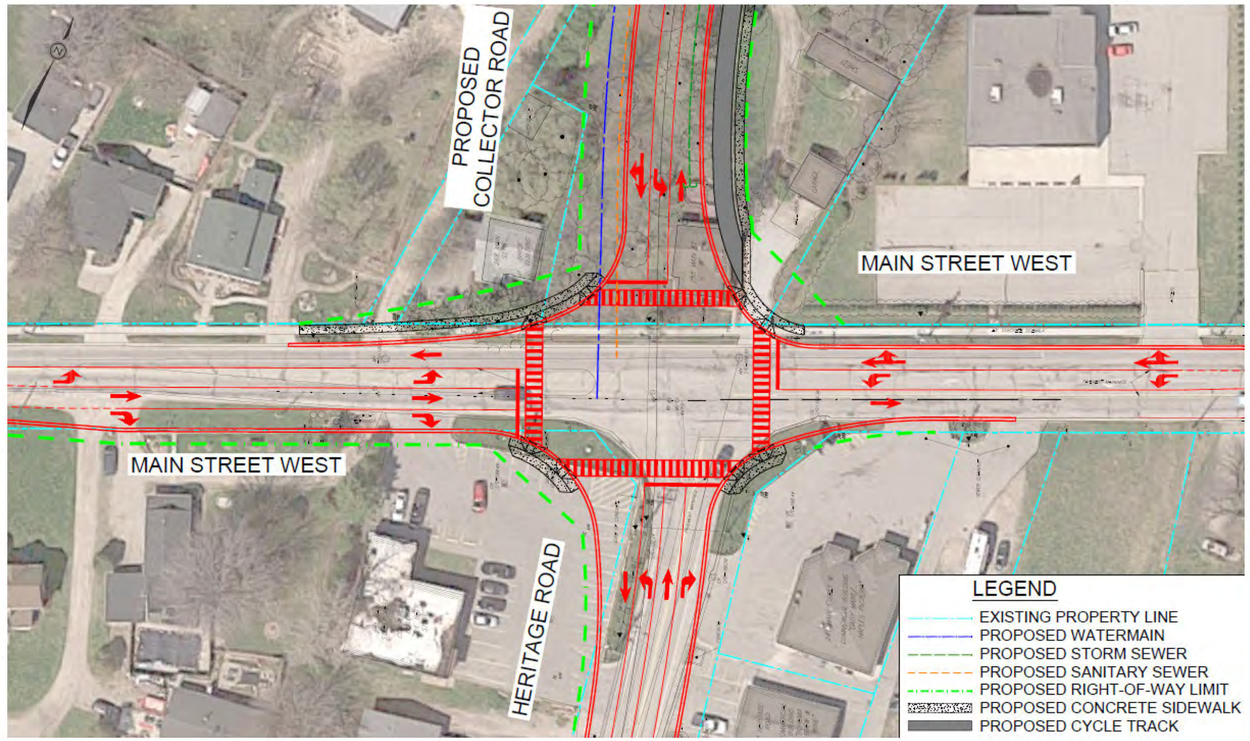




Recommended Intersection

An evaluation of alternative intersection design options was completed and identified that a Signalized Intersection is preferred for the Heritage Road and Main Street intersection.

	Signalized Intersection	Roundabout Intersection
Socio-Economic	Most Preferred	Least Preferred
Natural Environment	Most Preferred	Least Preferred
Cultural Environment	To Be Determined	To Be Determined
Technical Considerations	Most Preferred	Least Preferred
Overall Summary	**Most Preferred**	**Least Preferred**



Alternative Road Alignments

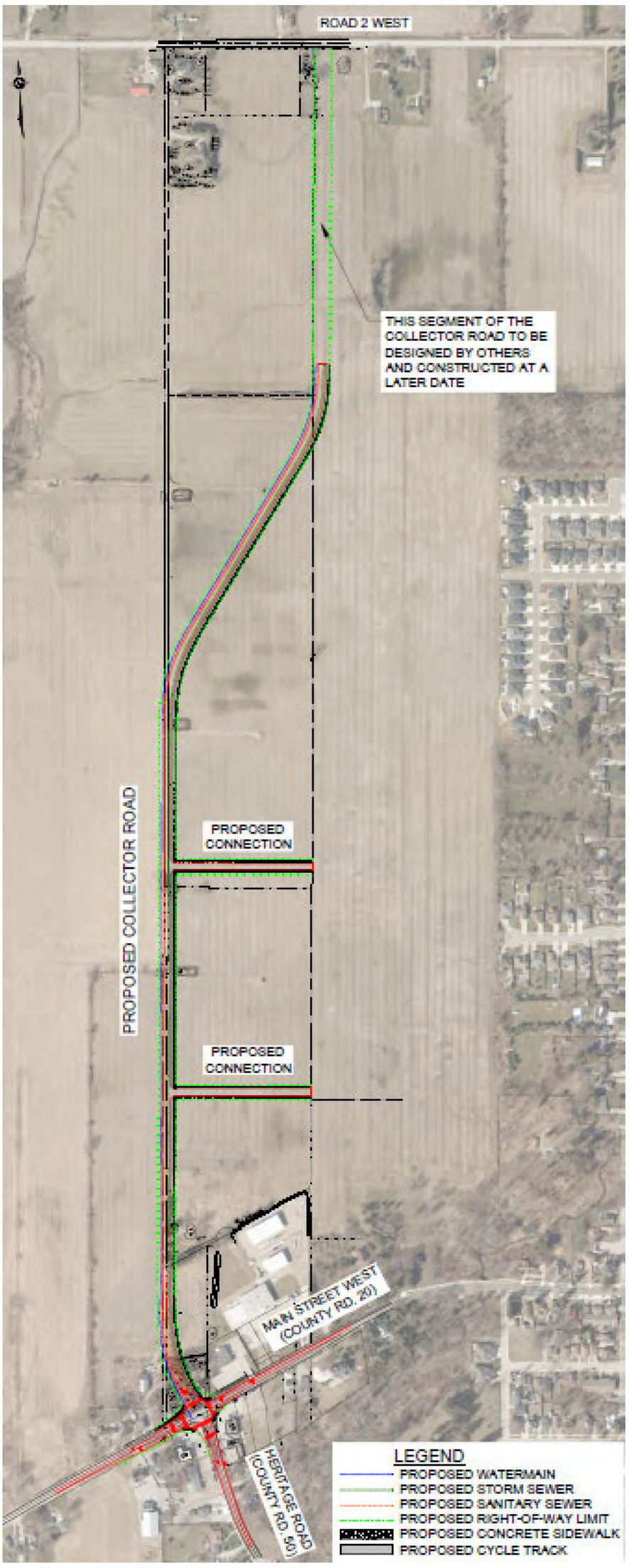
At PIC #1, an alignment for the extension of Heritage Road was presented. A detailed evaluation of alignment options was completed and is summarized below:

	Option 1 – Widen existing Fox Lane to the west	**Option 2 – Widen existing Fox Lane to the east**	**Option 3 – Widen existing Fox Lane symmetrically**	**Option 4 – New alignment east of Fox Lane**
Socio-Economic	Moderately Preferred	Most Preferred	Moderately Preferred	Least Preferred
Natural Environment	Moderately Preferred	Moderately Preferred	Moderately Preferred	Least Preferred
Cultural Environment	To Be Determined	To Be Determined	To Be Determined	To Be Determined
Technical Considerations	Moderately Preferred	Moderately Preferred	Moderately Preferred	Moderately Preferred
Overall Summary	**Moderately Preferred**	**Most Preferred**	**Moderately Preferred**	**Least Preferred**

Recommended Design

The recommended road alignment is to **Widen Existing Fox Lane to the East.**

The recommended alignment shown was determined based on technical analyses and agreements and discussions with area property owners and developers. This alignment is approximate and will be refined as required during detailed design following detailed field investigations. The alignment supports a safe, multi-modal corridor, makes best use of land available along the corridor in coordination with future land development, and accommodates existing and future traffic conditions within the Town.



Summary of Recommended Alternative

Recommended Design Element	Rationale
<u>Alignment</u> Widen Existing Fox Lane East	• Aligns with existing south leg of Heritage Road intersection • Makes best use of land available along the corridor in coordination with future land development • Appropriate use of the existing Fox Lane road allowance as a suitable evolutionary upgrade to Fox Lane • Other alignment options create misalignment issues with the Heritage Road intersection and generally require more land acquisition
<u>Intersection</u> Signalized	• Provides a good level of service compared to a roundabout design • Reduces infrastructure cost, land requirement and utility relocations compared to a roundabout design • Avoids lengthy road closures, reducing impacts to area residents, and businesses during construction compared to roundabout construction
<u>Cross-Section</u> Urban Collector with Cycle Track	• Storm sewer with storm-water management facilities are introduced with an urban cross-section eliminating the need for large ditches / swales, managing surface water conveyance within the study area • Allows for future cycle track and sidewalk to be added along the west side of the road in the future when development occurs • Allows for cycle-track and sidewalk to be constructed behind curb-and gutter, creating a safer environment than on-road cycling facilities for this type of corridor • Field entrances and crossing points will be provided along the route for continued agricultural use of the adjacent lands

Potential Impacts and Proposed Mitigation Measures

Environmental Factor	Proposed Mitigation Measures/Commitments to Future Work
Trees/Vegetation	Some trees/vegetation will need to be removed. Vegetation and tree removal will be minimized to the extent possible, and opportunities for new tree plantings and landscape enhancements will be identified during detailed design.
Wildlife/Habitat	Targeted species surveys will be carried out for species that have the potential to be present during detailed design.
Archaeology	Portions of the study area retain potential for the identification and recovery of archaeological resources. A Stage 2 archaeological assessment will be initiated in summer 2023 for the areas identified as having archaeological potential.
Cultural Heritage Resources	Investigations for Built Heritage Resources and Cultural Heritage Landscapes present within the study area are being carried out to identify resources, potential impacts, and proposed mitigation.
Property	Impacts to private property have been identified in association with the Recommended Design. Negotiations with impacted property owners are ongoing.
Noise	The future noise levels associated with the Recommended Design are not anticipated to exceed 55dBA, therefore noise mitigation was not considered.
Traffic Operations	Construction activities are expected to temporarily impact traffic operations. Advanced notification will be provided to affected residents and businesses in advance of construction activities. Any detours required will be finalized during detail design and construction in coordination with emergency service providers.
Drainage	Infrastructure to accommodate drainage will be constructed in the study area, and may include low-impact developments (i.e., swales), storm sewers, stormwater management ponds, etc.
Potentially Contaminated Lands	One aboveground storage tank and oil derrick will be impacted. The tank will be relocated, and oil derrick removed prior to construction. Subsurface investigations will be required to determine mitigation requirements.
Agricultural Vehicles	Access for agricultural vehicles may be temporarily disturbed. Field entrances and crossing points will be provided along the route for continued agricultural use of the adjacent lands. The existing access of Fox Lane from Main Street and Road 2 West will remain in place.
Utilities	Some utilities will require relocation for the construction of the Recommended Design.

Next Steps

Following this PIC, the project team will complete the next steps identified below:

- Review and respond to comments received
- Continue to engage Indigenous communities, First Nations and Métis, and consult with the public and agencies
- Confirm the Preferred Design
- Prepare the Environmental Study Report (ESR)
- Notice of Study Completion (30-Day public review)

The results of these next steps will be included in the ESR, which will be made available for a 30-day public review period. The ESR will summarize the study process and document the recommendations of this study.

Thank you!

Thank you for participating in PIC #2 for the Town of Kingsville, Municipal Class EA for the Heritage Road to Road 2 study.

Your feedback is valuable and appreciated. Please provide comments by filling out the comment form or by contacting a member of the project team below by **August 27, 2023**:

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
(519) 733-2305
tdelgreco@kingsville.ca

Kane Erickson, CD, P.Eng.
Transportation Engineer
Stantec Consulting
600-171 Queens Avenue
London, Ontario N6A 5J7
(519) 859-5719
Kane.Erickson@stantec.com



Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
Public Information Centre #2 Presentation Transcript
July 2023

Slide 1 – Title Slide

Hello and thank you for joining us for Town of Kingsville, Heritage Road to Road 2 West Schedule C Municipal Class Environmental Assessment, Public Information Centre (or PIC) number 2.

Slide 2 – Welcome!

The goals of this PIC are to:

- Provide an update on the project since PIC #1
- Present the alternative design concepts
- Present the evaluation of alternative design concepts and recommended design
- Answer any questions you may have and provide an opportunity to get involved in the project

Comments received during this study will be used to help identify the recommended approach for current and future improvements within the study area.

Slide 3 – Project Overview

The Town of Kingsville is undertaking a Schedule C Municipal Class Environmental Assessment (EA) to meet long-term transportation needs within the community. The study will involve:

- Extension of Heritage Road to Road 2 West
- Two new local roads connecting to the new residential subdivision
- Active transportation infrastructure
- Intersection improvements at Main Street West and Heritage Road

These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development within the Town.

Slide 4 – Municipal Class EA Process

The Municipal Class EA process is legislated through the Ontario Environmental Assessment Act.

The process provides a decision-making framework that enables the requirements of the EA Act to be met for municipal infrastructure projects.

This EA Study is being conducted as a Schedule ‘C’ project and will cover Phase 1 to Phase 4 of the EA process; we are nearing the completion of Phase 3 of the study.

Slide 5 – Preferred Alternative Solution

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Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
Public Information Centre #2 Presentation Transcript
July 2023

The following alternative solutions have been carried forward from PIC #1 to address the problems and opportunities identified in the study area: Operational Improvements and the extension of Heritage Road.

Operational improvements include enhancing traffic operations of the roadway through improvements including intersections (traffic signals, roundabouts, turning lanes), access management and other measures.

The Heritage Road extension will include extending Heritage Road from Main Street to Road 2 West with two traffic lanes, cycling facilities and sidewalks.

This preferred solution meets the following problem and opportunity statement for this study:

The Town of Kingsville is committed to providing a safe and accessible multi-modal transportation network that enhances community connections, increases efficiency, and prioritizes sustainability. To accommodate future growth and development within the community, improvements are required: the extension of Heritage Road to Road 2 West; two new local roads; and intersection improvements.

Slide 6 – Alternative Designs

Based on the preferred solution, alternative designs were developed for the project, including the following:

<u>Intersection Improvements at Heritage Road and Main Street</u>

- Signalized Intersection
- Roundabout

<u>Road Cross-Sections</u>

- Option A – Rural Collector with Single Multi-Use Trail
- Option B – Rural Collector with Fully Paved Shoulders
- Option C – Urban Collector Road with Cycle Tracks

<u>Road Alignments for the Extension of Heritage Road</u>

- Option 1 – Widen existing Fox Lane to the west
- Option 2 – Widen existing Fox Lane to the east
- Option 3 – Widen existing Fox Lane symmetrically (to the centreline)
- Option 4 – New alignment east of Fox Lane

Stantec

Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
Public Information Centre #2 Presentation Transcript
July 2023

Slide 7 – Evaluation Criteria

The alternative designs were assessed using the factors and criteria below:

Socio-Economic

- Planning Policies, Property Impacts, Residential Uses, Agricultural Uses, Traffic Noise, Light Pollution

Natural Environment

- Wildlife, Vegetation

Cultural Environment

- Archaeological Resources, Cultural Heritage Resources

Technical Considerations

- Construction Staging, Constructability, Cost

Slide 8 – Alternative Road Cross-Sections

Descriptions of the alternative road cross-sections are provided below:

Option A – Rural Collector with Single Multi-Use Trail

- This cross-section includes a paved, two-lane road, with granular shoulders and a 3.0m multi-use trail on one side of the road only. The multi-use trail accommodates pedestrians and cyclists in both directions. This cross-section accommodates large agricultural vehicles.

Option B – Rural Collector with Fully Paved Shoulders

- This cross-section includes a paved, two-lane road, with a 1.0m buffer between the travel lanes, and on-road bike lanes. The road accommodates all modes of transportation, including trucks, agricultural vehicles, cyclists and pedestrians. Agricultural vehicles would be required to share the road platform with cyclists using the bike lanes and waiting for clear opportunities to pass.

Option C – Urban Collector Road with Cycle Tracks

- This urban cross-section utilizes the entire right-of-way to provide sidewalks, cycle tracks, and a fully paved roadway with curb and gutter. The roadway accommodates all modes of transportation, with the exception of agricultural vehicles, which would be required to use the existing Fox Lane access off Main Street to access farmlands adjacent to the extension of Heritage Road.

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Town of Kingsville
Heritage Road to Road 2 West
Municipal Class Environmental Assessment
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Slide 9 – Alternative Road Cross-Section – Option A

This slide displays a conceptual Option A - Rural Collector with Single Multi-Use Trail cross-section.

Slide 10 – Alternative Road Cross-Section – Option B

This slide displays a conceptual Option B - Rural Collector with Fully Paved Shoulders cross-section.

Slide 11 – Recommended Road Cross-Section

This slide displays the recommended road cross-section, Option C - Urban Collector Road with Cycle Tracks. Additional details on why this cross-section was determined to be Most Preferred is provided on Slide 16.

Slide 12 – Intersection Improvements at Heritage Road and Main Street

Two alternative intersection designs were considered for the Heritage Road and Main Street intersection; a signalized intersection and a roundabout. Both are displayed on this slide.

Slide 13 – Recommended Intersection

An evaluation of alternative intersection design options was completed and identified that a Signalized Intersection is preferred for the Heritage Road and Main Street intersection. Additional details on why the signalized intersection was determined to be Most Preferred is provided on Slide 16.

Slide 14 – Alternative Road Alignments

At PIC #1, an alignment for the extension of Heritage Road was presented. A detailed evaluation of alignment options was completed, and is summarized on this slide. Option 2 – Widen the existing Fox Lane to the East was selected as the recommended alignment.

Slide 15 – Recommended Design

As noted, the recommended road alignment is to *Widen Existing Fox Lane to the East.*

The recommended alignment shown was determined based on technical analyses and agreements and discussions with area property owners and developers. This alignment is approximate and will be refined as required during detailed design and following detailed field investigations. The alignment supports a safe, multi-modal corridor, makes best use of land available along the corridor in coordination with future land development, and accommodates existing and future traffic conditions within the Town.

Slide 16- Summary of Recommended Alternative

Rationale for the selection of the recommended alternative has been provided on this slide.

The ‘Widen Existing Fox Lane East’ alignment was selected for the following reasons:

- Aligns with existing south leg of Heritage Road intersection
- Makes best use of land available along the corridor in coordination with future land development
- Appropriate use of the existing Fox Lane road allowance as a suitable evolutionary upgrade to Fox Lane
- Other alignment options create misalignment issues with the Heritage Road intersection and generally require more land acquisition

The ‘Signalized’ intersection was selected for the following reasons:

- Provides a good level of service compared to a roundabout design
- Reduces infrastructure cost, land requirement and utility relocations compared to a roundabout design
- Avoids lengthy road closures, reducing impacts to area residents, and businesses during construction compared to roundabout construction

The ‘Urban Collector with Cycle Track’ cross-section was selected for the following reasons:

- Storm sewer with storm-water management facilities are introduced with an urban cross-section eliminating the need for large ditches / swales, managing surface water conveyance within the study area
- Allows for future cycle track and sidewalk to be added along the west side of the road in the future when development occurs
- Allows for cycle-track and sidewalk to be constructed behind curb-and gutter, creating a safer environment than on-road cycling facilities for this type of corridor
- Field entrances and crossing points will be provided along the route for continued agricultural use of the adjacent lands

Slide 17 – Potential Impacts and Proposed Mitigation Measures

A list of potential impacts as a result of the project, and proposed mitigation measures is provided on this slide. These impacts and mitigations will be further refined during this study and detailed design.

Slide 18 – Next Steps

Following this Public Information Centre, the Project Team will complete the next steps below:

- Review and respond to comments received
- Continue to engage Indigenous Communities, First Nations and Métis communities, and consult with the public and agencies
- Confirm the Preferred Design
- Prepare the Environmental Study Report
- Issue the Notice of Study Completion

The results of these next steps will be included in the Environmental Study Report, which will be made available for a 30-day public review period. The Environmental Study Report will summarize the study process and document the recommendations of this study.

Slide 17 – Thank you!

Thank you for participating in PIC #2 for the Town of Kingsville, Municipal Class EA for the Heritage Road to Road 2 study.

Your feedback is valuable and appreciated. Please provide comments by filling out the comment form or by contacting a member of the project team below by **August 27, 2023**:

Thank you again for your interest in the study!

Kingsville

Public Information Centre 2 Sign-In
Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study
Grovedale Arts & Culture Centre (103 Park Street, Kingsville) – Thursday July 27, 2023

Stantec

Name / Title	Address	Contact Information (Email/Phone)
NITHEN SAMUEL/ENV. [illegible]		
JOHN FRIESEN		
GEORGE SPOIALO		
Shawn Martinho		
Ross & Wendy Robinson		
Trudy & Jack Ware		
Rob McLiccN.		
WALTER BRANCO		
Rudy Mastronardi		
Adam Penner		

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. This information will be kept on file and may be included in study documentation, which will be made available for public review.

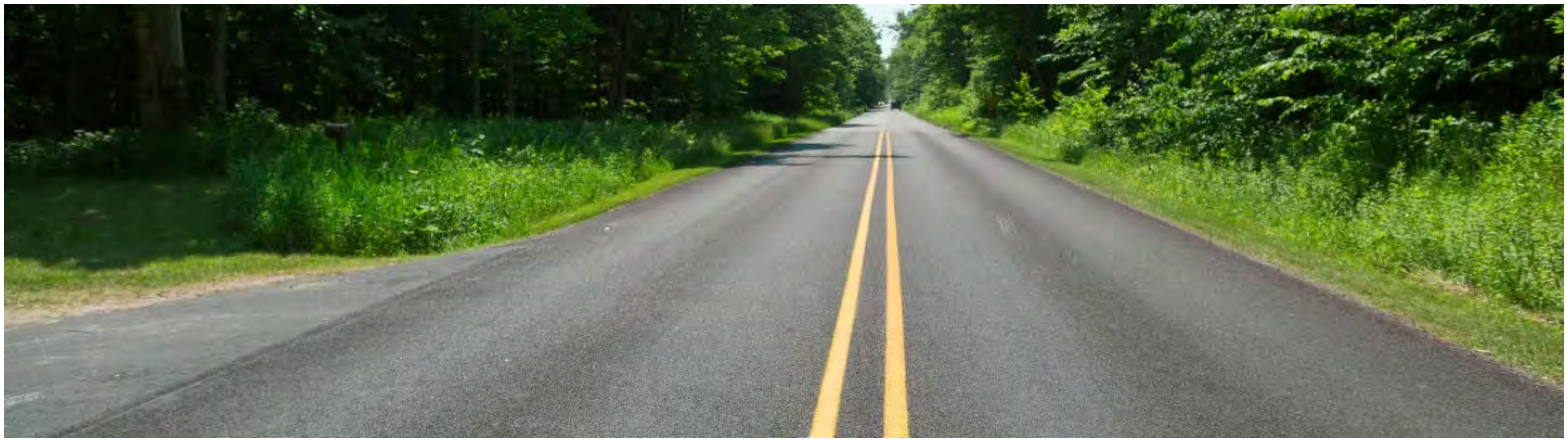
gsville

Public Information Centre 2 Sign-In
Town of Kingsville – Heritage Road to Road 2 West
Municipal Class Environmental Assessment Study
Grovedale Arts & Culture Centre (103 Park Street, Kingsville) – Thursday July 27, 2023

Stantec

Name / Title	Address	
Jackie + Nino Barraco		
Jack + Jane Fisher		
ADAM + LISA EDWARDS		
BRENT PATTERSON		
Steve & Erna Bujna		
[illegible] TEDMAN		
George Zwick		

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. This information will be kept on file and may be included in study documentation, which will be made available for public review.



West Side Collector Road

We're looking at options for extending Heritage Road to Road 2 West. This new collector road will alleviate traffic on Main Street and support growth in Kingsville. Other benefits include:

- Intersection improvements at Main and Heritage
- Improved active transportation connectivity
- Servicing lands in the southwest quadrant of Kingsville to help facilitate development on that side of the Town

We need to ensure that we meet the Environmental Assessment (EA) Act requirements, so we have begun a legislated Municipal Class Environmental Assessment process to help guide the decision-making for this infrastructure project.

Who pays for this?

Development charges will fund 90% of the road construction. General taxation, potential grants, etc., will support the remaining 10% of the project.

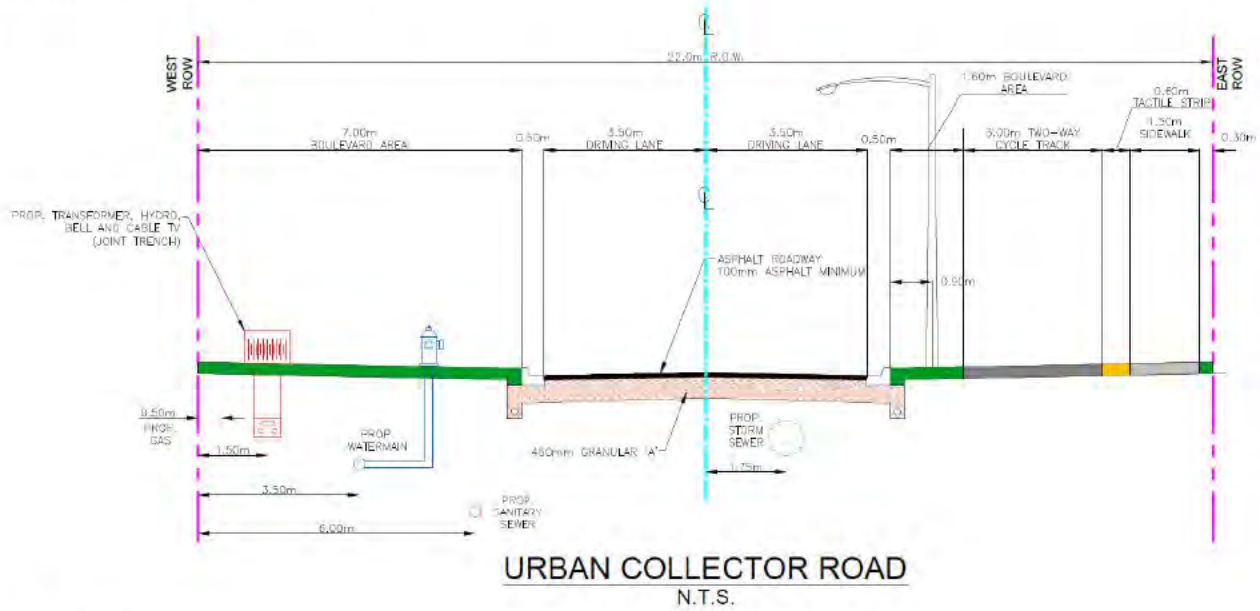
Study Area and Road Alignment

Below is a map of the study area showing the potential alignment of an extension of Heritage Road from Main Street to Road 2 West.


ROAD 2 WEST
THIS SEGMENT OF THE COLLECTOR ROAD TO BE DESIGNED BY OTHERS AND CONSTRUCTED AT A LATER DATE
PROPOSED COLLECTOR ROAD
PROPOSED CONNECTION
PROPOSED CONNECTION
MAIN STREET WEST (COUNTY RD. 20)
HERITAGE ROAD (COUNTY RD. 50)
LEGEND
PROPOSED WATERMAIN
PROPOSED STORM SEWER
PROPOSED SANITARY SEWER
PROPOSED RIGHT-OF-WAY LIMIT
PROPOSED CONCRETE SIDEWALK
PROPOSED CYCLE TRACK

Proposed Cross Section

Below is an image showing how this new road extension could look. Some proposed features include curbs, street lighting, a two-way cycle track, and a sidewalk.



Next Steps

We should complete the Class EA process near the end of 2023. Construction of underground servicing can begin in 2024 as long as all necessary approvals are received. Once underground servicing is complete, road construction begins.

What do you think of the proposal?

Do you have comments or questions about this new collector road? We'd love to hear from you or see you at an upcoming Public Engagement Centre. Feel free to connect with us virtually or in person.

Comment Section Questions

Comments

Tell us what you think of the proposed design.

You need to be signed in to comment in this Guest Book. Click here to Sign In or Register to get involved

How long before the final faze connecting to road 2 is completed and why is it not being done at the same time as the rest of the road. Will this be a roadway to nowhere so kids can use it as a drag strip. My guess is you have not secured all the land. Get this secured before you spend the money.

John B, 1 day ago

Collector road is definitely needed. With increase building expansion the downtown streets have become over congested. This will also keep the truck traffic from greenhouse operations and construction operations away from the downtown. This cost should not be put on general taxes but back on the large greenhouse operations who will benefit from this and also development charges.

John B, 1 day ago

Stop wasting money on a road we don't need
And stop raising property taxes

Dylan, 27 days ago

Stop spending so much money so you don't have to raise property taxes every year

Dylan, 27 days ago

Proposal looks good! When do we start using roundabouts at intersections considering they much more efficient and require less maintenance depending on how you design them. Considering that almost everything now a days is a bout climate and pollution why don't we consider getting ahead of the game and show that we are willing to innovate. Bike and walking lanes are designed into the project which is great! Thx!!

Gulius, 2 months ago

With the understanding that the intent is to not allow any residential driveways along this road (which could create a hazard for cyclists, most especially e-bike riders) and that the rear of the lots will be along the new road, we support the proposal 100%! Such a multi-modal road will be suitable for many different transportation modes and users. Tom Omstead for Share the Road - Essex County.

Tom O, 3 months ago

How long before the last segment would be completed after the main stretch is completed?
In other words how long will it be a road to nowhere??
It clearly states that it will be designed and constructed by an outside firm.

The watcher, 3 months ago

We will also need to put a traffic light or caution lights at both Heritage and the 2nd.

JaneD, 3 months ago

I think it is GREAT,no more traffic problems going East and the 2nd Con.will be completed going East !! My wife and my self support this 100%

Gunney`, 3 months ago

Page last updated: 24 Oct 2023, 08:02 PM

REGISTER to join the conversation today!

Who's Listening

Tim Del Greco

Senior Manager of Capital Projects and Engineering
Town of Kingsville

TD

Documents

Presentation for July 27th Public Information Meeting (13.6 MB) (pdf)

July 27th - Notice of Public Information Centre (294 KB) (pdf)

Key Dates

Second Public Information Centre
July 27 2023

Completion of Final EA Study Report
December 11 → December 22 2023

Class EA Project Lifecycle

Phase 1: Problem and Opportunity
Identifying problems and exploring opportunities.

Phase 2: Alternative Planning Solutions
Identify and evaluate feasible alternative solutions.

Phase 3: Alternative Design Concepts
Develop and evaluate design alternatives.

Phase 4: Environmental Study Report
Document this process in an Environmental Study Report and circulate for comment.

Phase 5: Implementation
Construction.

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Privacy Policy
Moderation Policy
Accessibility
Technical Support
Cookie Policy
Site Map

A.6 - Public Correspondence

Contact	Date	Comment	Draft Response/ Status
Public			
Barb Harwood	August 20, 2022 Email NOSC	Please put me on your email list to receive further notices regarding the long term transportation needs study for the town of Kingsville. I would like a format within which I could submit comments and ideas.	Added to project contact list.
Rudy Mastronardi	August 19, 2022 Email NOSC	Thank you for the notice. Please add me to the contact list to receive future notices.	**Email Response August 19, 2022:** Thank you for your interest in the study! You've been added to the contact list and you will receive all future notifications for this study.
	July 10, 2023 Email PIC 2	Thank you for the notice. Can you forward the most recent design concepts. **July 13, 2023:** In the past, I was able to review the most recent design before the public information session. Do you need permission from town admin?	**Email Response July 17, 2023:** Thank you for your interest in the Town of Kingsville, Heritage Road to Road 2 West MCEA study. The public information centre presentation materials will be available to the public on the Town's website starting July 27, 2023. The presentation will include the alternative design concepts for the Heritage Road alignment, the Heritage Road and Main Street intersection and road cross-section, and the overall recommended design for the study. Should you have any questions or concerns with the presentation at that time, please don't hesitate to reach out to a member of the project team.

Ken Neuman	August 18, 2022 Email NOSC	Could you please add me to the contact list for the Study of Heritage Road to Road 2 West?	Added to project contact list.
	September 20, 2022 Comment sheet PIC1	There is a large oak tree that is very old. It almost lines up with Palmer Drive. We have seen eagles in that tree. Could we save this tree?	
Michael & Susan Ross	August 20, 2022 Email NOSC	Please include us in contact list in future study reports, info sessions and future notices.	Added to project contact list.
Ken Kwiat	August 22, 2022 Email NOSC	Can you put me on the information list I live at my name is Kenneth Kwiat thanks.	**Email Response August 29, 2022:** Thank you for contacting me regarding the MCEA in Kingsville. We will add your information to the contact list.
Jackie Barraco	August 28, 2022 Email NOSC	I notice the new map for the connector road has Fox Lane included in the diagram. The above paragraph does not indicate property owners to be notified of any changes to their property. As you may not know, . It is a private lane that has a Private Lane sign, put there by the town. The south end of Fox Lane had a Private Lane sign but someone removed it.	**Town of Kingsville provided email response August 29, 2022.**

		My concern is that I am not being notified The road comes out east of Fox Lane. I'm curious to know why Fox Lane has been surveyed so many times? Does the town have something planned for Fox Lane? Fox Lane was created by farmers to allow the tractors to go from one field to another. The oil company also uses the lane, from the south entrance. When horse and buggy was around, the lane was used to avoid scaring the horses when the train went through. I would appreciate a response and to be kept abreast of further development to this new connector road. ERCA has been surveying as well. I'm hoping they can tell me what is going to happen to the flow of water from Division Rd to the creek	
	September 20, 2022 Comment Form PIC 1	- - Im hoping the road will NOT have overhead lights, curbs or sidewalk. Let's keep it paved from one side to the other – this is less expensive, better maintenance (trucks will be able to clear snow without worry of curbs). Only lights needed are at each end of road – no need to light the entire road. Lets save money, hydro and environment! - Road 2 E is – in my opinion – a waste of tax payer money. 54 lights in the 1.5km road. 2 farms and greenhouse within that area. curbs and sidewalks were not necessary – it's country NOT downtown. Again a light at each intersection is all that's necessary - Division Road to Graham. Division to Kratz has already been paved – No sidewalk – no curbs – no additional lights – PERFECT. Lets continue this way from Kratz to Graham - Fox Lane is a private lane. Town placed Private Lane sign at - - When and if collector road goes in, a gate should be installed - Farmers will not have a field to work in Therefore, no reason to keep the lane open.	**No response required – discussed at PIC.**

		- There is no house with Fox Lane address. - Heritage Road should have roundabout instead of lights. Those coming off Heritage Road wait a long time. Flow of traffic would be better, no stopping - better.	
	August 25, 2023 Email PIC 2	At the recent meeting at Grovedale House, there were many issues that were unclear. I am attaching a drawing of the connector road proposal with my comments. Please inform me what your thoughts are. *A comment form has been appended.*	
Sandra Zwiers	August 24, 2022 Email NOSC	Just reading the Southpoint Sun and see the notice about the class EA. I'd like to receive notices please. Is there a plan already established for how this road will connect in to development to the east Depending on what that looks like I'm sure I'll have some comments to submit. 😊 For what they're worth now, as a resident If consideration could be made to allow parking only on one side of the road at a time that would really help alleviate the congestion. I know the parking on Main in front of the church at the south end of Prince Albert has been reviewed before but I'd also like to request that parking on the north side of Main street in that section be removed and the road painting reconfigured to allow for a center turn lane. It's impossible to see oncoming traffic to make a left turn from Prince Albert when cars are parked in front and traffic backs up when someone is trying to make a left onto Prince Albert coming into town.	**Town of Kingsville provided email response August 24, 2022.**
Kyle Dyck	August 24, 2022 Email NOSC	I read the article on the Kingsville Times website regarding the environmental assessment and was hoping to be added to the contact list to receive future notices. Could you please help with this?	**Email Response August 24, 2022:** Thank you for contacting me about this project. We will add your name and information to the contact list for this project.
Jan Fisher	August 23, 2022 Email NOSC July 27, 2023:	Please add my name to your list of residents who wish to be kept up to date on the Environmental Assessment regarding Road 50 and Road 2. I am a resident of I would like to be advised of any meetings open to the public as well. Is the Grovedale open tonight for the information session or is the power still out there? Jan	Added to project contact list. **Email response July 28, 2023:** I apologize for missing your email last night.

	Email PIC		The Public Information Centre (PIC) was still held last night for the Heritage Road to Road 2 West study. The presentation materials are available online, on the Town's project website (LINK was provided) If you have any questions, please don't hesitate to reach out to a member of the project team. Thank you!
Steve Bujna	September 5, 2022 Email NOSC	I was told that you were one of two individuals to contact regarding the following request. I would like more information about the Environmental Study Report regarding Heritage Rd to Road 2 West and I am also requesting to be added to the contact list to receive future notices and information. Thank you very much for your assistance in this matter.	**Town of Kingsville provided email response September 6, 2022.**
	July 7, 2023 Email PIC 2	Thank you Sarah Have a wonderful w/e.	**No response required.**
Gregg McCready	September 8, 2022 Email NOSC	could you please add me to your list to receive updates and correspondence about the Fox Lane Development. We live at and are interested in the Development	**Town of Kingsville provided email response September 8, 2022.**
	September 20, 2022 Comment Sheet PIC 1	What is the status of current wells and wells not running in that area?	
Anonymous	September 20, 2022 Comment Sheet PIC1	Heritage Road to Road 2 West - Instead of 2 lanes, plan to allow possible future expansion for 3 lanes (centre bugger/turn lane) - This is a new build so allow for the space to give the town options 10-15 years down the road	**No Response Required**

Notice of Commencement

From: Er ckson, Kane
To: Lang, Sarah
Cc: Bartlett, Isaac; Hohner, Paula
Subject: FW: Fox Lane
Date: Monday, August 29, 2022 8:11:28 AM

Kane

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Monday, August 29, 2022 8 01 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: Fox Lane

Morning Kane, please add this email to the contact list, thanks

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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Please consider the environment before printing this email.

From: Jackie Barraco
Sent: August 28, 2022 12:32 PM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Fox Lane

How to Get Involved

A key element of the EA process is gathering comments from the public, stakeholders, First Nations, utilities, businesses and regulatory agencies. To share project details and progress with the public, two Public Information Centres (PICs) will be held throughout the duration of the study. Upon completion of the study, an Environmental Study Report will be prepared and made available for public review and comment.

Tim

Jackie Barraco, I notice the new map for the connector road has Fox Lane included in the diagram. The above paragraph does not indicate property owners to be notified of any changes perty.

As you may not know, It is a private lane that has a Private Lane sign, put there by the town. The south end of Fox Lane had a Private Lane sign but someone removed it.

My concern is that I am not being notified of what will happen
The road comes out east of Fox Lane.

I'm curious to know why Fox Lane has been surveyed so many times? Does the town have something planned for Fox Lane?

Fox Lane was created by farmers to allow the tractors to go from one field to another. The oil company also uses the lane, from the south entrance. When horse and buggy was around, the lane was used to avoid scaring the horses when the train went through.

I would appreciate a response and to be kept abreast of further development to this new connector road.

eying as well. I'm hoping they can tell me what is going to happen to the flow of water from Division Rd to the creek west

Jackie Barraco

From: Er ckson, Kane
To: Lang, Sarah
Cc: Hohner, Paula; Bartlett, Isaac
Subject: FW: Request to be Added to Contact List
Date: Tuesday, September 6, 2022 9:22:51 AM

Hi Sarah,

Can you add this person too please?

Thanks

Kane

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Tuesday, September 6, 2022 9:20 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: Request to be Added to Contact List

Hi Kane,

I responded to this resident, however can you please add their email to the contact list, thanks

Tim

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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If you are not the intended recipient, please destroy all copies of this email and notify the sender immediately.

Please consider the environment before printing this email.

From: Steve Bujna
Sent: September 5, 2022 8 03 PM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Request to be Added to Contact List

Hello Mr Del Greco

I was told that you were one of two individuals to contact regarding the following request
I would like more information about the Environmental Study Report regarding Heritage Rd to Road 2 West and I am also requesting to be added to the contact list to receive future notices and information

Thank you very much for your assistance in this matter

Best regards

From:	Erickson, Kane
To:	
Cc:	Tim Del Greco; Lang, Sarah; Hohner, Paula; Bartlett, Isaac
Subject:	RE: Town of Kingsville - Environtmental Assessment
Date:	Wednesday, August 24, 2022 9:45:16 AM

Hi Kyle,

Thank you for contacting me about this project. We will add your name and information to the contact list for this project.

Sincerely,

Kane Erickson, CD, P Eng
Transportation Engineer

Mobile: 519-859-5719
Kane.Erickson@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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From: Kyle Dyck
Sent: Wednesday, August 24, 2022 8:38 AM
To: Erickson, Kane <Kane.Erickson@stantec.com>
Subject: Town of Kingsville - Environtmental Assessment

Hello,

I read the article on the Kingsville Times website regarding the environmental assessment and was hoping to be added to the contact list to receive future notices.

Could you please help with this?

Thank you,

https://kingsvilletimes.ca/2022/08/notice-of-municipal-class-environmental-assessment-study-commencement/

From: Erickson, Kane
To: Lang, Sarah
Subject: FW: Environmental Assessment
Date: Wednesday, August 24, 2022 9:45:09 AM

From: Jan Fisher
Sent: Tuesday, August 23, 2022 8:16 PM
To: tdelgreco@kingsville.ca; Erickson, Kane <Kane.Erickson@stantec.com>
Subject: Environmental Assessment

Please add my name to your list of residents who wish to be kept up to date on the Environmental Assessment regarding Road 50 and Road 2. I am a resident of

I would like to be advised of any meetings open to the public as well.
Thank You,
Jan Fisher

From: Erickson, Kane
To: Lang, Sarah
Cc: Bartlett, Isaac; Hohner, Paula
Subject: FW: Long term transportation needs study
Date: Tuesday, August 23, 2022 8:51:28 AM

Thanks,

Kane

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Tuesday, August 23, 2022 8:26 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: Long term transportation needs study

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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From: Barb Harwood
Sent: August 22, 2022 9:12 PM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Re: Long term transportation needs study

Yes, please add me to that list

On Mon , Aug 22, 2022, 8:39 a m Tim Del Greco, <tdelgreco@kingsville ca> wrote:

> Good morning Barb,
>
> I m not sure if I completely understand your request?
>
> The Town just completed a new transportation master plan It will be subject to a 30 day public review starting August 31 On that day, you will be able to find it here - kingsville ca/ctmp
>
> There is no email list for the new transportation master plan anymore (there was during development)
>
> Separate from this plan, the Town is considering the extension of Heritage Road to Road 2 West There is an email list for this project Did you want to be added to this email list for notifications?
>
> Thanks
>
> Tim
>
> **Tim Del Greco, P.Eng.**
> **Manager of Engineering**
> **The Corporation of the Town of Kingsville**
> **2021 Division Road North**
> **Kingsville, Ontario N9Y 2Y9**
> **Phone: (519) 733-2305**
> **Web: www kingsville ca**
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From: Barb Harwood <
Sent: August 20, 2022 10:41 AM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Long term transportation needs study

Please put me on your email list to receive further notices regarding the long term transportation needs study for the town of Kingsville I would like a format within which I could submit comments and ideas
Thank you

From:	Erickson, Kane
To:	
Cc:	Tim Del Greco; Bartlett, Isaac; Hohner, Paula; Lang, Sarah
Subject:	RE:
Date:	Sunday, August 28, 2022 8:19:53 PM

Hi Kenneth,

Thank you for contacting me regarding the MCEA in Kingsville. We will add your information to the contact list.

Thank you,

Kane Erickson, CD, P Eng
Transportation Engineer

Mobile: 519-859-5719
Kane.Erickson@stantec.com

Stantec
600-171 Queens Avenue
London ON N6A 5J7

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From: Ken Kwiat
Sent: Monday, August 22, 2022 9:07 PM
To: Erickson, Kane <Kane.Erickson@stantec.com>
Subject:

Can you put me on the information list I live at name is Kenneth kwiat thanx

From: Lang, Sarah
To:
Subject: RE: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA
Date: Friday, August 19, 2022 11:10:00 AM

Hi Rudy,

Thank you for your interest in the study! You've been added to the contact list and you will receive all future notifications for this study.

Thanks,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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From: Rudy Mastronardi
Sent: Friday, August 19, 2022 10:37 AM
To: Lang, Sarah <Sarah.Lang@stantec.com>
Subject: Re: Notice of Study Commencement - Town of Kingsville, Heritage Road to Road 2 West, MCEA

Hi Sarah
Thank you for the notice. Please add me to the contact list to receive future notices.

Rudy Mastronardi

On Fri, Aug 19, 2022 at 9:51 AM Lang, Sarah <Sarah.Lang@stantec.com> wrote:

> Good Morning,
>
> Please find the attached Notice of Study Commencement for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment (EA). The Town has initiated the EA to meet long-term transportation needs within the community. The study will involve the extension of Heritage Road to Road 2 west, two local road connecting links, and intersection improvements.
>
> This study is being undertaken in accordance with the requirements for Schedule 'C' projects within the Municipal Class EA document (2000, as amended), under the Ontario Environmental Assessment Act.
>
> If you would like more information about the study, or would like to be added to the contact list to

receive future notices, please contact a member of the project team.

Thank you,

Sarah Lang
Environmental Planner
sarah.lang@stantec.com

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From: Er ckson, Kane
To: Lang, Sarah
Subject: FW: FOX lane
Date: Thursday, September 8, 2022 9:59:48 AM

Kane

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Thursday, September 8, 2022 8:34 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: FOX lane

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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From: Gregg Mccready
Sent: September 8, 2022 8:30 AM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: FOX lane

Good morning Tim , could you please add me to your list to receive updates and correspondence about the Fox Lane Development We live at and are interested in the Development as it is in our back yard
Thank You
Gregg Mccready

F om
To [illegible] [illegible]
Cc [illegible]
Subject W S udy of He tage Road to Road 2 We t
Date nday August 1 2022 8 40 14 AM

Message ---
r om x m De G ece> de g ecoijck ngev e ca>
Sent F day August 19 2022 8 11 AM
To E dson Kane <Kane E dson@ju an ec com>
Subject FW Study of He tage Road to Road 2 West

H Kane

A c you ab e o add th s nd v dua o you ema ma ng x ?

Thanks

T m De G ece P Eng
Manage of Eng nee ng
The Co po at on of he Town of K ngev e
2021 D v s on Road Nor th
K ngev e On a o N9Y 2Y9
Phone (519) 733-2305
Web h tps cam01 safe nks p o ect on out ook com ?
u =h ttp%3A%2F%2Fwww k ng v e ca%2Fdcamp data=05%7C01%7CSa ah Lang%40stantec com%7C1438dea05415482eea1c08da81dff58b%7C413cfdf2c219a4692974f3 2b4d8028 1e7%7C0%7C0%7C63796509613958103 3%7CUnknown%7CTWFpbGZsb3d8eyJWIjo MC4wLjAwMDA LCJQIjo V2 sInEel LCJBT I6Ik1haWw LCJXVCI6Mn0%3D%7C3000%7C%7C%7C&amp sda a= zKLO6InT6eALSkc2DRDAYFmeF s%2B2HB3mKn6Axp Wc%3D&amp ese ved=0

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If you a e not the n ended ec p ent p ease dest oy a cop es of th s ema and not fy he sende mmed a e y P ease cons de he env onment befo e p nt ng th s ema

---O g na Message ---
F om Ken Nezma
Sent August 18 2022 n 39 PM
To T m De G ece >dc g ecoijck ng v e ca>
Subject Study of He tage Road to Road 2 West

H T m
Cou d you p ease add me to he con act st fo he S udy of He tage Road o Road 2 West?

Sent f om my Pad

From: Er ckson, Kane
To: Hohner, Paula; Lang, Sarah
Cc: Bartlett, Isaac
Subject: FW: Heritage Road study
Date: Monday, August 22, 2022 9:58:24 AM

Thanks,

Kane

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Monday, August 22, 2022 8:40 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: Heritage Road study

Morning Kane,

Can you please add their email to the list... thanks

Tim

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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From: mross
Sent: August 20, 2022 10:43 AM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Heritage Road study

Please include us in contact list in future study reports, info sessions and future notices

Regards

Sent from my Galaxy

From: Er ckson, Kane
To: Lang, Sarah
Cc: Hohner, Paula; Bartlett, Isaac
Subject: FW: Heritage Road to Road 2 West EA
Date: Wednesday, August 24, 2022 12:46:09 PM
Attachments:

From: Tim Del Greco <tdelgreco@kingsville ca>
Sent: Wednesday, August 24, 2022 11:48 AM
To: Erickson, Kane <Kane Erickson@stantec com>
Subject: FW: Heritage Road to Road 2 West EA

Tim Del Greco, P.Eng.
Manager of Engineering
The Corporation of the Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9
Phone: (519) 733-2305
Web: www.kingsville.ca

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From: Sandra Zwiers
Sent: August 24, 2022 8:40 AM
To: Tim Del Greco <tdelgreco@kingsville ca>
Subject: Heritage Road to Road 2 West EA

Good morning Tim!
How are you? Trusting things are well for you in Kville
Just reading the Southpoint Sun and see the notice about the class EA I d like to receive notices please
Is there a plan already established for how this road will connect in to development to the east
Depending on what that looks like I m sure I ll have some comments to submit
For what they re worth now, as a resident on the on street parking on Palmer is a problem If consideration could be made to allow parking only on one side of the road at a time that would really help alleviate the congestion
I know the parking on Main in front of the church at the south end of Prince Albert has been reviewed before but I d also like to request that parking on the north side of Main street in that section be removed and the road painting reconfigured to allow for a center turn lane It s impossible to see oncoming traffic to make a left turn from Prince Albert when cars are parked in front and traffic backs up when someone is trying to make a left onto Prince Albert coming into town

Thanks for letting me offer my two cents!
sz

Public Information Centre 1

Jackie [redacted]

[redacted]

In Roping the road WILL NOT have overhead lights, curbs or sidewalk. Let's keep it paved from one side to the other - this is less expensive, better maintenance (trucks will be able to clear snow without worry of curbs!) Only lights needed are at each end of road - no need to light the entire road. Let's save money, hydro and environment!

⇒ Rd 2 E is - in my opinion - a waste of tax payer money - 54 lights in the 1.5 Km road. 2 Farms and greenhouse within that area. Curbs + sidewalk were not necessary - it's country NOT downtown again a light at each intersection is all that's necessary

⇒ Division to Graham: Division to Kratz was already been paved - No sidewalk - No curbs - No additional lights - PERFECT Let's continue this way from Kratz to Graham.

[redacted]

[redacted]

When and if Collector Road goes in, a gate should be installed.

[redacted]

neighbour to west with farm land.
Therefore, no reason to keep the lane open.
There is no house with Fox Lane address.

[redacted]

Heritage Rd should have turn around instead of lights. Those coming off Heritage wait a long time. Flow of traffic would be better

① HERITAGE ROAD TO ROAD 2 WEST

- INSTEAD OF 2 LANES PLAN TO ALLOW POSSIBLE FUTURE EXPANSION FOR 3 LANES (CENTRE BUFFER/TURN LANE)
- THIS IS A NEW BUILD SO ALLOW ~~(14)~~ FOR THE SPACE TO GIVE THE TOWN OPTIONS 10-15 YRS DOWN THE ROAD.

② SOME SUGGESTION FOR R2 WEST

BETWEEN DIVISION + MCCAIN.

THERE IS A LARGE OAK TREE THAT IS VERY OLD. IT ALMOST LINES UP WITH PALMER DRIVE.

WE HAVE SEEN EAGLES IN THAT TREE.

COULD WE SAVE THIS TREE?

- WHAT IS THE STATUS OF CURRENT WELLS AND WELLS NOT RUNNING IN THAT AREA.

[redacted]

Public Information Centre 2

From:
To: Micks, Sarah;

Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: Re: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date: Monday, August 14, 2023 1:10:50 PM
Attachments: Point of view for connector road.docx

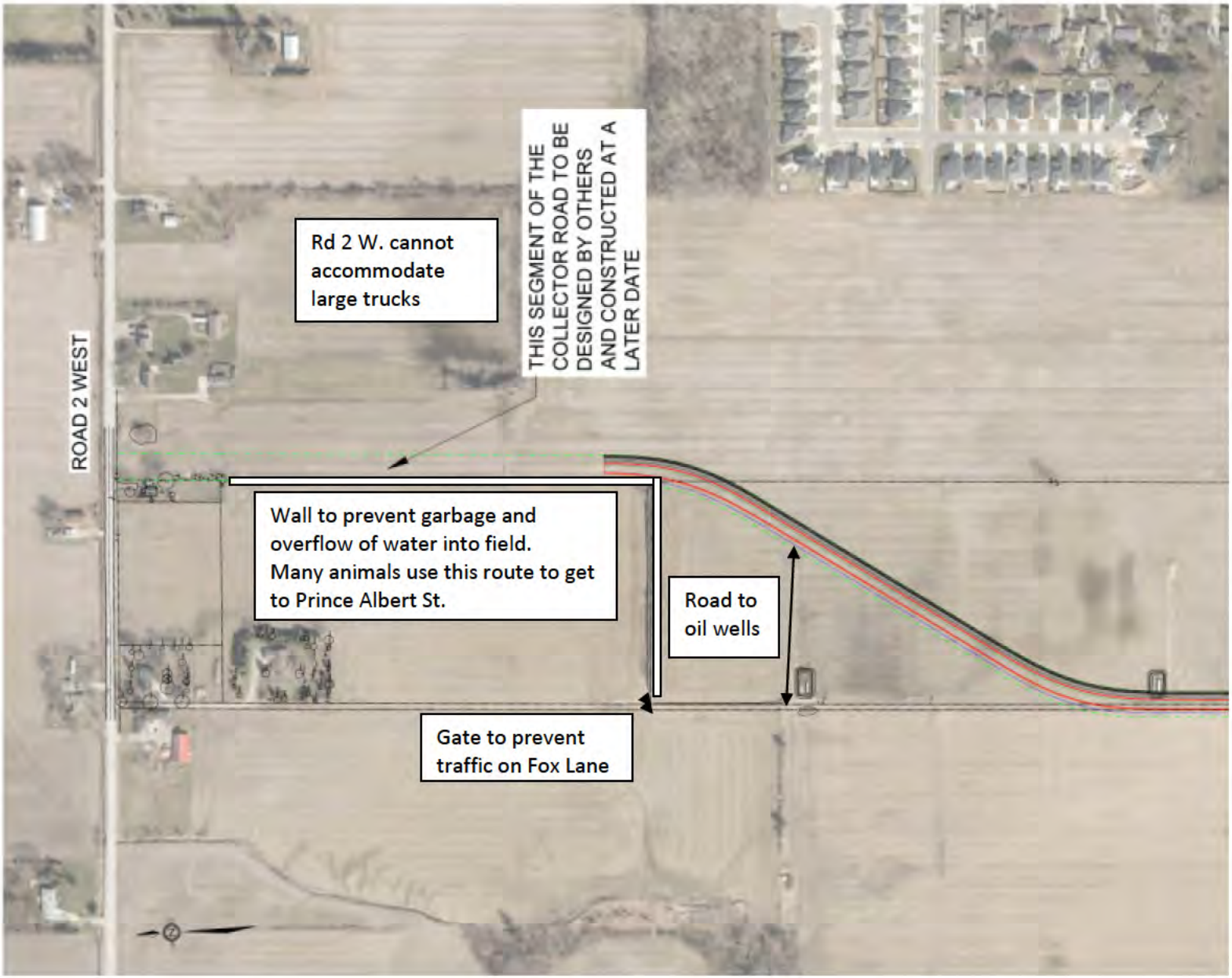
At the recent meeting at Grovedale House, there were many issues that were unclear.
I am attaching a drawing of the connector road proposal with my comments.
Please inform me what your thoughts are

Jackie Barraco

Virus-free.www.avg.com

On Fri, Jul 7, 2023 at 12:15 PM Micks, Sarah <Sarah.Micks@stantec.com> wrote:

> Hello,
>
> Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.
>
> The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.
>
> Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
>
> Thank you,
>
> **Sarah Micks**
>
> Environmental Planner
> sarah.micks@stantec.com
>
> Direct: 519-432-4292



Road 2 West was not built to have high traffic of large/semi trucks. From connector road to Division will have to be built to accommodate. $$$$$$$

Road 2 and connector roads are rural roads, NO NEED for sidewalks or over-head lights!

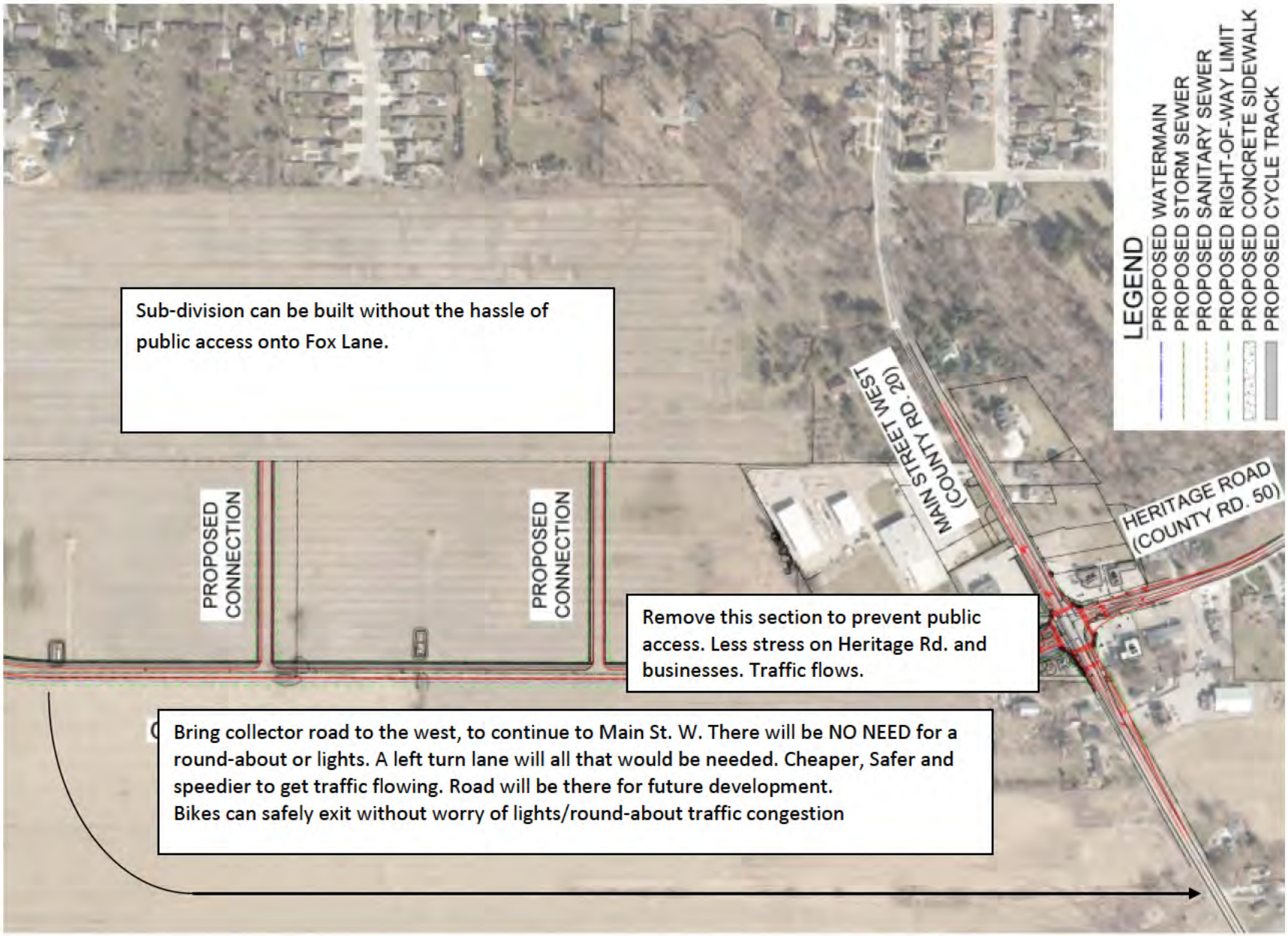
Bike paths should be separate from connector road. Safer for them and the auto traffic.

Overhead lights at intersections ONLY

Water flows from Division Rd. to the west. A wall at beginning of connector road will help prevent flooding and help to keep garbage getting

A road for the oil trucks to get to the oil wells will be needed.

The private lane section, from the north to the oil wells, does not accommodate the large trucks. A gate needs to be put in place to prevent public access.



Town needs to make sure GPS is taken off site so traffic does not use Fox Lane.

North end of Fox Lane is not safe for vehicles due to road is full of ruts, caused by vehicles

The beginning of Fox Lane is the driveway for two homes. No one else would put up with traffic in their driveway.

From: Micks, Sarah
To:
Kim4Kingsville@gmail.com; Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: RE: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date: Thursday, September 7, 2023 2:54:00 PM
Attachments: Heritage Road to Road 2 West - Responses to Jackie Barraco August 14 Comments.pdf

---

Good Afternoon Jackie,

Thank you for providing your comments in relation to the Town of Kingsville, Heritage Road to Road 2 West MCEA study. Please refer to the attached document for responses to the comments received on August 14th.

Should you have any further questions, please contact Tim Del Greco tdelgreco@kingsville.ca.

Thank you,

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

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From: Jackie Barraco
Sent: Monday, August 14, 2023 1:10 PM
To: Micks, Sarah <Sarah.Micks@stantec.com>;

Cc: Tim Del Greco <tdelgreco@kingsville.ca>; Erickson, Kane <Kane.Erickson@stantec.com>; Hohner, Paula <Paula.Hohner@stantec.com>; Bartlett, Isaac <isaac.bartlett@stantec.com>
Subject: Re: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

At the recent meeting at Grovedale House, there were many issues that were unclear.
I am attaching a drawing of the connector road proposal with my comments.
Please inform me what your thoughts are

Jackie Barraco

Virus-free.www.avg.com

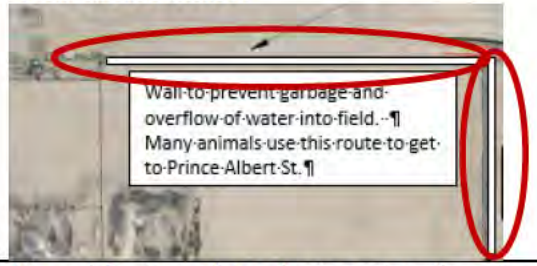
On Fri, Jul 7, 2023 at 12:15 PM Micks, Sarah <Sarah.Micks@stantec.com> wrote:

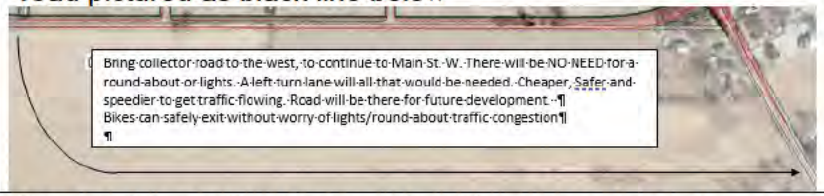
> Hello,
>
> Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.
>
> The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.
>
> Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
>
> Thank you,
>
> **Sarah Micks**
> Environmental Planner
> sarah.micks@stantec.com
> Direct: 519-432-4292
>
> Stantec
>
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Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Comment #	Comment Received	Response
1	Rd 2 W. cannot accommodate large trucks	Road 2 West is outside of the scope of this study, though it can be noted that Road 2 West is designed as a collector road. The operations of Road 2 West will continue to be monitored by the Town.
2	Water flows from Division Rd. to the west. A wall at beginning of connector road will help prevent flooding of the farm and help to keep garbage getting on the farm. Wall to prevent garbage and overflow of water into field. Many animals use this route to get to Prince Albert St. *wall circled below* 	Erecting a barrier to prevent garbage and overflow of water into the field and disrupt natural animal habitat is not recommended as part of this study. Stormwater management measures are being incorporated into the design of this project to ensure proper systems are in place to collect and manage excess stormwater (i.e., swales, stormwater management pond, etc.).
3	A road for the oil trucks to get to the oil wells will be needed. Road to oil wells *road circled below* 	Access to the oil wells is being discussed with the respective property owner and operating company, as required.
4	The private lane section, from the north to the oil wells, does not accommodate the large trucks. A gate needs to be put in place to prevent public access. Gate to prevent traffic on Fox Lane *gate circled below. South of wall*	During the next phase of this study (detail design phase), appropriate signage and safety features will be identified and implemented along the new collector road. Currently there is no intent to provide a new gate on the existing Fox Lane.

		
5	Sub-division can be built without the hassle of public access onto Fox Lane.	The use of the Fox Lane corridor for this new collector road was identified by the Town during the previous phase of this project known as the planning phase. It was presented in the Town's Comprehensive Transportation Master Plan (CTMP) that was completed in 2022. The recommendations being made as part of this Municipal Class EA align with the previously approved CTMP.
6	Bring collector road to the west, to continue to Main St. W. There will be NO NEED for a round-about or lights. A left turn lane will all that would be needed. Cheaper, Safer and speedier to get traffic flowing. Road will be there for future development. Bikes can safely exit without worry of lights/round-about traffic congestion *road pictured as black line below* 	See response above, as this project is aligned with the Town's CTMP.
7	Remove this section to prevent public access. Less stress on Heritage Rd. and businesses. Traffic flows. 	This access to Main Street West provides for a logical extension to Heritage Road which optimizes traffic operation at the future intersection to accommodate the future development anticipated adjacent to the new collector road. The proposed route has been determined by the Town's CTMP to address future growth in the town and provides an alternative for downtown traffic along Division Road and Main Street

8	Road 2 West was not built to have high traffic of large/semi trucks. From connector road to Division will have to be built to accommodate. $$$$$$$	Road 2 West is outside of the scope of this study, though it can be noted that Road 2 West is designed as a collector road. The operations of Road 2 West will continue to be monitored by the Town.
9	Road 2 and connector roads are rural roads, NO NEED for sidewalks or over-head lights!	The Town is focused on providing a safe and accessible multi-modal transportation that enhances community connections, increases efficiency, and prioritizes sustainability, while accommodating future growth and development. Implementation of sidewalks and illumination will be designed and constructed to follow the accessibility standards required for a new collector road like this one..
10	Bike paths should be separate from connector road. Safer for them and the auto traffic.	The proposed cross-section for this study includes a two-way cycle track, physically separated from the roadway by a curb and gutter and a boulevard.
11	Overhead lights at intersections ONLY	The implementation of streetlights is proposed to follow the Town's policies, by-laws, standards and guidelines in combination with the industry's best practices in Canada for roadway illumination.
12	Town needs to make sure GPS is taken off site so traffic does not use Fox Lane.	During detail design, proper signage and safety features will be identified and implemented along the new road.
13	North end of Fox Lane is not safe for vehicles due to road is full of ruts, caused by vehicles	Regular vehicular traffic will not use Fox Lane in its existing condition and configuration. Construction must be undertaken to build the new cross-section before the new collector road is open to the public.
14	The beginning of Fox Lane is the driveway for two homes. No one else would put up with traffic in their driveway.	The Town and the design team are in discussions with the impacted property owners at Fox Lane and Main Street West as this study progresses.

F om

bject
Date day July 28 2023 10 42 24 AM

-- --Original Message-----
From M cks Sarah
Sent Fr day July 28 2023 9 51 AM
To Jan Fishe
Subject RE Into.sessoon

Good Morn ng

I apologize for missing your email last n ght.

The Public Information Centre PIC) was still held last n ght for he Heri age Road to Road 2 West study. The presentat on materials are a a lable online on the Town's p oject website ht ps /can01 safel nks.pro ect on.ou look.com/?url=ht ps%3A%2F%2Fha eyoursaykings ille.ca%2Fwest-side-collector-road&data=05%7C01%7CRachel.Young2% 0stantec com%7C69bec7d3635f 27fd0c508db878da06%7C 15c6f2c219a 69297d3f2b d80281e7%7C0%7C0%7C638261521 3 307030%7CUnknown%7CTWFpbGZsb3dSeyJWIjoiMC wLjAwMDAiLCJQIjoiV2luMzIiLCJBTI0tIkJhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=YqRghtyyN2yt3ZHNIgsnYolgJGhLn7Wc75jqSwi aDs%3D& eser cd=0

If you ha e any quest ons please don't hesitate to reach out to a member of the pro ect team.

Thank you!

Sarah Micks
En ironmental Planner
sarah micks@s antec.com
D rect 519- 32- 292

Stan ec

-- --Original Message-----
From Jan Fishe
Sent Thu sday ,tuty ,z ,0l2.s > > PM
To M cks Sarah <Sarah.M cks@s antec.com>
Subject Info.session

Is the Gro edale open tonight for the information sess on or is the power sti l out the e?
Jan

Sent from my Pad
Caut on Th s email orig nated from outside of Stantec. Please take extra precaution.

Atten ion Ce courriel pro est de l'ex é ieur de Stan ec. Veui lez prendre des précautions supplémentaires.

Atención Este correo elec rónico pro iene de fue a de Stan ec. Por fa or tome precauciones adicionales.

From: Micks, Sarah
To:
Cc: Tim Del Greco; Erickson, Kane; Hohner, Paula; Bartlett, Isaac
Subject: RE: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA
Date: Monday, July 17, 2023 9:17:00 AM

Hello Rudy,

Thank you for your interest in the Town of Kingsville, Heritage Road to Road 2 West MCEA study.

The public information centre presentation materials will be available to the public on the Town's website starting July 27, 2023. The presentation will include the alternative design concepts for the Heritage Road alignment, the Heritage Road and Main Street intersection and road cross-section, and the overall recommended design for the study. Should you have any questions or concerns with the presentation at that time, please don't hesitate to reach out to a member of the project team.

Thank you!

Sarah Micks
Environmental Planner
sarah.micks@stantec.com
Direct: 519-432-4292

Stantec

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Please consider the environment before printing this email.

From: Rudy Mastronardi
Sent: Thursday, July 13, 2023 8:28 AM
To: Micks, Sarah <Sarah.Micks@stantec.com>
Subject: Re: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Hi Sarah
In the past, I was able to review the most recent design before the public information session. Do you need permission from town admin?

Rudy

On Fri, 7 Jul 2023 at 15:17, Rudy Mastronardi < wrote:

> Hi Sarah
> Thank you for the notice. Can you forward the most recent design concepts.
>
> Thank you
> Rudy Mastronardi

On Fri, Jul 7, 2023 at 12:15 PM Micks, Sarah <Sarah.Micks@stantec.com> wrote:

> Hello,
>
> Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.
>
> The second PIC is being held to present the evaluation of alternative design concepts and the recommended design for the study. The PIC will be in-person at **the Grovedale Arts & Culture Centre (103 Park Street, Kingsville, ON), on Thursday, July 27, 2023 from 5:00pm to 7:00pm**. The PIC materials will also be available on the Town's website for your review on **July 27, 2023**, www.kingsville.ca.
>
> Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
>
> Thank you,
>
> **Sarah Micks**
> Environmental Planner
> sarah.micks@stantec.com
> Direct: 519-432-4292
>
> Stantec
>
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> **Please consider the environment before printing this email.**

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Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

Micks, Sarah

From: Steve Bujna
Sent: Friday, July 7, 2023 1:25 PM
To: Micks, Sarah
Subject: Re: Notice of Public Information Centre 2 - Town of Kingsville, Heritage Road to Road 2 West MCEA

Thank you Sarah
Have a wonderful w/e.
Regards
Steven Bujna

On Fri, Jul 7, 2023 at 12:15 PM Micks, Sarah <Sarah.Micks@stantec.com> wrote:

> Hello,
>
> Please find the attached Notice of Public Information Centre (PIC) 2 for the Town of Kingsville, Heritage Road to Road 2 West, Municipal Class Environmental Assessment study. This study involves the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements.
>
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>
> Please contact a member of the project team identified on the attached Notice if you have any questions, comments or concerns.
>
> Thank you,
>
> **Sarah Micks**
>
> Environmental Planner
> sarah.micks@stantec.com
>
> Direct: 519-432-4292
>
> Stantec

Appendix B - Stage 1 Archaeological Assessment

STAGE 1 ARCHAEOLOGICAL ASSESSMENT: MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, CONSTRUCTION OF A WEST SIDE COLLECTOR ROAD, KINGSVILLE, ONTARIO

Part of Lot 3, 4 and 5, Concession 1 Western Division, and Lot K, Concession 2 Western Division, Geographic Township of Gosfield, now Town of Kingsville, Essex County, Ontario.

April 3, 2023

Prepared for:
Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9

Prepared by:
Stantec Consulting Ltd.
600-171 Queens Avenue
London, Ontario N6A 5J7

Licensee: Darren Kipping
License Number: P422
Project Information Form Number:
P422-0017-2022
Project Number: 165001284

ORIGINAL REPORT

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by the Town of Kingsville (the Town) to complete Stage 1 archaeological assessment to support the Municipal Class Environmental Assessment (Class EA) of a West Side Collector Road (the Project) in the Town of Kingsville. The Class EA is being completed to support a proposed collector road, i.e., an extension of Heritage Road between County Road 20 and Municipal Road 2, to provide service to future local roads as part of a future development in a greenfield setting.

This Stage 1 archaeological assessment was undertaken by Stantec on behalf of the Town as part of the notice of commencement and preliminary planning phases for the Project's Class EA requirements for a Schedule "C" project under the *Ontario Environmental Assessment Act* (Government of Ontario 1990a). The Stage 1 archaeological assessment was conducted under Project Information Form number P422-0017-2022, issued to Darren Kipping, MA by the Ministry of Citizenship and Multiculturalism (MCM). The study area for the Project encompasses approximately 54.2 hectares (ha) and includes existing municipal road rights-of-way (RoW), gravel shoulders, drainage ditches, gravel and asphalt laneways, residential areas, scrubland, and agricultural fields. The study area is located in parts of Lot 3, 4 and 5, Concession 1 Western Division, and Lot K, Concession 2 Western Division, Geographic Township of Gosfield, now Town of Kingsville, Essex County, Ontario (Figure 1). A property inspection of the study area was completed on August 10, 2022.

The Stage 1 archaeological assessment of the study area for the Project determined that much of the study area, approximately 84.4%, retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for any portion of the Project's anticipated construction activities which impact an area of archaeological potential.**

The Stage 1 archaeological assessment also determined that a portion of the study area, approximately 15.6%, retains low to no archaeological potential due to deep and extensive modern disturbance and/or previous archaeological assessment (i.e., TAI 2018). In accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for portions of the study area which impacts a previously surveyed area.**

Full and detailed recommendations are provided in the body of the report.

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

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

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Project Personnel

Project Manager:	Kane Erickson, CD, P. Eng.
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Licensed Field Director:	Darren Kipping, MA (P422)
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Quality Review:	Parker Dickson, MA (P256)
Independent Review:	Tracie Carmichael, BA, B.Ed. (R140)

Acknowledgements

Proponent Contact:	Time Del Greco, Manager of Engineering, Town of Kingsville
Ministry of Citizenship and Multiculturalism:	Robert von Bitter, Archaeological Data Coordinator
Caldwell First Nation:	Zack Hamm, Environmental and Consultation Manager
Chippewas of the Thames First Nation:	Fallon Burch, Consultations Coordinator

1 Project Context

1.1 Development Context

Stantec Consulting Ltd. (Stantec) was retained by the Town of Kingsville (the Town) to complete Stage 1 archaeological assessment to support the Municipal Class Environmental Assessment (Class EA) of a West Side Collector Road (the Project) in the Town of Kingsville (Figure 1). The Class EA is being completed to support a proposed collector road, i.e., an extension of Heritage Road between County Road 20 and Municipal Road 2, to provide service to future local roads as part of a future development in a greenfield setting.

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1.1.1 OBJECTIVES

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

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

To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historical, and environmental literature pertaining to the study area.
- A review of the land use history, including pertinent historical maps.
- An examination of the MCM's *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.
- A query of the MCM's *Ontario Public Register of Archaeological Reports* to identify previous archaeological assessments completed within 50 metres of the study area.
- A property inspection of the study area by a licensed archaeologist.

Permission to access the study area to conduct a property inspection was provided by the Town.

1.2 Historical Context

1.2.1 POST-CONTACT INDIGENOUS RESOURCES

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

The post-contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois in the mid-17th century and the subsequent arrival of Algonkian speaking groups from northern Ontario at the beginning of the 18th century (Konrad 1981; Schmalz 1991). By 1690, Ojibwa speaking people had begun moving south into the lower Great Lakes basin. The Indigenous economy since the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting (Konrad 1981; Rogers 1978). Numerous Indigenous groups and communities are associated with the post-contact occupation of southern Ontario and the general area of the Project.

At the turn of the 16th century, the region of the study area is documented to have been occupied by the "Western Basin Tradition" archaeological culture (see Section 1.3.2). Following the turn of the 17th century, the region of the study area is understood to have been within the territory of the "Fire Nation", an Algonquian group occupying the western end of Lake Erie. It is argued, however, that the Atawandaron (also called the Neutral by the English, and Neutre by the French) expanded extensively westward, displacing the Fire Nation and occupying the region of modern Chatham-Kent (Lennox and Fitzgerald 1990:418-419). It is debated whether the Fire Nation was descendent from the archaeologically described Western Basin Tradition, or if they migrated into the western part of Lake Erie, displacing a previous Indigenous culture (Murphy and Ferris 1990:193-194). Historians understand that the displaced Fire Nation moved across the St. Clair and Detroit Rivers into what is modern day lower Michigan and their populations are synonymous with the later historic Kickapoo, Miami, Potawatomi, Fox and Sauk (Heidenreich 1990: Figure 15.1). Bkejwanong (Walpole Island) First Nation (WIFN) tradition states that the Three Fires (a political confederacy, constituted of the Pottawatomi, the Ojibwa, and Odawa) have occupied the delta of the St. Clair River and the surrounding region continually (WIFN n.d.) for thousands of years. In 1649, the Seneca with the Mohawk led a campaign into southern Ontario and dispersed the resident nations and the Seneca used the lower Great Lakes basin as a prolific hinterland for beaver hunting (Heidenreich 1978; Trigger 1978:345).

The study area falls within the traditional territory of the WIFN, the Aamjiwnaang (Sarnia) First Nation (Aamjiwnaang First Nation), the Wiiwkwedong and Aazhoodena (Kettle Point and Stony Point) First Nation and the Deshkaan Ziibing Anishnaabeg (Chippewas of the Thames First Nation) (COTTFN), and the Zaaga'iganiniwag (Caldwell First Nation). Some populations of Wyandot (a nation of historically amalgamated Tionontati and Huron-Wendat populations) also had moved to the region of Lake St. Clair at the turn of the 18th century and resided with the Three Fires (Tooker 1978:398).

In Essex County, and specifically in the Windsor region, a splinter group of Odawa settled in the area (Cultural Resource Management Group Limited *et al*. 2005:2-14 to 2-15). Also, the surviving remnants of the Huron and Petun were settling in the Windsor region as the Wyandot, exhibiting continuities with their

16th and 17th century predecessors from the Midland and Blue Mountain regions (Garrad 2014; Steckley 2014). Given the amalgamated nature of the Wyandot people, sometimes one of the contributing Indigenous peoples was recognized over another, hence the Wyandot were known as Huron in the Windsor region (Garrad 2014:16-54). Therefore, the Wyandot settlement in the Windsor region is commonly referred to as the "Huron Village" and related place names survive in Windsor today, such as Huron Church Road (but also note Wyandotte Street).

Despite the dispersal and movement of Indigenous groups throughout southern Ontario during the 17th and 18th centuries, archaeologically they can be characterized by continuity with their pre-contact Indigenous counterparts. These peoples still maintained a Terminal Woodland archaeological culture albeit with some features of European material culture. While there was cultural and social change occurring due to contact with European colonial powers, there was equally a definite persistence of Indigenous socio-cultural practices since these groups were not so profoundly affected by European contact that they left their former lifeways behind (Ferris 2009).

Under British administration in the 19th century, the various Indigenous groups were divided into separate bands. The Anishinaabe included the western Algonquian peoples, among them the Chippewa and the Odawa. Until the 18th century, the central Algonquian-speaking peoples, including the Potawatomi, were located in the Michigan Peninsula (Blackbird 1887). In the middle of the18th century, the Chippewa were located on the south shores of Lake Huron, the east shores of Georgian Bay, and on the west end of Lake Ontario. Indigenous peoples and their communities continue to play a large role in the occupation of the study area and its environs.

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

Following the American Revolutionary War, Britain focused on the settlement of European immigrants into what became the province of Upper Canada in 1791. To enable widespread settlement, the British government (the Crown) negotiated a series of treaties with Indigenous peoples. Figure 3 provides a map of southwestern Ontario illustrating early treaties and purchases (Government of Canada n.d.). One of the earliest treaties involving lands located near the study area was made on May 19, 1790. Originally identified as the Detroit Treaty, the chiefs of the Odawa, Chippewa, Pottawatomi, and Huron and representatives of the Crown established a vast tract of land "…from the Detroit River easterly to Catfish Creek and south of the river La Tranche [now Thames River] and Chenail Ecarte [now St. Clair River], and contains Essex County except Anderdon Township and Part of West Sandwich; Kent County except Zone Township, and Gores of Camden and Chatham; Elgin County except Bayham Township and parts of South Dorchester and Malahide…[i]n Middlesex County, Deleware and Westminster Township and part of North Dorchester" (Morris 1943:17). Today, this treaty is identified as Treaty Number 2, illustrated by the letter "C" on Figure 4. A plaque, erected by the Historic Sites and Monuments Board of Canada further identifies this treaty as *McKee's Purchase*. A commemorative plaque located in the Blenheim Memorial Park in Blenheim, Ontario reads (Ontario Plaques 2022):

> *In May 1790 Alexander McKee, Deputy Agent of the British Indian Department, and the principal chiefs of the Ottawa [Odawa], Potawatomi, Chippewa and Wyandot negotiated a treaty whereby the British Crown acquired title to what is now southwestern Ontario. This treaty completed the process begun with Niagara treaties of 1781 and 1784, with the result that most of the Ontario peninsula was soon opened to British and Loyalist settlement.*

Caldwell First Nation were not part of the negotiations or signing of Treaty Number 2 (*Mckee's Purchase*) and, therefore, were not able to secure rights and benefits from the treaty (Caldwell First Nation 2021). Without a treaty, Caldwell First Nation's traditional territory remained in possession of private and government interests. In November 2020, Caldwell First Nation received land designation from the Crown and established a Reserve for their community (Caldwell First Nation 2021).

In addition to the above, Figure 5 reproduces a map from the *History of the Windsor Border Region* (Lajeunesse 1960) which depicts several Indigenous sites and trails documented in Essex County during the late 18th century. Trail A extends from the City of Windsor at the Detroit River to the Town of Leamington. Subsequently, Talbot Road and Highway 3 were constructed to largely follow Trail A. Trail D connects shoreline settlements or camps along the north shore of Lake Erie, roughly from the Village of Colchester to the Town of Leamington. "Site 2", illustrated by two black dots on Figure 5 to the east of the study area, represents two indigenous camps along the north shoreline of Lake Erie, while "Site 3", to the west of the study area, represents a well-established village on Cedar creek (Lajeunesse 1960: xxxix).

The nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon Indigenous territory. However, despite this shift, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to…systems of ideology and thought" (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout the region which show continuity with past peoples, even if they have not been explicitly recorded in Euro-Canadian documentation.

Today, multiple Indigenous communities are recognized in the area has having a potential interest in land use planning and development within the Town of Kingsville, including: Caldwell First Nation, Aamjiwnaang First Nation, WIFN, Oneida Nation of the Thames, Chippewas of the Thames First Nation, and Chippewas of Kettle Point and Stony Point First Nation.

1.2.2 EURO-CANADIAN RESOURCES

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain's (Petryshyn 1985). In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously-settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west, to Glengarry in the east.

Essex County was originally part of the of the District of Hesse, and on October 15, 1792, was renamed the Western District (County of Essex 2019). On January 1, 1800, in the *Act for the Better Division of the Province*, the Townships of Rochester, Mersea, Gosfield, Maidstone, Sandwich, Marden were created as part of the County of Essex. The townships of Essex County were surveyed by Patrick McNiff, Abraham Iredell and Thomas Smith (Clarke 2001:60, 70).

Essex County is bounded by Lake St. Clair to the north, the Detroit River to the west, Lake Erie to the south, and Kent County (now Municipality of Chatham-Kent) to the east. It was one of the first counties to be settled in Upper Canada (later, Ontario). The first French settlers arrived in the Detroit-Windsor area in 1701 when the Sieur De Lamothe Cadillac and roughly 100 military and civilian personnel established Fort Pontchartrain on the Detroit side of the river (Fuller 1972:6-8). The French settlement remained on the Detroit side until 1748 when the Jesuit mission to the Huron (or Wyandot) was established on the south shore near the foot of the present-day Huron Church Road and the Ambassador Bridge. Fort Pontchartrain surrendered to the British in 1760 and remained under British control until 1796, although it was officially a part of the United States from 1783 onwards. During this period, the settlement continued to grow, but remained predominantly French. The area (now in present-day Windsor) across the river from Fort Pontchartrain (later to become Detroit) was called “Petite côte” and served the agricultural needs of the fort (Archives of Ontario 2014). Following the American Revolutionary War, settlers began to settle further east of the Detroit River along the north shore of Lake Erie (Corporation of the County of Essex 1992:2).

Road development in the early 19th century helped in the spread of European settlers throughout Essex County. In 1811, Colonel Talbot commissioned Mahlon Burwell to survey the Talbot Road along the north shore of Lake Erie. The construction of the roadway was interrupted with the War of 1812, eventually reaching Essex County in 1818.

Following the American Revolutionary War, settlers loyal to the Crown crossed the Detroit River and were granted lands in Essex County. As most of the land around Amherstburg was taken by military officers, the new settlers moved east, towards Kingsville, burning forests to establish fertile farmlands. Many of these individuals were Hessians, who sided with the British during the American Revolutionary War, and Pennsylvanian Dutch Mennonites who were branded as British supporters and fled America as a result (County of Essex 2019).

In 1854, the Great Western Railway began to develop in Essex County, connecting Leamington, Kingsville, Harrow, and Windsor. With the growth of the railway and lumber marker, Kingsville and surrounding villages began to grow (County of Essex 2019).

After the *Municipal Corporations Act* of 1850, which provided a means of government for towns and counties, Essex became a united entity with the Counties of Kent and Lambton. In June 1853, Essex once again became an independent county. Roads throughout the township were largely improved by the 1860s, allowing for settlement in the interior portions of the County. By 1866, the Talbot Road was graveled, and a mail coach was operating along the road between Leamington and Windsor (Kingsville Centennial Committee 1952:18). By 1881, the population of Essex County was 36,258, with 25,303 settlers living in rural areas (Belden 1881:8).

1.2.2.1 Gosfield Township

The Township of Gosfield was one of the first townships to be laid out in the province, as part of the new settlement that included the townships of Gosfield and Colchester. The Township of Gosfield was first surveyed in 1788, by McNiff and Iredell. Additions were made to the survey by Smith in 1805 and completed in 1823 by Mahlon Burwell with the layout of the Talbot Road through the township (Clarke 2001:67; Kingsville-Gosfield Heritage Society 2003:10). Figure 6 illustrates a portion of the 1823 Plan of Gosfield Township. The township was named for the Village of Gosfield in Essex County, England (Armstrong 1930:117).

The first European settlers in the township arrived prior to survey, under the influence of Major R. Matthews, the English Commanding Officer at Detroit. In 1787, Matthews directed 128 men, which included disbanded soldiers and United Empire Loyalists to settle on the north side of Lake Erie. Following the completion of the survey, 92 of Matthews settlers were assigned lots west of Division Road in the township (Kingsville Centennial Committee 1952:7). However, many of these men were labeled “sham settlers”, in that they did not improve or settle on their allotted lands, and the patents for the lands were reissued, beginning in 1798 to William Wright (Kingsville Centennial Committee 1952:11). In the same year, Lot 4 in Gosfield Township, part of the study area, was granted by patent to Peter Malott, although it was previously occupied by Robert Dennison. Other early settlers included Leonard Scratch (Kratz), John Wigle, Philip Fox, and Peter and Theodore Malotte (Belden 1881:12). By 1793, there were an estimated 110 families living along the lake front in Gosfield and Colchester townships (Kingsville Centennial Committee 1952:14). By the middle and late 1790s, the second and third Concessions were beginning to be established (Kingsville Centennial Committee 1952:14).

Settlement in the Township of Gosfield initially developed around the community of Kingsville, situated along Mill Creek, on the north shore of Lake Erie. Mills were established on the creek in the early 19th century, as well as a tile factory erected by Abel Augustine in 1815. Augustine’s tile factory allowed for settlement on swampy land in the surrounding township (Kingsville Centennial Committee 1952:14). In 1844, James Kinley laid out Kingsville with village lots centered on Lots 1 and 2, Concession 1 Western Division (Sutherland & Co. 1866:117). The population was noted at 1,338 people in 1844 and had increased to 2,355 by 1861 (McEvoy et al., 1866:326). In 1866, due to improvements in road conditions, two mail coaches serviced Kingsville daily, one travelling to Leamington and Windsor via Talbot Road, and the other travelling to Amherstburg and Windsor via Lakeshore Road (Kingsville Centennial Committee 1952:18).

By 1867, Kingsville became an established lakeport for the township and served as the supply centre for the surrounding area (Kingsville Centennial Committee 1952:18). The principal business of Kingsville included the shipment of grain, lumber, cordwood, and general merchandise (Sutherland & Co. 1866: 117). Kingsville was incorporated as a village in 1878, with J.H. Smart as reeve (Kingsville-Gosfield Heritage Society 2003).

Outside of Kingsville, and the smaller hamlets, the township land use was agriculturally focused. In the mid-to-late 19th century, the primary crops in the township were wheat, barley, and rye. By the 1870s, dairy farming was introduced, which provided year-round work and reduced the dependence on the wheat harvest (Kingsville-Gosfield Heritage Society 2003:70). Tobacco farming was another large industry in the township, with an annual production of tobacco in 1871 of 250,000 pounds (Kingsville

Reporter 2005:58). In the late 1870s, growing fruit for commercial use began in the township (Kingsville-Gosfield Heritage Society 2003:96).

The 1877 Essex County map (Walling 1877) shows the extent to which the Township of Gosfield was settled by the late 19th century (Figure 7). By this time, many of the lots in the township are occupied, with numerous structures illustrated, particularly along the main roadways. The 1881 map of the Township Gosfield in the Essex Supplement of the *Illustrated Atlas of the Dominion of Canada* (Belden 1881) depicts the location of structures, roads, and communities in the late 19th century, and indicates a population of approximately 1,000 people (Figure 8). Few landowners are indicated, but those that are listed are distributed along early transportation routes. Early communities depicted on the map include Union, Ruthven, Olinda, Cottam, North Ridge, and the Village of Kingsville.

In the late 19th century, the township was separated into two municipalities to better serve their residents. On April 23, 1887, a provincial act was passed to separate the township into the townships of Gosfield North and Gosfield South, with Concession 6 as the dividing line (Province of Ontario 1887:226).

Hiram Walker, a successful entrepreneur in the Village of Walkerville, to the east, pushed for the incorporation of the Lake Erie and Detroit Railway (LE & DR) Company in 1885. By 1889, the LE & DR line was completed to Kingsville (Lombard 1972). Walker saw the potential of the Kingsville waterfront for tourism and purchased 84 acres in Kingsville for the construction of the Mettawas Hotel. Walker helped to shape Kingsville into a resort town in the late 19th century, attracting wealthy visitors from Windsor and Detroit (Kingsville-Gosfield Heritage Society 2003:104).

Alongside the boom in tourism to Kingsville's economy was the discovery of natural gas, which accelerated the village's growth and development (Kingsville-Gosfield Heritage Society 2003:106). A gusher was struck on January 22, 1889 on Lot 7, Concession 1 East of Division Road, on the farm of Wesley Wigle. This discovery attracted large oil and gas companies to the area. In 1890, the Kingsville and Natural Gas Company was established, and gas mains were laid along principal streets within the village. By 1894, there were 30 local wells in operation with the majority of the gas being send to Windsor, Detroit, and Toledo. By the end of the century, gas operations decreased following the natural gas delegation in Ottawa in 1898. Following this, only a few wells were in operation producing small quantities of natural gas (Kingsville-Gosfield Heritage Society 2003:257-261).

1.2.2.2 Lots 3 to 5, Concession 1 and Lot K, Concession 2

Lot 3, Concession 1 was initially granted in 1787 to James Wood, a private in Colonel Butler's Rangers. However, after he failed to improve the land, the patent to 114 acres was issued to William Wright on March 14, 1798 (Kingsville Centennial Committee 1952:11). In 1833, Crown Land Grants list Peter Scratch as the owner of 200 acres in the rear parts of Lots 3 and 4 on Concession 1 (County of Essex 2015a), and Richard Harrington as the owner of the 15 acres in the northern portion of Lot 3, Concession 1 (County of Essex 2015b). In 1877, historic mapping indicates that W. Fox, A. McDonald and Malott each owned portions of Lot 3, Concession 1 (Figure 7).

The patent to Lot 4, Concession 1 was granted in 1787 to Francis Robert, a Sergeant-Major in the Detroit Volunteers, and was occupied by Robert Dennison. However, as Francis Robert never settled the land (a sham settler), the patent to the land was granted to Peter Malott on June 12, 1798 (Kingsville Centennial

Committee 1952:11). In 1828, W.G. Fox, a farmer born in Gosfield Township, is listed as the owner of Lot 4, Concession 1, and in 1877 historical mapping includes the names of S. Fox, A. McDOnald and Malott over various portions of the lot (Figure 7). On the 1881 *Illustrated Atlas of the Dominion of Canada,* W. G. Fox is indicated over Lot 4, Concession 1 (Figure 8).

Lot 5, Concession 1 was briefly occupied by John Hocust and William Duggan of the King's Regiment, but both failed to improve the land. In 1793, Duggan transferred the land to William Lamoth. Peter Malott received the patent for the 114 acres of Lot 5, Concession 1 in 1803 (Kingsville Centennial Committee 1952:11), and another 100 acres of Lot 5, Concession 1 in 1808 (County of Essex 2015b). In 1877, historical mapping includes H. T. Malott and Maynard indicated on the lot (Figure 7), however, no name is provided on the 1881 *Historical Atlas of Map of Gosfield Township* (Figure 8).

The Crown Land Sales for Essex County lists Euphimia Heigle et al. as the owner of Lot K, Concession 2 in 1822 (County of Essex 2015b). In 1841, Leonard Malott, a farmer, contractor, and builder born in Gosfield Township, occupied the lands and is listed in the 1881 *Illustrated Atlas of the Dominion of Canada* (Belden 1881) (Figure 8).

In discussing the late 19th century historical mapping, it must be remembered that many historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Review of historical mapping also has inherent accuracy difficulties due to potential error in geo-referencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in 'fixed' locations over time (e.g., road intersections, road alignments, shorelines, etc.), errors/difficulties of scale and the relative idealism of historical cartography, historical maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review. For example, in the 1823 (Figure 6) and 1881 (Figure 8) historical maps, lots between concession 1 and 2 are in alignment with one another (i.e., the boundary between Lot 3 and Lot 4, Concession 1 Western Division is in line with the boundary between Lot K and Lot L). However, the 1877 map (Figure 7) and modern mapping shows the lots off set between the concessions. Thus, while in historical mapping, the study area appears to include a portion of Lot L, current mapping indicates that the study area is limited to those listed in the current report.

1.3 Archaeological Context

1.3.1 NATURAL ENVIRONMENT

The Stage 1 study area for the Project is situated within the St. Clair Clay Plain. The St. Clair Clay Plain physiographic region is described as:

> *Adjoining Lake St. Clair in Essex and Kent Counties and the St. Clair River in Lambton County are extensive clay plains covering 2,270 square miles. The region is one of little relief, lying between 575 and 700 feet a.s.l., except for the moraine at Ridgetown and Blenheim which rises 50 to 100 feet higher. …Glacial Lake Whittlesey, which deeply covered all of these lands, and Lake Warren which subsequently covered nearly the whole area, failed to leave deep stratified*

> *beds of sediment on the underlying clay till except around Chatham, between Blenheim and the Rondeau marshes, and in a few other smaller areas. Most of Lambton and Essex Counties, therefore, are essentially till plains smoothed by shallow deposits of lacustrine clay which settled in the depressions while the knolls were being lowered by wave action.*
>
> (Chapman and Putnam 1984:147)

The dominant soil type is Brookston Clay Sand Spot Phase, a mixed area of shallow sand knolls overtop clay, intermixed with Brookston clay and clay loam, typical of swampy areas (Chapman and Putnam 1984). European agricultural practices were moderately delayed until artificial drainage was established by dredged ditches and field tiling.

Water sources are abundant within close proximity to the Stage 1 study area. In addition to large primary water sources to the north and south of the study area, i.e., Lake St. Clair and Lake Erie, there are primary sources of potable water within the study area including Mill Creek, which drains toward Lake Erie.

1.3.2 PRE-CONTACT INDIGENOUS RESOURCES

It has been demonstrated that Indigenous people began occupying southern Ontario as the Laurentide glacier receded, as early as 11,000 years ago (Ellis and Ferris 1990:13). Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous culture prior to the period of contact with European peoples has been distinguished into cultural periods based on observed changes in material culture. These cultural periods are largely based on observed changes to formal lithic tools, and separated into the Early Paleo-Indian, Late Paleo-Indian, Early Archaic, Middle Archaic, Late Archaic, and Terminal Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, cultural periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration. It should be noted that these cultural periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous culture through time. The current understanding of Indigenous archaeological culture is summarized in Table 1, based on Ellis and Ferris (1990). The provided time periods are based on the “Common Era” calendar notation system, i.e., Before Common Era (BCE) and Common Era (CE).

Table 1: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time Period	Comments
Early Paleo	Fluted Projectiles	9000 – 8400 BCE	Spruce parkland, caribou hunters
Late Paleo	Hi-Lo Projectiles	8400 – 8000 BCE	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	8000 – 6000 BCE	Slow population growth
Middle Archaic	Brewerton-like points	6000 – 2500 BCE	Environment similar to present
Late Archaic	Narrow Points	2500 – 1800 BCE	Increasing site size
	Broad Points	1800 – 1500 BCE	Large chipped lithic tools
	Small Points	1500 – 1100 BCE	Introduction of bow hunting
Terminal Archaic	Hind Points	1100 – 950 BCE	Emergence of true cemeteries

Period	Characteristics	Time Period	Comments
Early Woodland	Meadowood Points	950 – 400 BCE	Introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	400 BCE – 500 CE	Increased sedentism
	Princess Point	550 – 900 CE	Introduction of corn
Late Woodland	Early Late Woodland	900 – 1300 CE	Emergence of agricultural villages
	Middle Late Woodland	1300 – 1400 CE	Long longhouses (100+ metres)
	Late Late Woodland	1400 – 1650 CE	Tribal warfare and displacement
Contact Indigenous	Various Algonkian Groups	1650 – 1875 CE	Early written records and treaties
Late Historic	Euro-Canadian	1796 CE – present	European settlement

Between 9000 and 8000 BCE, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method of maintaining social ties was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

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

At approximately 3500 BCE, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point which significantly affected the watershed of the Great Lakes basin. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French-Mattawa river valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin had changed to its present course. This also prompted a significant increase in water-level to approximately modern levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). By 2900 to 2500 BCE, the earliest evidence exists for the construction of fishing weirs (Ellis et al. 1990: Figure 4.1; Stevens 2004). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for permanence of settlement within the landscape. This period is also marked by

further population increase and by 1500 BCE evidence exists for substantial permanent structures (Ellis 2013:45-46).

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

By the Late Woodland period there was a distinctive cultural occupation in southwestern Ontario, including Essex, Kent, and Lambton counties. The primary Late Woodland occupants of this area were populations described by archaeologists as Western Basin Tradition. Murphy and Ferris (1990:189) indicate that these people had ties with populations in southeastern Michigan and northwestern Ohio and represent an *in situ* cultural development from the earlier Middle Woodland groups. The Western Basin Tradition seems to have been centred in the territory comprising the eastern drainage basin of Lake Erie, Lake St. Clair, and the southern end of Lake Huron. The Western Basin Tradition is divided up into four phases based on differences in settlement and subsistence strategies and pottery attributes: Riviere au Vase, Younge, Springwells, and Wolf.

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

1.3.3 REGISTERED ARCHAEOLOGICAL SITES AND SURVEYS

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

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

An examination of the MCM's *Ontario Archaeological Sites Database* has shown that there are three registered archaeological sites within one kilometre of the study area (Government of Ontario 2022a). Table 2 provides a summary of the registered archaeological sites within one kilometre of the study area. None of the registered archaeological sites are within 50 metres of the study area.

Table 2: Registered Archaeological Sites Within One Kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type
AaHq-2	Remark	Indigenous, Archaic	Camp
AaHq-22	Remark Subdivision H 1	Multi-component: Indigenous, Archaic; and Euro-Canadian	Unknown
AaHq-24	Not applicable (n/a)	Euro-Canadian	Farmstead

A query of the MCM's *Ontario Public Register of Archaeological Reports* identified one archaeological assessment within 50 metres of the study area (Government of Ontario 2022b). In 2018, The Archaeologists Inc. (TAI) completed a Stage 1 & 2 archaeological assessment for part of Lot 3, Concession 1, Western Division, Geographic Township of Gosfield under Project Information Form (PIF) number P052-0844-2017 (TAI 2018). No archaeological resources were identified and no further archaeological assessment of the property was recommended (TAI 2018). A portion of TAI's (2018) study area overlaps with the eastern portion of the study area for the Project.

1.4 Existing Conditions

The study area for the Stage 1 assessment of the Project comprises approximately 54.2 ha over parts of Lots 3, 4 and 5, Concession 1 Western Division, and Lot K, Concession 2 Western Division, Geographic Township of Gosfield, now Town of Kingsville, Essex County, Ontario. Broadly, the study area consists of existing municipal road RoWs, gravel shoulders, drainage ditches, gravel and asphalt laneways, residential areas, scrubland, and agricultural fields.

2 Field Methods

Prior to the start of the Stage 1 archaeological assessment, the Town provided preliminary mapping of the Project's proposed impacts which defined the assessment area (i.e., the study area). This mapping was then geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field.

Initial background research compiled information concerning registered and/or potential archaeological resources within the study area. A property inspection was conducted on August 10, 2022, by Darren Kipping (P422) under PIF number P422-0017-2022, issued to Darren Kipping, MA by the MCM. The property inspection involved spot-checking the entirety of the study area to identify the presence or absence of features of archaeological potential in accordance with Section 1.2 of the MCM's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

During the property inspection on August 10, 2022, the weather was sunny and warm. At no time were field, lighting, or weather conditions detrimental to the identification of features of archaeological potential. The photography from the property inspection is presented in Section 7.1 and confirms that the requirements for a Stage 1 property inspection were met, as per Section 1.2 and Section 7.7.2 Standard 1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011). Figure 9 illustrates photo locations from the property inspection of the study area.

Based on the results of the property inspection, approximately 10.0% of the study area consists of modern disturbances from the existing municipal road RoW, gravel shoulders, drainage ditches, gravel and asphalt laneways. Photos 1 to 7 illustrate typical examples of existing disturbance identified throughout the study area. Approximately 5.6% of the study area was previously subjected to archaeological assessment (see Section 1.3.3).

The remainder of the study area, approximately 84.4%, consists of agricultural fields and scrubland, which was identified as retaining archaeological potential. Photos 8 to 10 illustrate typical examples of these areas.

3 Analysis and Conclusions

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by the MCM (Government of Ontario 2011) to determine areas of archaeological potential within the study area. These variables include proximity to registered archaeological sites; distance to various types of water sources; soil texture and drainage; glacial geomorphology; elevated topography; and the general topographic variability of the area. However, it is worth noting that extensive land disturbance can eradicate archaeological potential.

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southern Ontario have remained relatively stable over time, proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to current water is one of the most commonly used variables for predictive modeling of archaeological site location in Ontario. Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

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

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

A portion of Mill Creek crosses the study area. In addition, ancient and/or relic tributaries of other primary water sources may have existed but are not identifiable today and are not indicated on historical mapping. Further examination of the study area's natural environment indicates that the Essex County soils in the study area would have been suitable for Indigenous and early Euro-Canadian agriculture, especially in the 19th and 20th centuries following the implementation of municipal drainage systems and agricultural field tilling. An examination of the MCM's *Ontario Archaeological Sites Database* has shown that there is one Indigenous archaeological site and one multi-component site within one kilometre of the study area (Government of Ontario 2022a). Historical mapping, referring to plans from 1794 CE, also suggest the presence of Indigenous villages and camps to the west and east of the study area (Lajeunesse 1960).

Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990c) or property that local histories or informants have identified with possible historical events, activities, or occupations. Historical

mapping demonstrates that the study area was occupied as early as the late 18th century, comprising of men who served the British in the American Revolutionary War, or individuals seeking to escape persecutive within the United States of America. Much of the established road and rail networks and agricultural settlement from the 19th century is still visible today. Adding to these observations in the presence of one registered 19th century archaeological site, as well as one multi-component archaeological site within one kilometre of the study area (Government of Ontario 2022a).

When the above listed criteria are applied, the study area retains potential for the identification of Indigenous and Euro-Canadian archaeological resources. The information obtained from the property inspection confirms that portions of the study area, approximately 84.4%, retain archaeological potential (see Photos 8 to 10).

However, as noted above, extensive and deep land alteration can eradicate archaeological. The Stage 1 property inspection confirmed that portions of the study area, approximately 10.0%, are located in areas that have been subject to modern disturbances such as existing gravel and asphalt laneways and driveways, drainage ditching, sidewalks and parking lots, residential and commercial buildings, and buried utilities and other municipal infrastructure (see Photos 1 to 7). As a result, these lands have been subject to extensive and deep land alterations that have severely damaged the integrity of archaeological resources and have removed archaeological potential.

In addition, a previous archaeological assessment (TAI 2018) has been conducted for a portion of the Stage 1 study area associated with the Project. As it relates to the current study area, the intersecting and overlapping area of previous assessment, approximately 5.6% of the study area, also retains low to no archaeological potential.

4 Recommendations

The Stage 1 archaeological assessment of the study area for the Project determined that much of the study area, approximately 84.4%, retains potential for the identification and documentation of archaeological resources. In accordance with Section 1.3.1 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is required for any portion of the Project's anticipated construction activities which impact an area of archaeological potential (Figure 9).**

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

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

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

It is further recommended that Stage 2 archaeological assessment of the study area for the Project include engagement with interested Indigenous communities. Indigenous engagement practices conducted during the Stage 2 archaeological assessment will be completed in accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* Government of Ontario 2011) and the MCM's draft technical bulletin on *Engaging Aboriginal Communities in Archaeology*.

The Stage 1 archaeological assessment also determined that a portion of the study area, approximately 15.6%, retains low to no archaeological potential due to deep and extensive modern disturbance and/or previous archaeological assessment (i.e., TAI 2018). In accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for portions of the study area which impacts a previously surveyed area (Figure 9).**

The remaining 10.0% of the study area is located in areas that have been subject to modern disturbances such as existing gravel and asphalt laneways, driveways, drainage ditching, sidewalks and parking lots, residential and commercial buildings, and buried utilities or other municipal infrastructure. Consequently, these areas have been subject to extensive and deep land alterations that have severely damaged the integrity of archaeological resources and have removed archaeological potential. In accordance with Section 1.3.2 and Section 7.7.4 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), **Stage 2 archaeological assessment is not required for any portion of the Project's anticipated construction activities which impact an area of low to no archaeological potential (Figure 9).**

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

5 Advice on Compliance with Legislation

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

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18 (Government of Ontario 1990c). The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

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

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

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (Government of Ontario 2002) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Government and Consumer Services.

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

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7 Images

7.1 Photographs

Photo 1: View of study area, showing disturbed road RoW, facing east



Photo 2: View of study area, showing disturbed laneway, facing south



Photo 3: View of study area, showing disturbed laneway and agricultural fields, facing west



Photo 4: View of study area, showing existing structures, facing east



Photo 5: View of study area, showing disturbed road RoW, facing east northeast



Photo 6: View of study area, showing disturbed road RoW, facing southwest



Photo 7: View of study area, showing disturbed road RoW, facing north



Photo 8: View of study area, showing agricultural fields, facing west.



Photo 9: View of study area, showing agricultural fields, facing east.

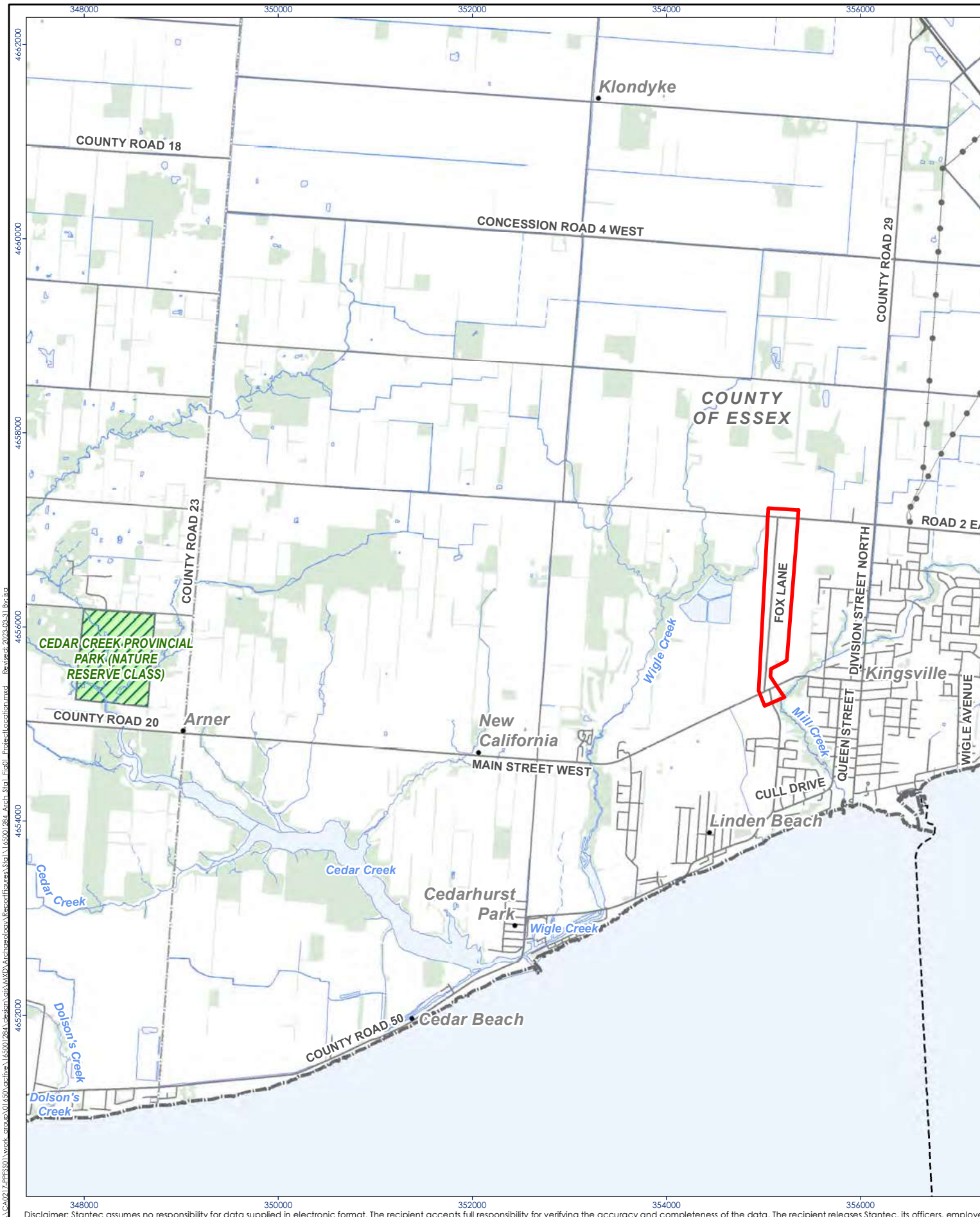


Photo 10: View of study area, showing agricultural fields, facing southeast.



8 Maps

Maps of the study area for the Stage 1 archaeological assessment follow on succeeding pages.



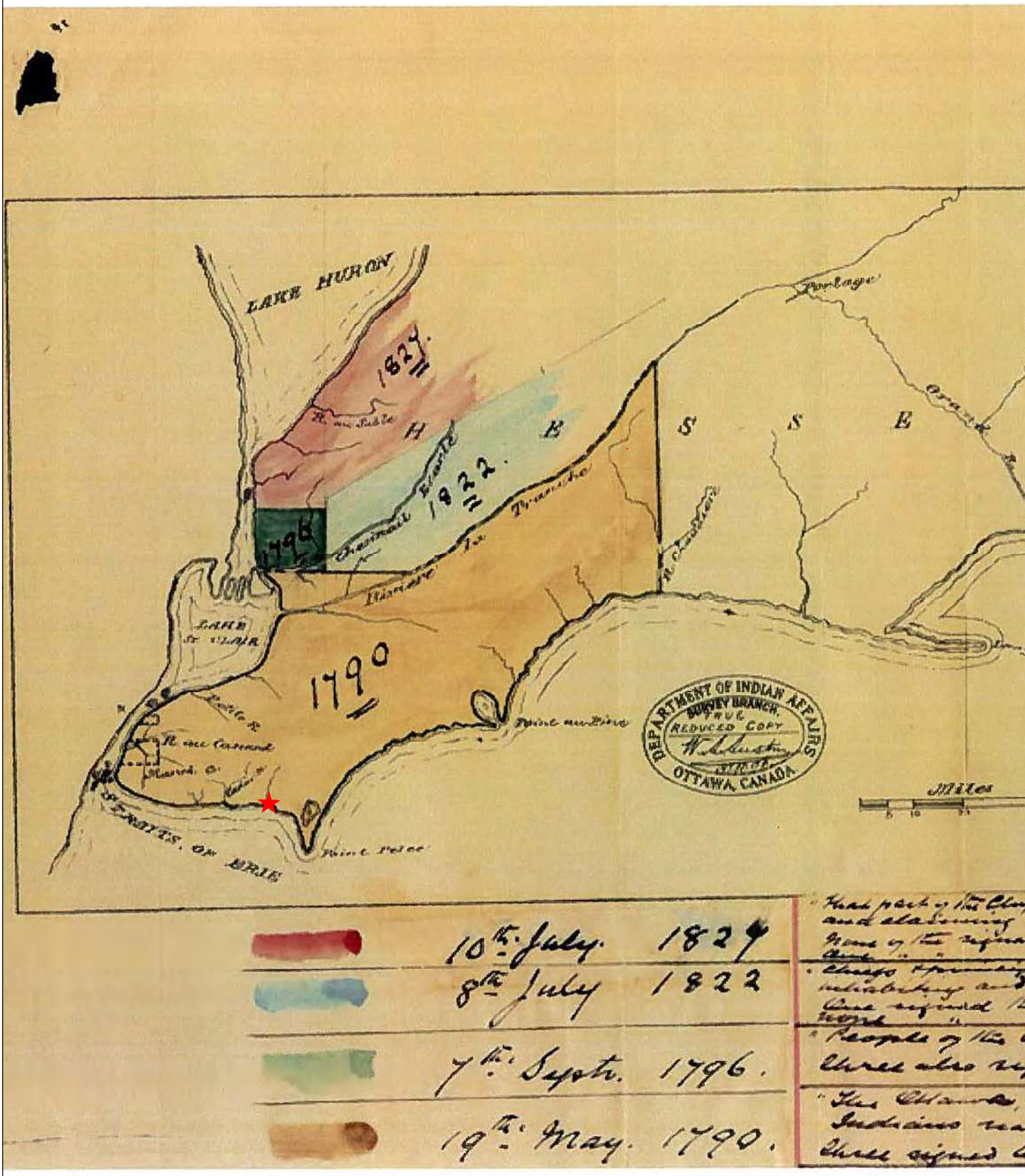
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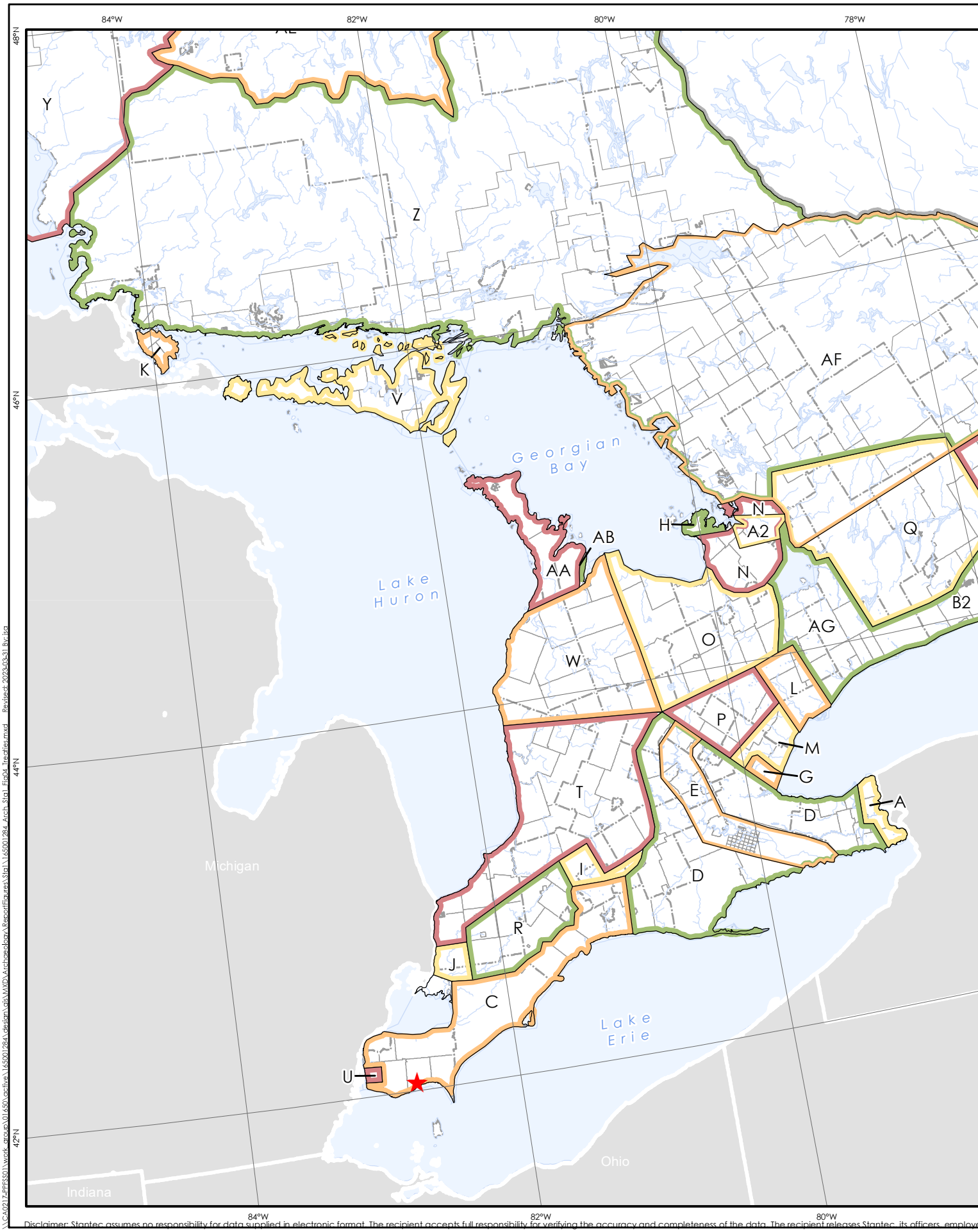
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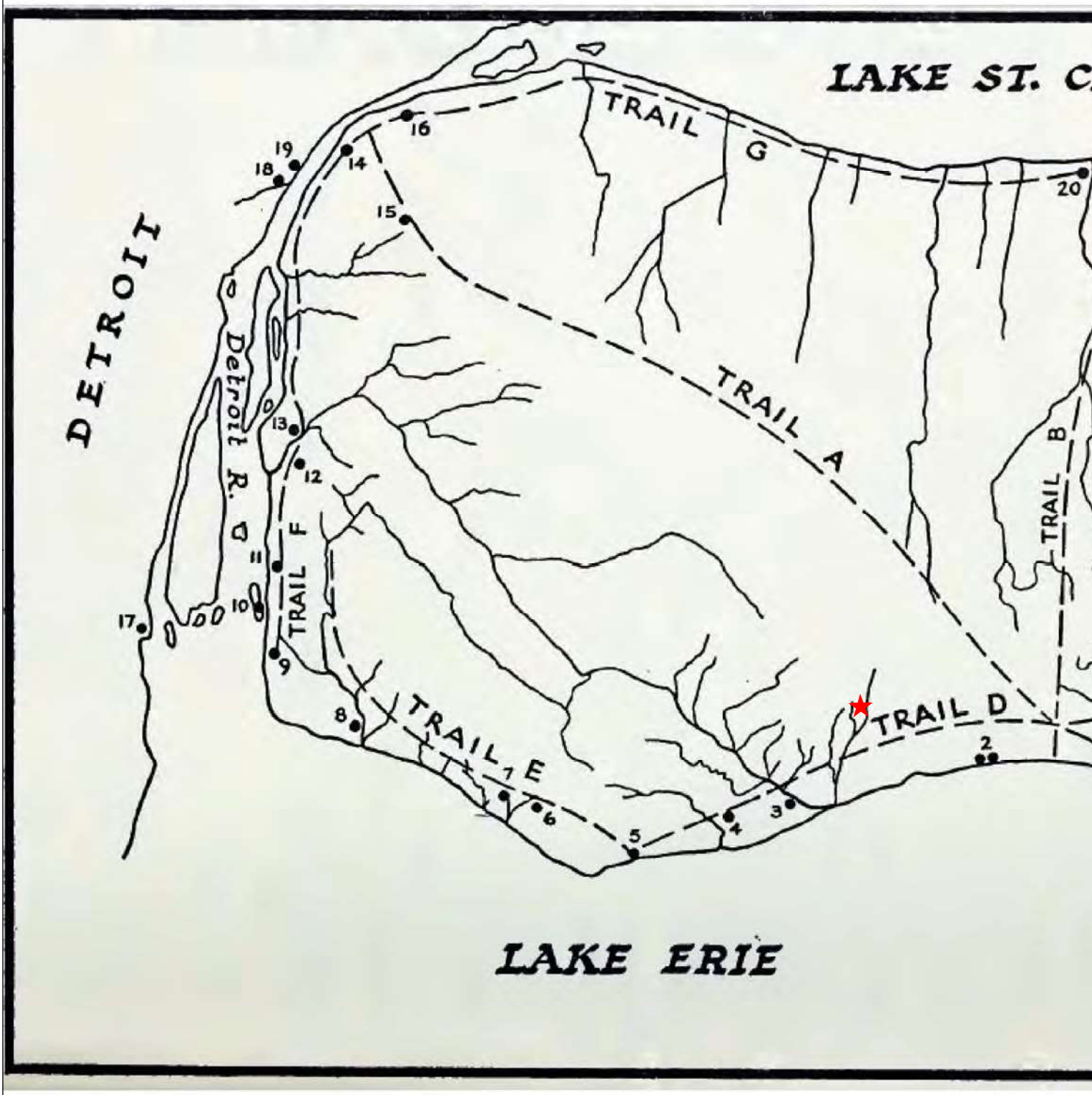
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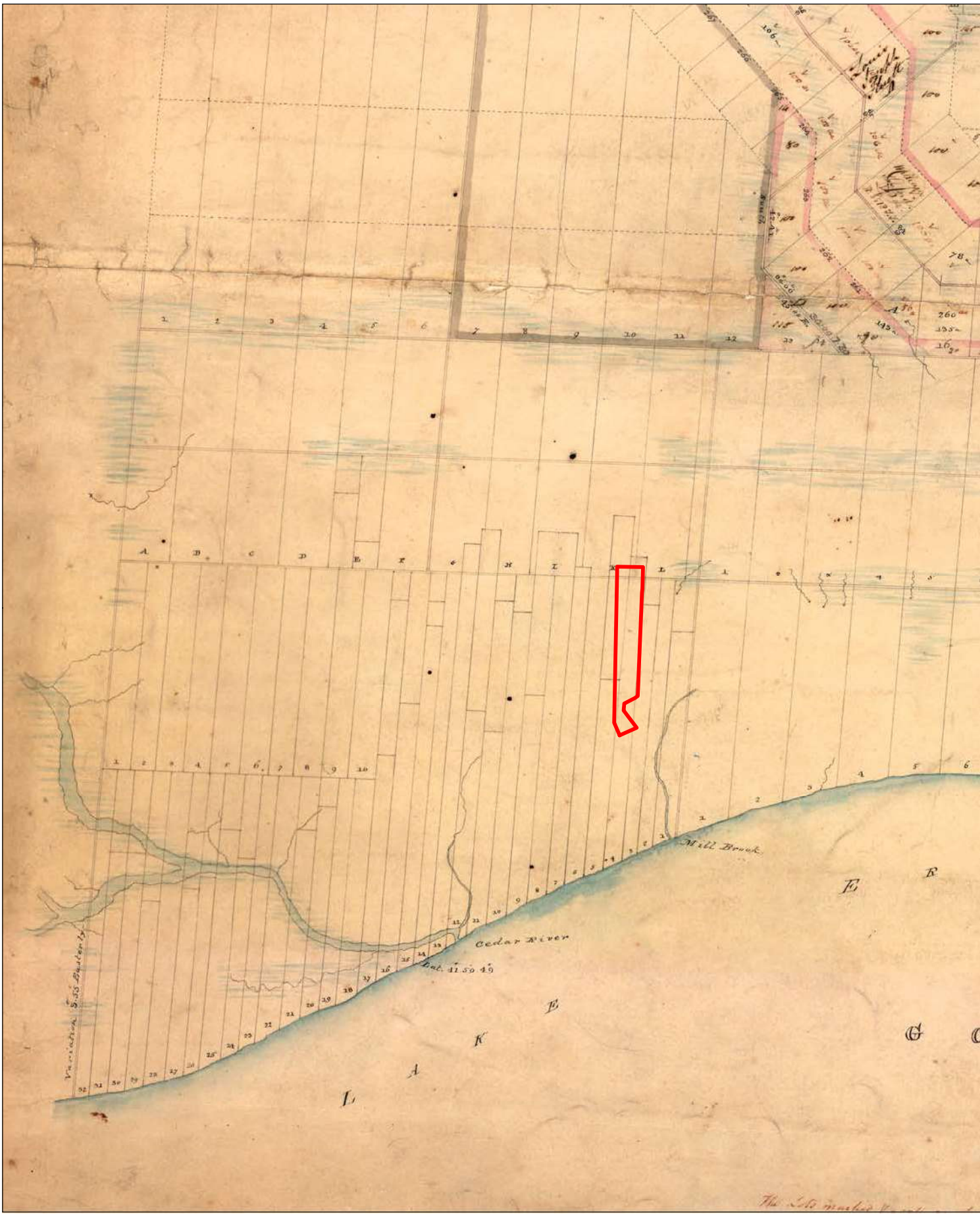
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9 Closure

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities, or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Quality Review Dickson, Parker 2023.04.03 09:47:10 -04'00'

Parker Dickson – Senior Archaeologist, Senior Associate

Independent Review Tracie Carmichael 2023.04.03 09:51:39 -04'00'

Tracie Carmichael - Managing Principal, Environmental Services

Appendix C - Cultural Heritage Report

Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment—Heritage Road 2 West, Town of Kingsville, Ontario

FINAL REPORT

November 7, 2023

Prepared for:
Town of Kingsville
2021 Division Road North
Kingsville, Ontario N9Y 2Y9

Prepared by:
Stantec Consulting Ltd.
600-171 Queens Avenue
London, Ontario N6A 5J7

Project Number:
165001284

Limitations and Sign-off

The conclusions in the Report titled Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment—Heritage Road 2 West, Town of Kingsville, Ontario are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from the Town of Kingsville (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by: Digitally signed by Smith, Frank
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Frank Smith, MA, CAHP
Cultural Heritage Specialist

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Lashia Jones, MA, CAHP
Senior Cultural Heritage Specialist

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Approved by: Tracie Carmichael
2023.11.07 10:05:45 -05'00'

Signature

Tracie Carmichael, BA, B.Ed. Managing Principal, Environmental Services

Printed Name and Title

Executive Summary

As part of a Municipal Class Environmental Assessment (MCEA), the Town of Kingsville (the Client) retained Stantec Consulting Ltd. (Stantec) to study the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements to meet long-term transportation needs (the Project Location). These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development in the Town.

The requirement to consider cultural heritage in MCEA is discussed in the *Municipal Class Environmental Assessment Manual* (MCEA Manual) (Municipal Engineers Association 2015) and the revised 2020 *Provincial Policy Statement* (PPS) (Government of Ontario 2020). The MCEA Manual considers cultural heritage, including built heritage resources and cultural heritage landscapes, as well as archaeological resources, as one in a series of environmental factors to be considered when undertaking an MCEA, particularly when describing existing and future conditions, development alternatives, and determination of the preferred alternative. To facilitate this Project, the Client retained Stantec to conduct a *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR). For the CHR, Stantec defined a Study Area for the assessment that includes a 50-metre boundary around the Project Location.

Historical research, municipal and agency data requests, and the field investigation conducted for this report identified five previously identified built heritage resources. Following an assessment of impacts, potential indirect impacts were identified for 172 Main Street West (BHR-1), 190 Main Street West (BHR-2), 189 Main Street West (BHR-3), and 289 Main Street West (BHR-4). The Preferred Option is to avoid BHR-1, BHR-2, BHR-3, and BHR-4 by establishing a buffer zone around the built heritage resources to avoid construction activity within 50 metres. This should use appropriate preventive measures such as mapping on construction maps or plans and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the built heritage resources.

Where avoidance is not feasible, the alternative option should be applied. If the 50-metre buffer cannot be avoided, the alternative option to mitigate this risk is for a qualified building condition specialist or engineer to develop a strategy to carry out condition surveys and vibration monitoring, where required. The pre-condition survey may include screening activities to identify critical properties and determine appropriate vibration levels based on building type, age, and condition. Vibration monitoring may consist of random confirmatory vibration monitoring during construction at the most critical properties. A post-condition survey should be carried out on an as-needed basis to be determined by a qualified building condition specialist or engineer.

To further understand the potential for the Project to effect built heritage resources, the impact assessment contained within this report should be amended when detail design information on proposed construction activity is finalized. When detailed design information is received, potential direct impacts and indirect can be refined as necessary.

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



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Appendix A Project Personnel Biographies

Project Personnel

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GIS Specialist:	Josh Sa
Administrative Assistant:	Sarah Hilker
Quality Reviewer:	Lashia Jones, MA, CAHP
Independent Reviewer:	Tracie Carmichael, BA, B.Ed.

Biographies of heritage project personnel are contained in Appendix A.

Abbreviations

BHR	Built Heritage Resource
CAHP	Canadian Association of Heritage Professionals
CHER	Cultural Heritage Evaluation Report
CHR	Cultural Heritage Report
CHL	Cultural Heritage Landscape
CHVI	Cultural Heritage Value or Interest
EA	Environmental Assessment
HIA	Heritage Impact Assessment
MA	Master of Arts
MCEA	Municipal Class Environmental Assessment
MCM	Ministry of Citizenship and Multiculturalism
O. Reg.	Ontario Regulation
OHA	*Ontario Heritage Act*
OHT	Ontario Heritage Trust
PPS	Provincial Policy Statement
RoW	Right-of-Way

1 Introduction

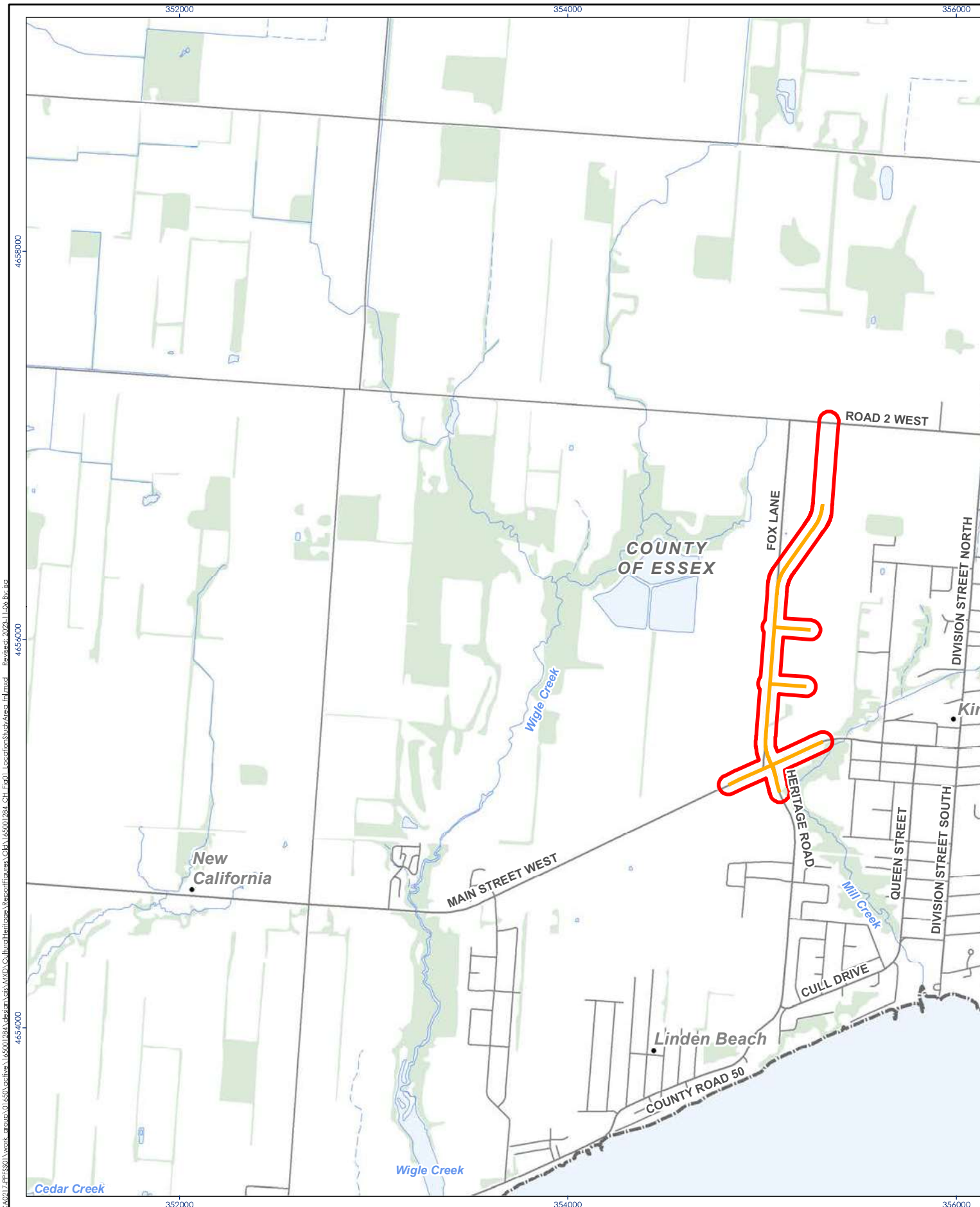
1.1 Study Purpose and Objectives

As part of a Municipal Class Environmental Assessment (MCEA), the Town of Kingsville (the Client) retained Stantec Consulting Ltd. (Stantec) to study the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements to meet long-term transportation needs (the Project Location). These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development in the Town (Figure 1 and Figure 2).

The requirement to consider cultural heritage in MCEA is discussed in the *Municipal Class Environmental Assessment Manual* (MCEA Manual) (Municipal Engineers Association 2015) and the revised 2020 *Provincial Policy Statement* (PPS) (Government of Ontario 2020). The MCEA Manual considers cultural heritage, including built heritage resources and cultural heritage landscapes, as well as archaeological resources, as one in a series of environmental factors to be considered when undertaking an MCEA, particularly when describing existing and future conditions, development alternatives, and determination of the preferred alternative. To facilitate this Project, the Client retained Stantec to conduct a *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* (CHR).

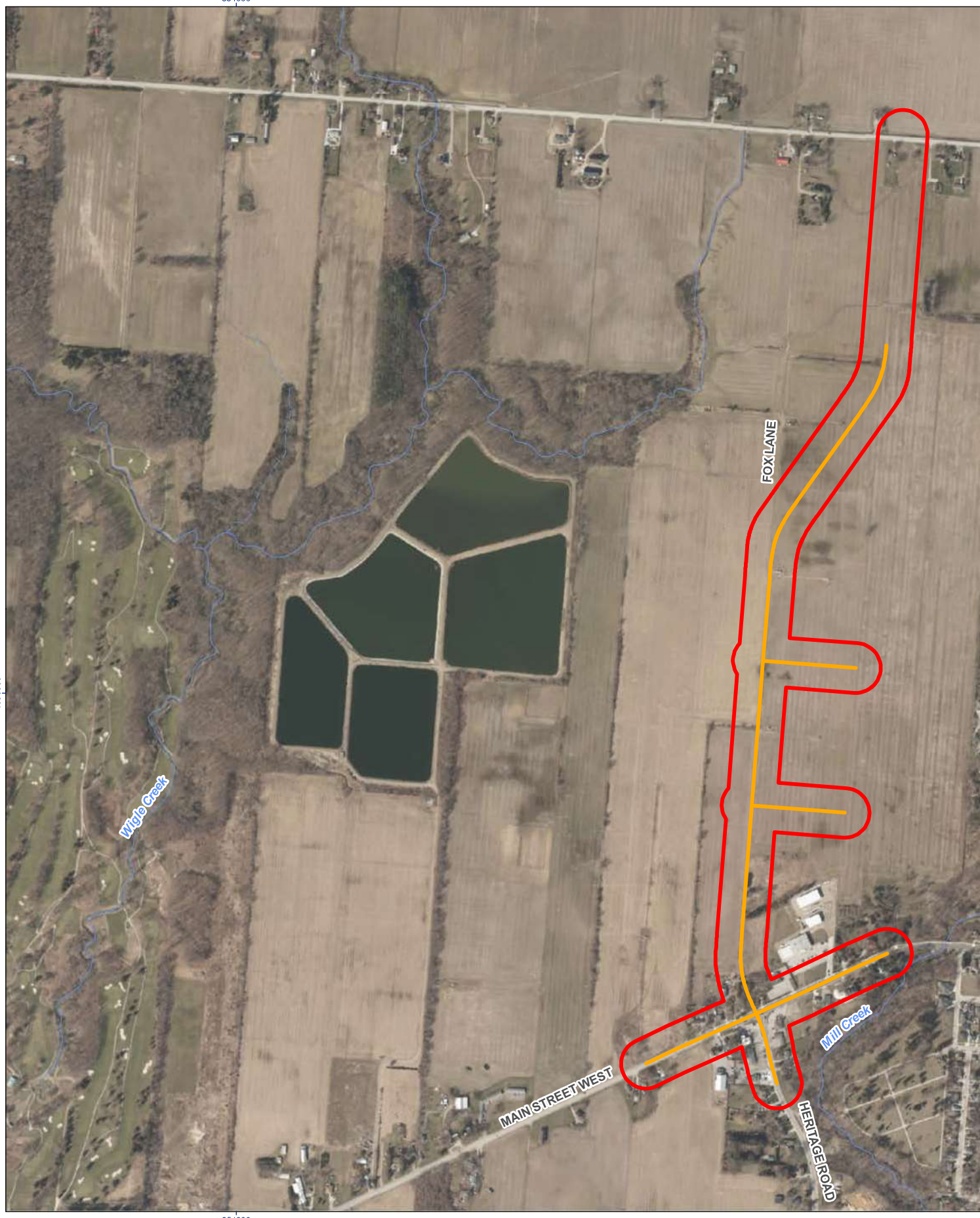
For the *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment*, Stantec defined a Study Area for the assessment that includes a 50-metre boundary around the Project Location.

This *Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment* summarizes the applicable heritage policies, summarizes the Study Area's geography and history, identifies known and potential built heritage resources and cultural heritage landscapes, and screens the potential built heritage resources and cultural heritage landscapes for potential cultural heritage value or interest (CHVI) using the criteria prescribed in *Ontario Regulation* (O. Reg.) *9/06* of the *Ontario Heritage Act* (OHA). Based on this understanding of the Study Area and surrounding area, the potential impacts resulting from the Project are assessed, and future actions are recommended.



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2 Methodology

2.1 Requirements

The Ontario Heritage Act (OHA) provides the primary statutory framework for the conservation of cultural heritage resources in Ontario. Conservation of cultural heritage resources is a matter of provincial interest, as reflected in the OHA and MCM policies.

The requirement to consider cultural heritage in Municipal Class EAs (MCEA) is discussed in the *Municipal Class Environmental Assessment Manual* (MCEA Manual) (Municipal Engineers Association 2015) and the revised 2020 *Provincial Policy Statement* (PPS) (Government of Ontario 2020). The MCEA Manual considers cultural heritage, including built heritage resources and cultural heritage landscapes, as well as archaeological resources, as one in a series of environmental factors to be considered when undertaking an MCEA, particularly when describing existing and future conditions, development alternatives, and determination of the preferred alternative.

The MCEA Manual further suggests that cultural heritage resources that retain heritage attributes should be identified early in the EA process and avoided where possible. Where avoidance is not possible, potential effects to these attributes should be identified and minimized. Adverse impacts should be mitigated according to provincial and municipal guidelines. It is suggested that this happen early in the process so that potential impacts to significant features can be included in understanding project impacts and mitigation plans.

In addition to requirements outlined in the MCEA Manual, provisions made under the PPS were also considered in the preparation of the study. Section 2.6 of the PPS addresses cultural heritage in the land use planning process and was considered. The applicable policies include:

> *2.6.1 - Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*
>
> *2.6.3 - Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated, and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.*
>
> (Government of Ontario 2020)

2.2 Background History

To familiarize the study team with the Study Area, local historical resources were consulted, archival documents were reviewed, and a summary of the historical background of the local area was prepared. Specifically, historical mapping and topographic mapping from 1877, 1881, 1913, 1940, 1960, and 1970 were reviewed to identify the presence of structures, settlements, and other potential built heritage resources and cultural heritage landscapes in advance of the field program.



2.3 Municipal and Agency Consultation

To determine provincial, municipal, and community interest in the Study Area from a cultural heritage perspective and to determine the presence of previously identified built heritage resources and cultural heritage landscapes, input was requested from the Ontario Heritage Trust (OHT), MCM, the municipality, and relevant historical societies. Consultation with the public and Indigenous peoples is undertaken as part of the broader EA process. Built heritage resources or cultural heritage landscapes identified by the public or Indigenous peoples will be incorporated into this report.

2.4 Field Program

Frank Smith, Cultural Heritage Specialist with Stantec, conducted a windshield and pedestrian survey on June 1, 2023, from the municipal right-of-way (RoW). During the survey, the Study Area was surveyed for previously identified or potential built heritage resources or cultural heritage landscapes. These were photographed, their characteristics noted while in the field, and their locations digitally recorded.

Generally, buildings and structures older than 40 years of age were screened during the survey for their potential to satisfy O. Reg. 9/06 criteria and the MCM *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (MCM 2016). Only properties containing buildings or structures determined to have the potential to satisfy O. Reg. 9/06 were inventoried. The use of the 40-year threshold is generally accepted by both the federal and provincial authorities as a preliminary screening measure for cultural heritage interest or value. This practice does not imply that all buildings and structures more than 40 years of age are inherently of significant heritage value, nor does it exclude exceptional examples constructed within the past 40 years of being of significant cultural heritage value.

2.5 Screening of Cultural Heritage Value or Interest

The criteria for determining CHVI is defined by O. Reg. 9/06 as amended by O. Reg. 569/22 (see Section 2.5.1). Each potential heritage resource was screened both as an individual structure and as a potential cultural heritage landscape. Where potential CHVI was identified, a structure or landscape was assigned a built heritage resource (BHR), or cultural heritage landscape (CHL) number and the property was determined to contain a potential heritage resource.

2.5.1 Ontario Regulation 9/06

1. *The property has design value or physical value because it is a rare, unique, representative or early example of a style, type, expression, material or construction method.*

2. *The property has design value or physical value because it displays a high degree of craftsmanship or artistic merit.*

3. *The property has design value or physical value because it demonstrates a high degree of technical or scientific achievement.*

4. *The property has historical value or associative value because it has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community.*
5. *The property has historical value or associative value because it yields, or has the potential to yield, information that contributes to an understanding of a community or culture.*
6. *The property has historical value or associative value because it demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.*
7. *The property has contextual value because it is important in defining, maintaining or supporting the character of an area.*
8. *The property has contextual value because it is physically, functionally, visually or historically linked to its surroundings.*
9. *The property has contextual value because it is a landmark.*

(Government of Ontario 2023)

2.6 Assessment of Impacts

Where a component of a previously identified or potential built heritage resource or cultural heritage landscape was situated within the Study Area, the impacts of the proposed undertaking were evaluated. The impacts, both direct and indirect, are evaluated according to InfoSheet #5.

Seven potential negative effects have been identified, including:

1. Destruction of any, or part of any, significant heritage attributes or features
2. Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance
3. Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden
4. Isolation of a heritage attribute from its surrounding environment, context, or a significant relationship
5. Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features
6. A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces
7. Land disturbances such as a change in grade that alters soils and drainage patterns that adversely affect an archaeological resource

(Government of Ontario 2006)

In addition to direct effects related to destruction, the potential for indirect effects resulting from vibration due to construction and operation activities and the transportation of Project components and personnel were also evaluated. Although the existing effect of traffic and construction vibrations on historic period structures is not fully known, negative effects have been demonstrated on buildings with a setback of less than 40 metres from the curbside (Crispino and D'Apuzzo 2001; Ellis 1987; Rainer 1982; Wiss 1981; National Park Service 2001). The proximity of Project components to built heritage resources and cultural heritage landscapes was considered in this assessment, particularly those within 50 metres, to encompass a wide enough buffer zone to account for built resources less than 40 metres from curbside or potential Project activities. The 50-metre buffer represents a conservative approach to effects identification.

Indirect impacts resulting from land disturbances apply to archaeological resources, which are beyond the scope of this assessment. An Archaeological Assessment has been prepared under separate cover which addresses the archaeological potential of the Study Area and includes recommendations for further work (Stantec 2023). No further consideration to archaeological resources is provided in this report.

3 Existing Conditions

3.1 Background and Historical Research

3.1.1 Introduction

The Study Area is located in southwestern Ontario in the Town of Kingsville, Essex County. The Study Area includes the Project Location and a 50-metre buffer surrounding the Project Location. The Study Area is historically located in the former Township of Gosfield in the following lots and concessions:

- Lot 4, Concession 1 Western Division
- Lot 5, Concession 1 Western Division
- Lot K, Concession 2 Western Division

The Town of Kingsville is located on the traditional territory of the Three Fires Confederacy (Ojibwe, Potawatomie, and Odawa) (Town of Kingsville 2022). The Study Area and Town of Kingsville is located on land covered under Treaty 2, also known as the McKee Purchase. This treaty was signed on May 19, 1790, between representatives of the Crown and certain Indigenous peoples. Land covered under Treaty 2 stretches from the Detroit River in the west to Middlesex and Elgin counties in the east (Ministry of Indigenous Affairs 2023).

3.1.2 Physiography

The Study Area is situated within the St. Clair Clay Plain physiographic region of southern Ontario. The St. Clair Clay Plains is an extensive area of clay plains covering 5,880 square kilometres in Essex, Kent, and Lambton counties. The region is mainly flat with little relief, lying between approximately 175 to 215 metres above sea level. The area during the glacial period was covered by Glacial Lake Whittlesey and Lake Warren, which failed to leave deep stratified beds of sediment on the underlying clay (Chapman and Putnam 1984: 147). The majority of the region has a history of poor drainage, which required the installation of dredged ditches and tile underdrains to have satisfactory conditions for crop growth and tillage (Chapman and Putnam 1984: 149).

The climate of the St. Clair Clay Plain is similar to conditions in the northern part of the United States Corn Belt. The growing season for the St. Clair Clay Plain is prolonged due to the clay plain's position between Lake Erie and Lake St. Clair. The most important crops in the region are corn, soybeans, hay, and winter wheat. The warm climate, long growing season, and sandy soil along the Lake Erie shoreline is also conducive to the cultivation of crops such as asparagus, tomatoes, strawberries, cucumbers, melons, and tender fruits (Chapman and Putnam 1984: 149).

3.1.3 Township of Gosfield

Survey and Settlement

Colonial settlement of the Township of Gosfield began in the 1787 when land along the shoreline of Lake Erie east to Mill Creek was allotted for settlement. This stretch of land would mark the beginnings of the future Townships of Colchester and Gosfield. Many of these first settlers along the shoreline were Hessian veterans of the American Revolution or United Empire Loyalists from Pennsylvania of German descent (Lajeunesse 1960: cviii). The lots along the shoreline to Mill Creek, including part of the Study Area, were laid out in the long and narrow French style, which allowed many settlers to possess waterfront lots. This use of this settlement method also reflected the existing land use patterns along the Detroit River, which was initially settled by the French and ceded to the British after the Seven Years War.

This area of land along Lake Erie was originally called the “New Settlement” to distinguish it from the lands along the Detroit River (LaJeunesse 1960: cviii; County of Essex 1992: 38). In 1792, the County of Essex and Township of Gosfield were formed by an act of Lieutenant Governor John Graves Simcoe (Lajeunesse 1960: lxxxvii). The Township of Gosfield was named after the Village of Gosfield in Essex, England (Gardiner 1899: 342). By 1794, the land surveyor Patrick McNiff noted that most of the lots along the shoreline had been settled (Lajeunesse 1960: 357).

The remainder of the township was surveyed between 1805 and 1823. Unlike the lots west of Mill Creek, this part of the township was surveyed using the double front system (Association of Ontario Land Surveyors 1996). The double front system was used in Upper Canada between 1815 and 1829. Lots surveyed using this method were usually 200 acres in size and contained a road allowance in front of each concession (Plate 1). This allowed lots to be subdivided into 100 acre parcels (Weaver 1968: 16).



Plate 1: Double Front Survey System (Dean 1969)

For much of the first half of the 19th century, the settlement of Gosfield Township was supervised by Colonel Thomas Talbot. Talbot was instrumental in the settlement of 26 townships in southwestern Ontario. In general, the southern parts of the township were settled more quickly due to their better drainage. Settlement efforts in the north part of the township were also complicated by the large block of Crown and Clergy Reserves. By 1818, 50% of the land in the southern part of the township had been patented (Clarke 1982: 109, 112, 118). Between 1821 and 1823, the Talbot Road was opened in Gosfield Township by Mahlon Burwell, a close associate of Talbot (Clarke 1982). This roadway soon became well settled and served as an important transportation route to the Detroit River (County of Essex 1992: 38).

19th Century Development

In 1846, *Smith's Canadian Gazetteer* described the Township of Gosfield as "well settled" and noted that 5,030 acres of land were under cultivation. About half the land in the township was described as good quality and the poor drainage of the remainder was noted. The township's population was about 1,338 and contained a foundry, two steam mills, two sawmills, one grist mill, a tannery, a store, a tavern, and an ashery. The locus of settlement in the township was along Cedar Creek (Smith 1846: 66). In 1867, the hamlet along Cedar Creek was named Kingsville. The community is named in honour of Colonel James King, an early settler who was instrumental in the establishment of the community (Kingsville Centennial Committee 1952: 16).

European settlement of the northern half of Gosfield Township began in earnest in the 1840s as formerly reserved lots were sold by the Canada Company. By 1846, half the land in the northern half of the township had been patented and this number reached 75% by 1862 (Clarke 1982: 110). The community served as a shipping port on Lake Erie and a supply centre for local farmers. Fishing was also an important industry in Kingsville during the 19th century and large quantities of perch, pickerel, and whitefish were harvested from Lake Erie (County of Essex 1992: 45). In 1871, the township's population was recorded as 2,994. That year, the township contained 442 farmsteads on 32,669 acres of land. However, drainage remained an issue and only 17,617 acres of land was considered improved. This included 11,302 acres of crops, 5,452 acres of pasture, and 863 acres of gardens or orchards (Census of Canada 1871).

In 1878, Kingsville was incorporated as a Village and the population of the village was recorded as 863 in 1881 (Dominion Bureau of Statistics 1953; Kingsville Centennial Committee 1952: 19). During the 1880s, discussions began in the township and Kingsville about funding the construction of a railway. In 1886, a plebiscite was held and voters in Gosfield Township's southern half voted in favour of the railway. The proposed railway line would run along the shoreline between Walkerville, Harrow, Kingsville, and Leamington. Voters in the north half of Gosfield Township believed they would derive little economic benefit from the railway and voted against the proposal. As a result, the Township of Gosfield was divided into Gosfield North Township and Gosfield South Township in 1887 (County of Essex 1992: 41). The railway was completed through Kingsville by 1889 and was operated by Hiram Walker and known as the Lake Erie and Detroit River Railway. Walker was an important distiller and businessman in the Windsor area. Hiram Walker also realized the potential of Kingsville as a tourist destination and constructed the Mettawas Hotel at Kingsville in 1891 (County of Essex 1992: 46). In 1891, the population of Gosfield North Township was recorded as 1,852, the population of Gosfield South Township was 2,219, and the population of Kingsville was 1,335 (Dominion Bureau of Statistics 1953).

By the end of the 19th century, drainage improvements brought vast quantities of land in Essex County and Kent County into cultivation. To improve drainage, the Ontario government passed a series of legislation to facilitate the construction of drainage systems in municipalities. These new laws allowed individual landowners to construct drainage systems and provided loans to municipalities to undertake drainage improvements (Irwin 1987).



20th Century Development

In 1901, Kingsville was reincorporated as a town and contained a population of 1,537 (Dominion Bureau of Statistics 1953). In the first decades of the 20th century, the town's infrastructure was improved when electrical and natural gas service was introduced. The inexpensive natural gas-powered industries in the community including mills, furniture factories, and an evaporating plant (County of Essex 1992: 46; Kingsville Centennial Committee 1952: 22-24). By 1911, the population of Gosfield North Township was 1,955, Gosfield South Township was 2,412, and Kingsville was 1,427 (Dominion Bureau of Statistics 1953). While the population of Gosfield North and Gosfield South townships remained relatively steady in the first decades of the 20th century, the amount of acreage under cultivation had substantially increased due to agricultural mechanization and drainage improvements. In 1911, the Township of Gosfield North contained 428 farmsteads on 27,067 acres of occupied land. This amount included 22,031 acres of improved land. That same year, the Township of Gosfield South contained 524 farmsteads on 30,593 acres of occupied land. This amount included 24,908 acres of improved land (Census of Canada 1911). The Townships of Gosfield South and Gosfield North and the Town of Kingsville continued to experience moderate growth through the first half of the 20th century. In 1941, Gosfield North's population was 2,457, Gosfield South's population was 2,955, and Kingsville's population was 2,317 (Dominion Bureau of Statistics 1953).

Both townships and the Town of Kingsville continued to grow in the decades following the Second World War. Beginning in the 1950s, several automotive industries opened in Kingsville and supplemented the existing fishing and tourist industries (County of Essex 1992: 46). Between 1961 and 1992, the population of Kingsville grew from 3,041 to about 5,800 (Dominion Bureau of Statistics 1962; County of Essex 1992: 46). The Township of Gosfield North remained predominantly rural and agricultural through the remainder of the 20th century. Between 1961 and 1992 the population of Gosfield North grew from 2,979 to about 4,200 (Dominion Bureau of Statistics 1962; County of Essex 1992: 40). Gosfield South also remained predominantly rural and agricultural. However, it generally experienced more growth due to its proximity to the lakeshore and Town of Kingsville. During the late 20th century, the wine industry also became increasingly important in Gosfield South Township. Between 1961 and 1992, the population of Gosfield South increased from 3,257 to 7,536 (Dominion Bureau of Statistics 1962; County of Essex 1992: 41).

While there had been discussions about restructuring the municipalities of Essex County since at least the 1970s, no efforts to amalgamate or restructure municipal governments were undertaken until the 1990s (Windsor Star 1992). Beginning in the mid-1990s, the provincial government embarked on a program of municipal restructuring to reduce the total number of municipalities in Ontario. Between 1996 and 2001, the number of municipalities in Ontario was reduced from 815 to 471 (Rusk 2000). Effective January 1, 1999, the Township of Gosfield North, Township of Gosfield South, and the Town of Kingsville was amalgamated into the new Town of Kingsville (Ministry of Municipal Affairs and Housing 2021). In 2021, the population of Kingsville was recorded as 22,118, an increase of 2.6% since 2016 (Statistics Canada 2023).



3.1.4 Site History

Lot 3, Concession 1 Western Division

Lot 3, Concession 1 Western Division was granted by the Crown in 1798 to William Wright. In 1800, Wright sold the lot to Peter Malott (also spelled Malotte) (OnLand 2023a). Malott was born in Maryland and relocated to Detroit in 1783 with his three brothers and two sisters. He originally settled on Grosse Ille in present-day Michigan but later reportedly traded a cow to a United Empire Loyalist for a land grant. Malott built a log cabin on the lot and died in an accident in 1815 (Kingsville Centennial Committee 1952: 66). His son, also named Peter, continued to occupy the lot and many descendants of the Malott family continued to reside in Gosfield Township and Kingsville into the 20th century (Kingsville Centennial Committee 1952: 68). The Study Area is partially located in the north half of the lot.

In 1842, land in the north half of the lot was sold via sheriff's deed to Thomas Park (OnLand 2023a). The Census of 1851 does not indicate that anyone with the name Thomas Park resided in Essex County. In 1855, Park and his relatives sold 90 acres of land in the north half of the lot to Thomas Conklin (OnLand 2023a). The Census of 1861 listed Thomas Conklin as a 42-year-old farmer born in Upper Canada residing in a one- and one-half storey frame house. He lived with his wife Susanne, age 42; daughter Isabella, age 19; daughter Eliza, age 16; daughter Julia, age 14; daughter Mona, age 10; son Arthur, age 8; and Jacob Conklin, age 66. The census record also indicated that Thomas had died that year (Library and Archives Canada 1861).

Historical mapping from 1877 shows that the Conklin farm was divided between Anne Conklin (likely an abbreviation of Susanne) and D. [David] Conklin. The mapping shows a structure associated with Anne Conklin's parcel outside of the Study Area along present-day Main Street West/County Road 20. The mapping also depicts two structures along the road associated with the community of Kingsville (Figure 3). Historical mapping 1881 does not depict any structures or occupants on lot 3 but indicates the part of the lot along present-day Main Street West/County Road 20 was located within the borders of the Village of Kingsville (Figure 4). However, this does not necessarily mean that no structures were present on the lot. Mapping from this period often only included structures and landowners who subscribed to the *Dominion Atlas* in which these illustrated historical township maps were added as a supplement (Caston 1997; Gentilcore 1984). According to land registry records, members of the Conklin family remained on the lot until the mid-20th century (OnLand 2023a). Topographic mapping from 1913 and 1940 shows that Lot 3, Concession 1 Western Division remained rural outside Kingsville and present-day Main Street West/County Road 20 (Figure 5 and Figure 6). Topographic mapping from 1960 and 1970 shows that development in Lot 4, Concession 1 Western Division along present-day Main Street West/County Road 20 intensified during the mid-20th century as the community of Kingsville continued to grow (Figure 7).

Lot 4, Concession 1 Western Division

Lot 4, Concession 1 Western Division was granted by the Crown in 1798 to Peter Malott (also spelled Malotte) (OnLand 2023b). The lot was previously occupied by the squatters Robert Dennison and Francis Robert (Kingsville Centennial Committee 1952: 11). Beginning in the 1840s, Peter Malott began to subdivide parts of Lot 4, Concession 1 Western Division.

Historical mapping from 1877 shows the parts of the lot within the Study Area occupied by J.J. [John] Malotte [Malott], A. [Alexander] McDonald, W. [William] G. Fox, and another member of the Malotte family whose first name is not visible due to physical damage to the source material (Figure 3). The Census of 1881 enumerated John J. Malott as a 45-year-old farmer. He lived with his wife Hannah, age 40; son Alzon, age 22; daughter Ella, age 20; daughter Cora, age 17; son Burwell, age 15; son Herbert, age 12; son Martin, age 7; son Henley, age 5; and daughter Marnie, age 2 (Library and Archives Canada 1881). The historical mapping depicts a structure on Mallot's part of the lot located to the south of the Study Area along present-day County Road 50.

Alexander McDonald was a store owner and postmaster in Kingsville between 1854 and 1861. The post office was located outside of the Study Area at the southwest corner of present-day Division Street and Main Street (Kingsville Centennial Committee 1952: 29). The Census of 1871 does not list an Alexander McDonald in Gosfield Township or Kingsville and the Census of 1881 indicates that McDonald had relocated to Colchester South Township. Additionally, while McDonald was depicted on historical mapping from 1877, there is no record of him owning land within the lot on land registry records. Historical mapping indicates McDonald occupied a structure on the lot outside of the Study Area along present-day Main Street West/County Road 20.

The Census of 1881 listed William Fox as a 44-year-old farmer. He lived with his wife Eliza, age 50; daughter Jane, age 16; and son Gordon, age 18 (Library and Archives Canada 1881). William G. Fox served as one of the first Reeves of Kingsville (Kingsville Centennial Committee 1952: 27).

Historical mapping from 1881 indicates that part of Lot 4, Concession 1 Western Division, including land within the Study Area was located within the borders of the Village of Kingsville. The mapping also depicts W.G. Fox as owning 31.5 acres in the north half of the lot (Figure 4). The rest of the lot is blank on the mapping. Based on land registry records, members of the Fox and Malott families continued to reside on parts of Lot 5, Concession 1 Western Division into the mid-20th century (OnLand 2023b). Topographic mapping from 1913 and 1940 shows that Lot 4, Concession 1 Western Division remained rural and just outside the more built-up areas of Kingsville (Figure 5 and Figure 6). Topographic mapping from 1960 and 1970 shows that development in Lot 4, Concession 1 Western Division along present-day Main Street West/County Road 20 intensified during the mid-20th century as the community of Kingsville continued to grow (Figure 7).

Lot 5, Concession 1 Western Division

Lot 5 Concession 1, Western Division was also patented to Peter Malott. He received two separate patents for the lot dated 1803 and 1808 (OnLand 2023c). Historical mapping from 1877 shows the parts of the lot within the Study Area as divided between J.J. Malotte, Mrs. A. McDonald, S. Fox, and a member of the Malottee family whose first name is not visible due to damage to the source material. The only structure depicted on the lot is within the Study Area near the northwest corner of the intersection of present-day Main Street West/County Road 20 and County Road 50 (Figure 3). Information on J.J. Malotte and the McDonald family is provided in the discussion of the previous lot. It is unclear if S. Fox refers to Solomon Fox or Samuel Fox, as both are enumerated in census records for Gosfield Township. In addition, land registry records indicate the property within the lot was owned by W.G. Fox, complicating efforts to determine which member of the Fox family resided on the lot. Historical mapping from 1881

depicts no structures or occupants on the lot (Figure 4). Members of the Malott family continued to own land on Lot 5, Concession 1 Western Division into the 1930s (OnLand 2023c).

Topographic mapping from 1913 and 1940 shows that Lot 5, Concession 1 Western Division remained rural except for an electrical transmission line and a structure at the northwest corner of present-day Main Street West/County Road 20 and County Road 50 (Figure 5 and Figure 6). Topographic mapping from 1960 and 1970 shows no structures present on the lot except along present-day Main Street West/County Road 20 (Figure 7).

Lot 6, Concession 1 Western Division

Lot 6, Concession 1 Western Division was patented by the Crown to Joseph Malott in 1826 (OnLand 2023d). Joseph Malott was the eldest son of Peter Malott and farmed Lots 6 and 7 of Concession 1, Western Division. He was a prominent member of the local Methodist church and served as a preacher. He married Mary McKenzie and had two sons and three daughters (Kingsville Centennial Committee 1952: 66). The Census of 1851 did not list Joseph Malott residing in Gosfield Township and by 1861 he was recorded living in the home of his daughter Christeen, who had married into the Golden family (Library and Archives Canada 1861).

In 1870, Malott's heirs sold the parcel of land containing the Study Area to William Maynard (OnLand 2023d). Historical mapping from 1877 depicts Maynard as the occupant of the lot while historical mapping from 1881 depicts no occupants within the Study Area (Figure 3 and Figure 4). The Census of 1871 listed William Maynard as a 55-year-old farmer. He lived with his wife Frances, age 53; son Melvin, age 27; son Samuel, age 22; and son Arthur, age 17 (Library and Archives Canada 1871). Between 1876 and 1877, William Maynard conveyed and quit claim on the part of the lot within the Study Area to Melvin Maynard (OnLand 2023d). Based on land registry records, Melvin died in the early 1890s and the parcel of land within the Study Area was sold to John Bratt (OnLand 2023d).

In 1902, Bratt sold the parcel to Louisa Golden (OnLand 2023d). The Census of 1911 listed Louisa Golden as residing in the household of Albert J. Golden, who resided on the north part of Lots 6 and 7, Concession 1 Western Division. Albert Golden was a 49-year-old farmer who lived with his wife Louisa, age 48; son Percy, age 19; daughter Mildred, age 16; daughter Myrtle age 14; son Cecil, age 12; and the 21-year-old laborer James Ross (Library and Archives Canada 1911). Members of the Golden family continued to reside on the parcel into the mid-20th century (OnLand 2023d). Topographic mapping from 1913 shows a structure at the approximate location of the westerly residence at present-day 389 County Road 20 (Figure 5). This residence was likely built during ownership of Melvin Maynard or Louis Golden.

Lot K, Concession 2 Western Division

Lot K, Concession 2 Western Division was patented by the Crown to Euphemia Wigle in 1822 (OnLand 2023e). Euphemia Wiggle (nee Miller) was the wife of Joseph Wigle. He was the son of John Wendel Weigele (later Anglicized Wigle). John was born in Germany in 1753 and at age 14 stowed away on a boat bound for New York. On the voyage, he was discovered and forced into seven years of indentured servitude by the captain of the vessel. During the American Revolution, Wigle did not enter military service, but his neighbours suspected him of Loyalist sympathies. After facing persecution, he moved to

Detroit and later to Canada. Members of the Wigle family married into the Malott family and Fox family, adjacent landowners within the Study Area (Kingsville Centennial Committee 1952: 77-78). Historical mapping from 1877 shows that the part of the lot within the Study Area was occupied by members of the Malott family (Figure 3). While the first names of these members of the Malott family are not visible due to damage to the source material, land registry records indicate Wiggle sold parcels of land in the lot to Ezra and Peter Malott (OnLand 2023e).

The Census of 1881 listed Ezra Malott as a 47-year-old farmer. He lived with his wife Jeanette, age 43; son Morris, age 26; daughter Nora, age 22; daughter Sarah, age 19; and the farm hands Henry Flosse and Eddy Brown. Peter Malott was listed as a 77-year-old farmer. He lived with his wife Judith, age 76 and the laborer Charles Miller (Library and Archives Canada 1881). Historical mapping from 1881 depicts L. Malott as the occupant of land in the east half of the lot (Figure 4). Based on land registry records, this likely refers to Leonard Malott, who took out a mortgage on a part of the south section of lot in 1886 (OnLand 2023e). The Census of 1881 listed Leonard Malott as a 39-year-old farmer. He lived with his wife Martha, age 35; son Frank, age 17; daughter Maggie, age 15; son Peter, age 10; son James, age 8; daughter Fannie, age 6; daughter Mabel, age 4; and daughter Edna, an infant (Library and Archives Canada 1881). Members of the Malott and Wigle family continued to reside on the lot into the mid-20th century (OnLand 2023c). Topographic mapping from 1913, 1940, 1960, and 1970 show that the lot within the Study Area remained rural and contained no structures (Figure 5 to Figure 7).

Lot L, Concession 2 Western Division

The Study Area is located in the south half of Lot L, Concession 2. This part of the lot was patented by the Crown in 1843 to Prideaux Girty (OnLand 2023f). He was the son of Simon Girty and Catherine Malott. Simon was well known for his close connections with various Indigenous peoples and served as an ambassador who negotiated the Dunmore Treaty in 1774. During the American Revolution, he served with Indigenous allies of the Crown. After the war, he moved to Detroit and later to Amherstburg. Prideaux was active in the Kingsville community and served as superintendent of schools and a village councillor (Kingsville Centennial Committee 1952: 57; 26). Prideaux likely received the Crown patent to the lot as a speculative interest and that same year sold the lot to John Wigle Senior (OnLand 2023f).

In 1852, John Wigle sold the parcel of land to Peter Wigle and his wife. That same year the west half of the south half of Lot L, which contains part of the Study Area, was sold to James King (OnLand 2023f). The Census of 1861 listed James King as a 57-year-old customs collector. He lived with his wife Sarah, age 57; son James W., age 26; daughter Helena, age 23; son Alfred, age 21; and another son whose name is illegible (Library and Archives Canada 1861). In 1876, James King sold the parcel of land containing the Study Area to his son Alfred (OnLand 2023f). Historical mapping from 1877 shows the King family as the occupants of the part of the lot within the Study Area. The mapping depicts a structure to the east of the Study Area (Figure 3).

In 1885, Alfred King sold the parcel to Michael Wigle. The Census of 1891 listed Michael Wigle as a 74-year-old. He was born in Ontario and his occupation is illegible. He lived with his wife Demarius, age 74; daughter Laura, age 28; daughter Heather, age 22; and the farm laborer Robert Baldwin, age 29 (Library and Archives Canada 1891). In 1907, Wigle sold the parcel of land to Zilla Scratch. Members of the Scratch family continued to reside on the parcel into the mid-20th century (OnLand 2023f). Topographic mapping from 1913, 1940, 1960, and 1970 show that the lot within the Study Area remained rural and contained no structures (Figure 5 to Figure 7).

3.1.5 Summary of Key Findings

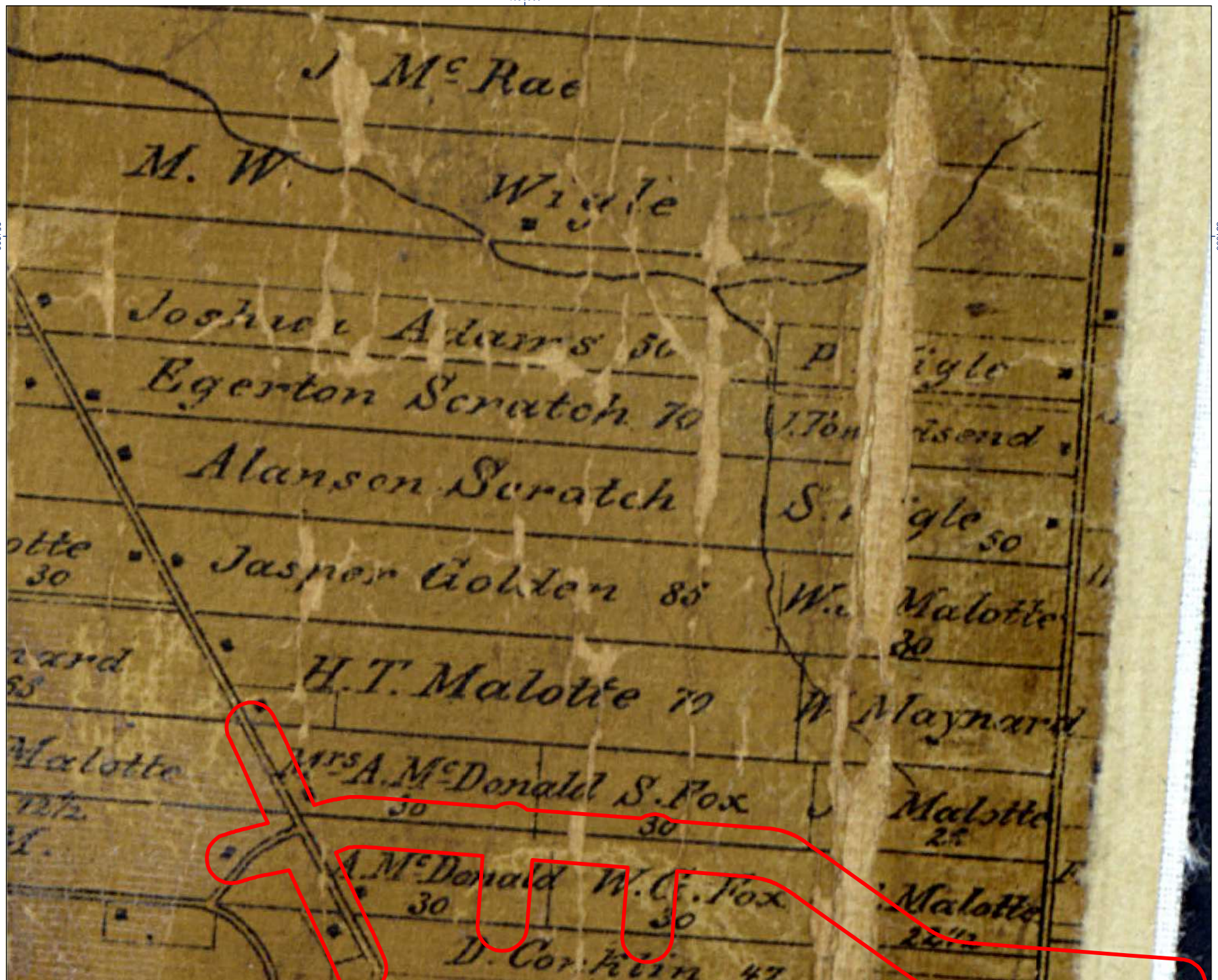
- The Study Area is situated in the south part of the former Township of Gosfield and was among the earliest settled parts of the township. Many of these early settlers were United Empire Loyalists and their descendants.
- Many of the lots within the Study Area front Lake Erie. As a result, much of the early to mid-19th century development in these lots took place to the south of the Study Area, closer to the Lake Erie shoreline.
- To the immediate east of the Study Area, the community of Kingsville developed and was incorporated as a village in 1878 and a town in 1901.
- Much of the existing housing stock within the Study Area was built beginning in the late 19th century and into the mid-20th century as the community of Kingsville expanded west along Main Street West.
- Effective January 1, 1999, the Townships of Gosfield North and Gosfield South and Town of Kingsville were amalgamated into the new Town of Kingsville.

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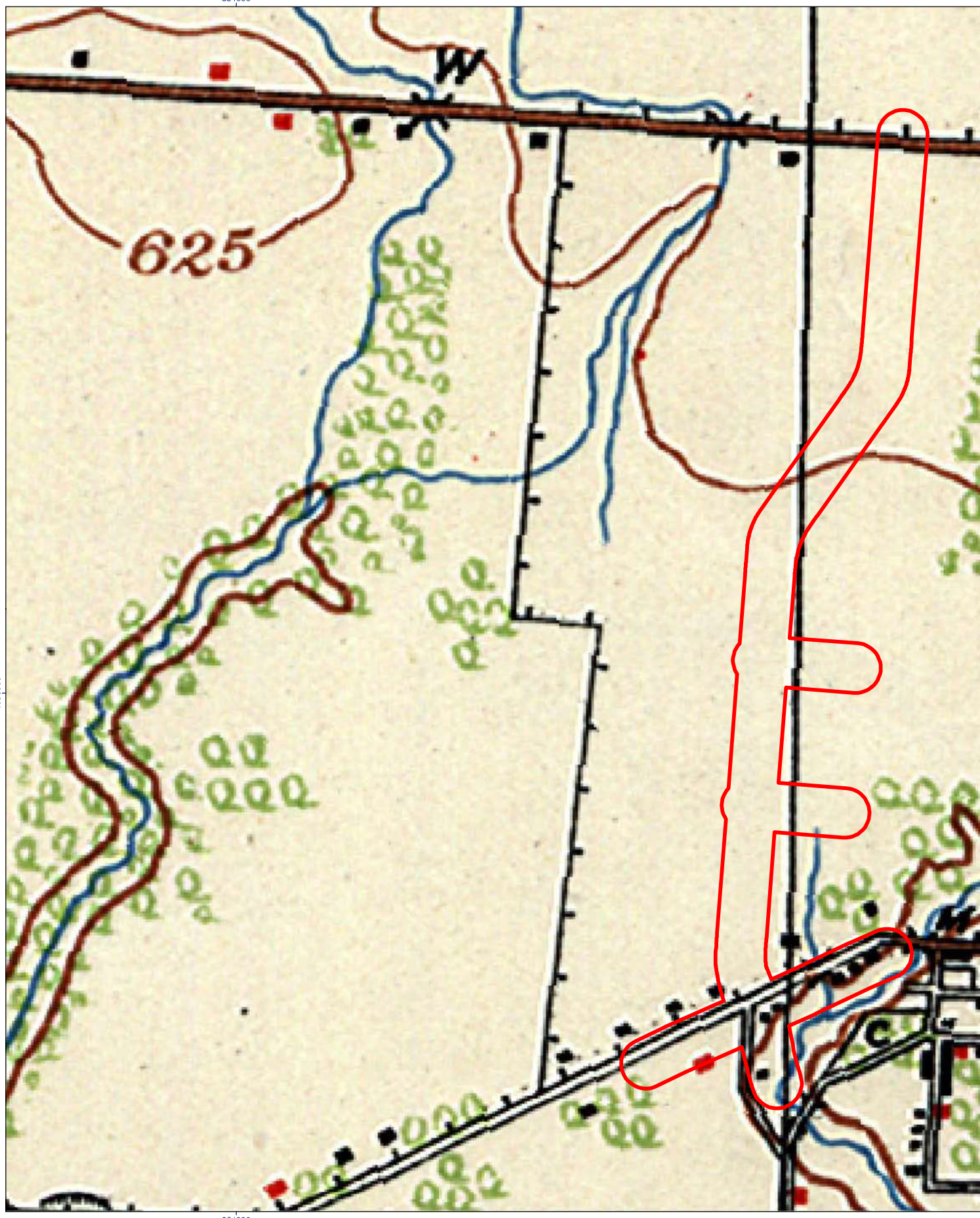


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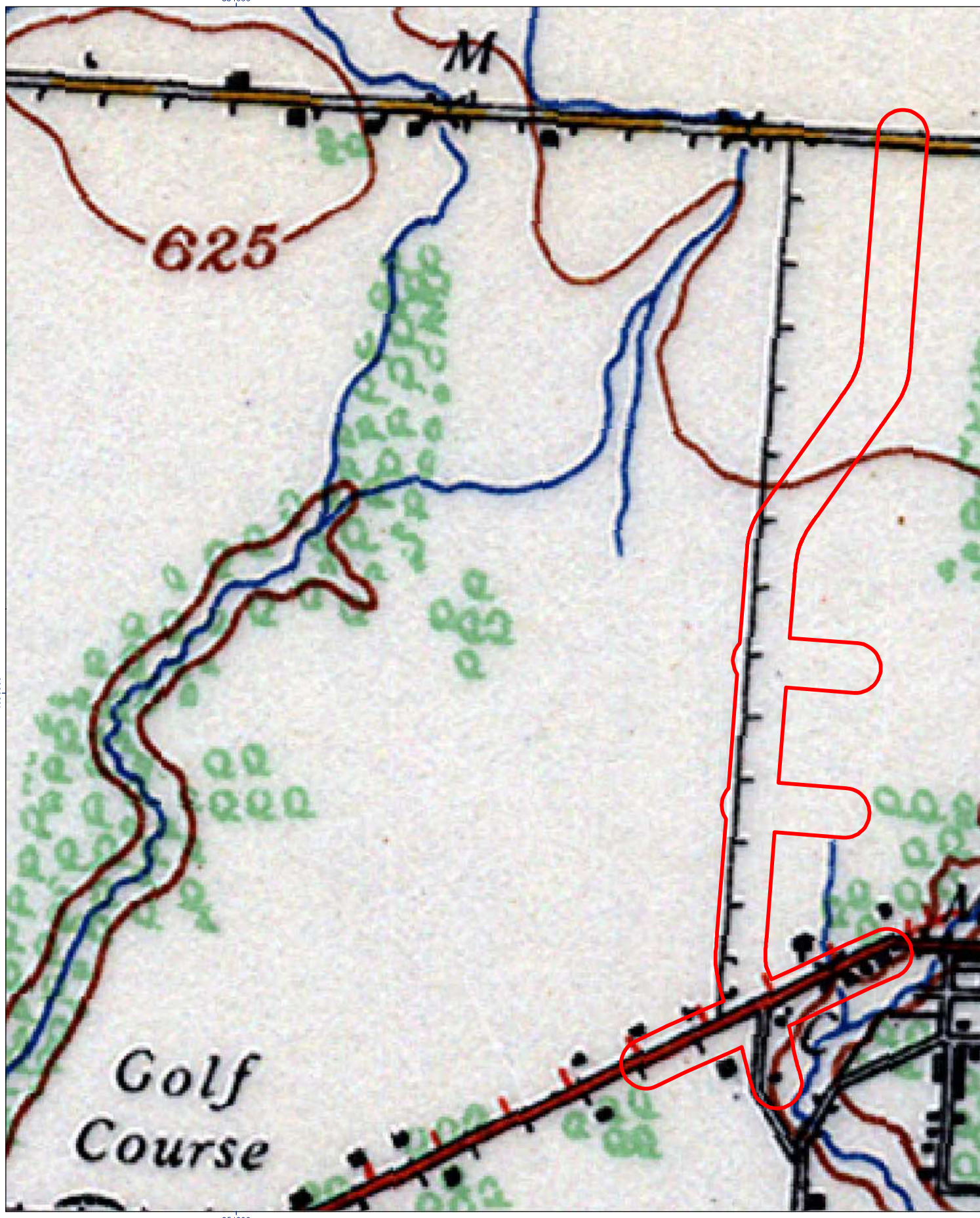
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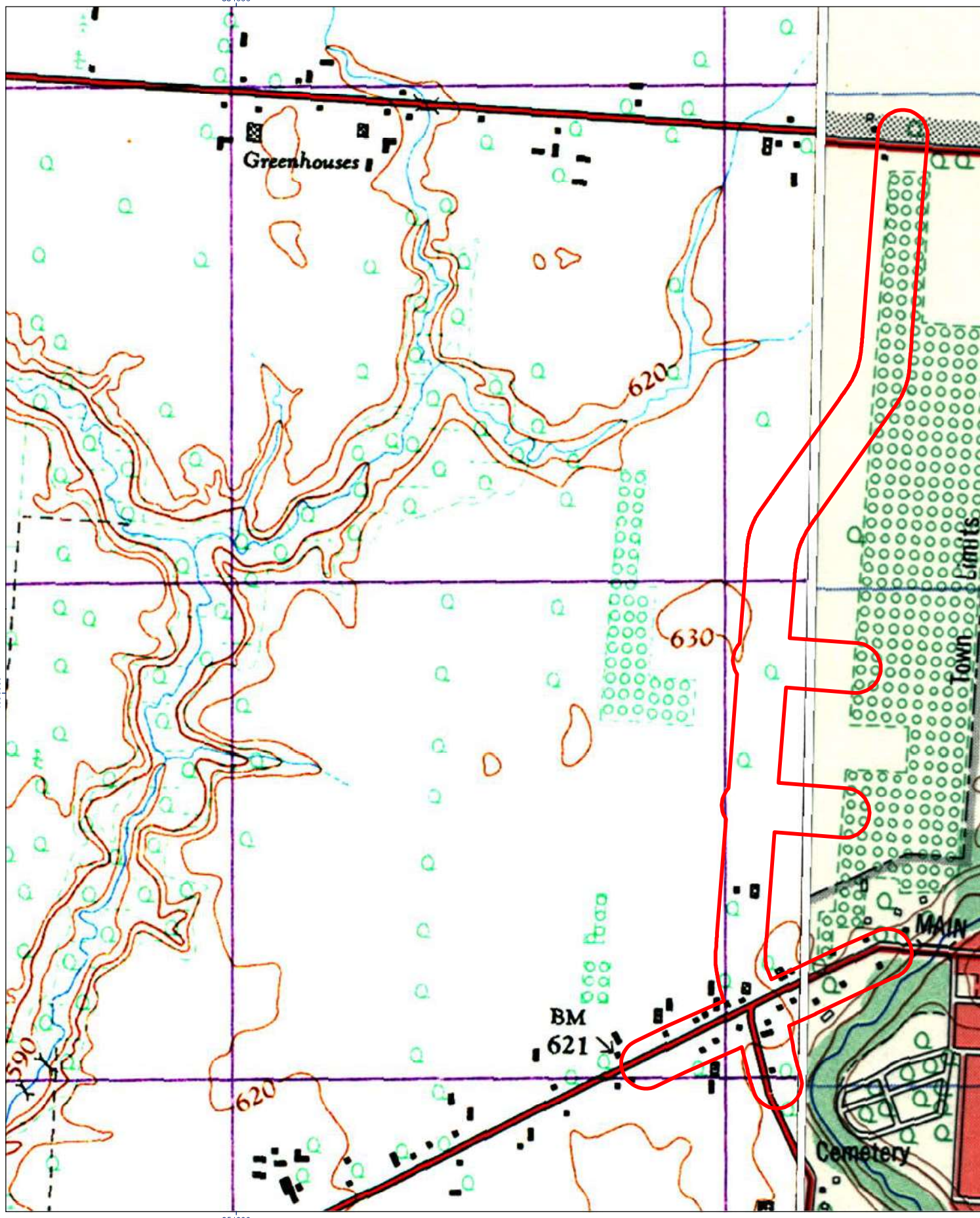
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3.2 Municipal and Agency Requests

To identify known built heritage resources or cultural heritage landscapes, the MCM, Ontario Heritage Trust (OHT), and the Town of Kingsville were contacted, and municipal heritage registers were reviewed. The results of the information requests are presented in Table 1.

Table 1: Information Request Results

Organization	Contact	Results
MCM	Karla Barboza, Team Lead, Heritage	MCM is not aware of any provincial heritage properties within or adjacent to the Study Area.
OHT	Kevin Baksh, Provincial Heritage Registrar	The OHT does not have any conservation easements or trust-owned properties within or adjacent to the Study Area.
Town of Kingsville	Sandra Kitchen, Deputy-Clerk Municipal Heritage Register (available digitally)	189 Main Street West is designated under Part IV of the OHA. 172 Main Street West, 289 Main Street West, 190 Main Street West, and 389 County Road 20 are listed heritage properties on the municipal heritage register (expiration date January 1, 2025).

3.3 Identification of Known and Potential Built Heritage Resources and Cultural Heritage Landscapes

As described in Section 2.4, a windshield and pedestrian survey of the Study Area was undertaken to identify potential built heritage resources and cultural heritage landscapes within the Study Area and confirm the presence of previously identified protected properties. Where identified, the site was photographically documented from publicly accessible roadways, and its location was digitally recorded.

The Study Area is situated along Main Street West, County Road 20, Heritage Road, Fox Lane, and Road 2 West. Main Street West is a two-lane roadway paved with asphalt. Between the eastern boundary just west of Heritage Road, the roadway contains concrete curbs and a concrete sidewalk along the north side of the roadway typical to roadways in urban and suburban contexts. Just west of 334 Main Street West, the roadway becomes County Road 20 and assumes a character more typical to rural roadways. This includes the use of gravel shoulders, no sidewalks, and no curbs. The character of the area east of 334 Main Street West is residential and commercial and consists of late 19th century to contemporary residences on lots of varying sizes. The commercial structures are clustered near the intersection of Main Street West and Heritage Road and consist of mid-20th century to late 20th century commercial buildings (Photo 1 and Photo 2).

Heritage Road is a two-lane asphalt paved roadway with concrete curbs and concrete sidewalks. The character of the roadway within the Study Area is suburban and consists of a mix of mid-20th century commercial and residential structures on variously sized lots (Photo 3). Fox Lane is a one-lane gravel roadway surrounded predominantly by agricultural fields (Photo 4). Road 2 West is a two-lane asphalt paved road with narrow gravel shoulders and a ditch along the north side. The character of the roadway is agricultural and consists of early to mid-20th century residences and agricultural fields (Photo 5).



Photo 1: Main Street West's suburban streetscape, looking west



Photo 2: County Road 20's rural streetscape, looking east



Photo 3: Heritage Road, looking north



Photo 4: Fox Lane, looking north



Photo 5: Road 2 West, looking east

As described in Section 2, known and potential built heritage resources and cultural heritage landscapes were assessed based on the MCM *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (MCM 2016), which was supplemented by historical research, field investigations, and professional judgement. Properties with buildings or structures 40 or more years old were field documented and screened as having potential CHVI if they met one or more of the criteria prescribed in *O. Reg. 9/06*. Also, each property was considered both as an individual built heritage resource and as part of a larger potential cultural heritage landscape. If a property contained a known or potential built heritage resource or cultural heritage landscape, the built heritage resource (referred to as BHR) and cultural heritage landscape (referred to as CHL) was assigned a number. A total of 31 properties within the Study Area were screened. Following application of the screening criteria, five built heritage resources were identified, all previously identified built heritage resources that are listed on the Town of Kingsville Heritage Register. Properties screened and determined not to contain potential for CHVI consist of modern or early to mid-20th century structures which have been heavily modified through actions such as replacement cladding, replacement doors, replacement windows, and additions.

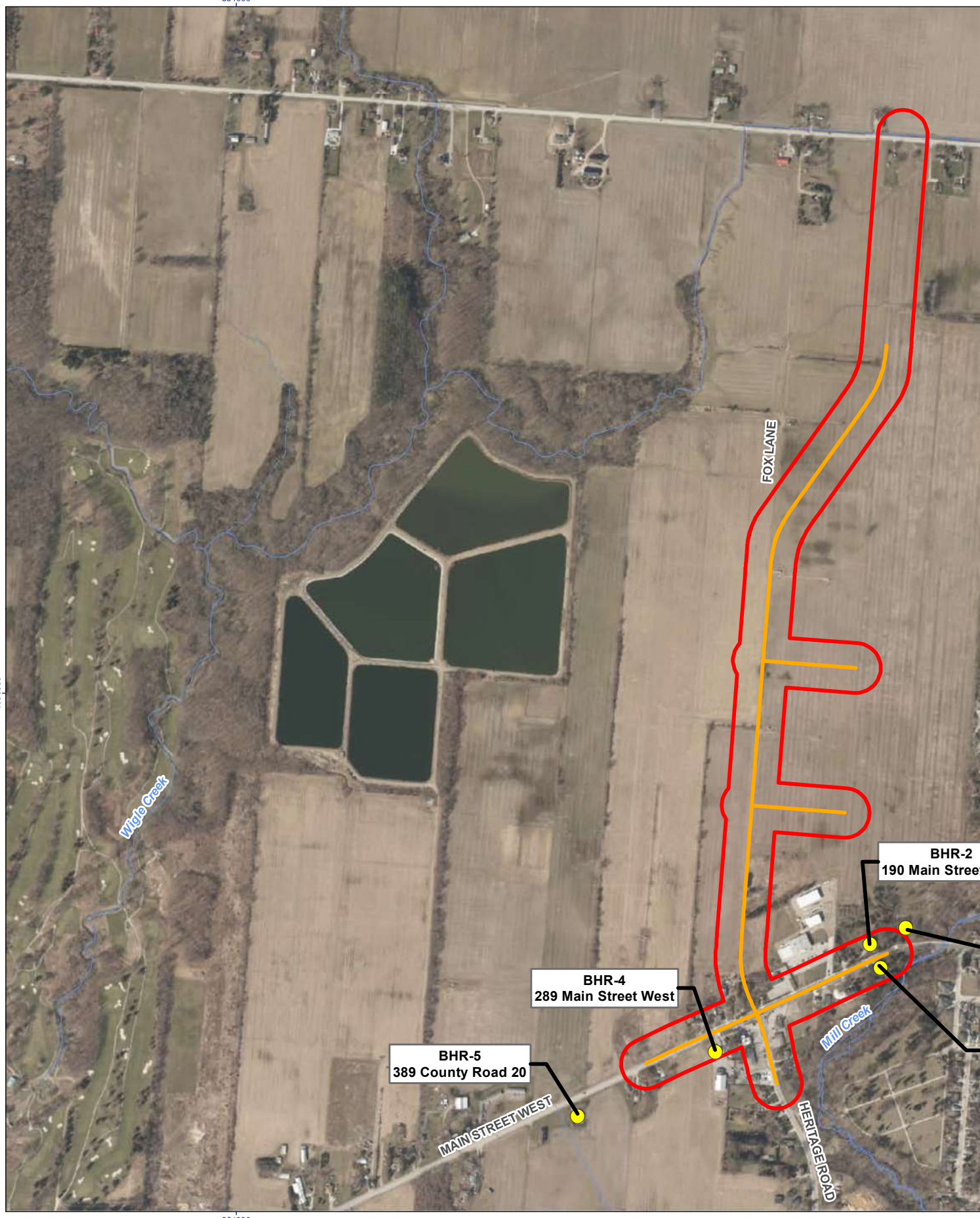
No cultural heritage landscapes were identified. While the Study Area contains several active agricultural properties, they were not considered cultural heritage landscapes as they remain active agricultural operations with circulation routes, modern structures, and farming methods that do not resemble 19th and early 20th century farmsteads in southern Ontario.

An inventory of the built heritage resources and cultural heritage landscapes identified within the Study Area through documentary research and field investigations is provided in the following section in Table 2. These identified built heritage resources and cultural heritage landscapes are mapped in Figure 8.

Table 2: Previously Identified or Potential Built Heritage Resources and Cultural Heritage Landscapes

Reference Number	Type of Property	Location	Heritage Recognition	Description of Kno
BHR-1	Residence	172 Main Street West	Listed property	This property contains a residence. The residence is a tw side gable roof clad in asphalt shingles. The front (south) The residence is clad in a mix of red brick, timber siding, modern windows with the first storey window openings c façade is symmetrical in composition and contains a moc a rise in elevation and contains a lawn, shrubs, mature d lawn and residence from the gravel driveway shared with The residence was likely built between 1900 and 1913 ba mapping. The residence has potential design value as a representa Craftsman design influence.
BHR-2	Residence	190 Main Street West	Listed property	This property contains a residence and outbuilding. The roof with a brick chimney and asphalt shingles. The exter the corner of the structure and along the roofline. The res 1/1 and 1/2 wood sash windows and red brick drip mould a pediment, fanlight, and balcony. The front façade conta contains a wood door and transom. The foundation of the stone wall with a metal railing, mature deciduous and con a lawn. To the north of the residence is an outbuilding wh The residence was likely built between 1878 and 1913 ba and topographic mapping. The residence has potential design value as a representa vernacular structure with Italianate and Colonial Revival potential design example as a rare example in Kingsville railing.
BHR-3	Residence	189 Main Street West	Designated under Part IV of the OHA (Bylaw 102-2013) (Town of Kingsville 2013)	This property contains a residence designated under Par House. The residence is a two-storey structure with a low materials and wood brackets. The exterior is red brick an the first and second storeys and dentils below the roofline storey windows contain decorative brickwork forming an contains a pediment with sidelights and a modern door. T or concrete medallions. The foundation is stone. The pro and a plaque noting the heritage status of the property. T garage. According to Bylaw 102-2013, the residence was built in The residence contains design value for its high degree o T. Conklin, a prominent citizen of Kingsville (Town of Kin

Reference Number	Type of Property	Location	Heritage Recognition	Description of Kno
BHR-4	Residence	289 Main Street West	Listed property	This property contains a residence and outbuilding. The steeply pitched cross gable roof with a brick chimney, as façade and west façade. The exterior of the residence is below the roofline. The second and half storey contains a modern sills. The windows have been infilled with siding segmental arch openings with modern windows, red brick openings have been infilled with brick. The residence cor supports and railings. The foundation is stone. To the so has been heavily modernized. The property is landscape The residence was likely built between 1878 and 1913 ba and topographic mapping. The residence contains potential design value as a repre
BHR-5	Residence and barn	389 County Road 20	Listed property	This property contains two residences, a garage, and a b a medium-pitched front facing gable roof, brick chimney, in modern siding, contains modern windows, a porch, an The westerly residence is a two- and one-half storey stru shingles with a brick chimney. The front (north) façade co cladding. The exterior of the residence is red brick. The r concrete lintels and sills. The front and east facades con columns and a concrete block balustrade. The rear façad is stone. To the south of the easterly residence is a conc The barn contains a gable roof clad in metal with lightnin evidence of red paint. The foundation is poured concrete between the foundation and timber exterior. The property is landscaped with a lawn, shrubs, mature t The easterly residence was likely built between 1940 and architectural style. The westerly residence was likely buil historical mapping, materials, and topographic mapping. The barn was likely built between 1900 and 1930 based The easterly residence contains potential design value as structure with Queen Anne design influence. The barn co of an early 20th century two bay barn.



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4 Preliminary Impact Assessment

4.1 Description of Proposed Undertaking

As part of a Municipal Class Environmental Assessment (MCEA), the Town of Kingsville (the Client) retained Stantec Consulting Ltd. (Stantec) to study the extension of Heritage Road to Road 2 West, two local road connecting links, and intersection improvements to meet long-term transportation needs. These improvements will align with the Town of Kingsville Transportation Master Plan recommendations to provide a safe and accessible multi-modal transportation network that will accommodate future growth and development in the Town.

4.2 Identification of Preliminary Potential Project Specific Impacts and Proposed Mitigation Measures

The results of the preliminary impact assessment and preparation of mitigation measures are presented in Table 3.

Table 3: Preliminary Impact Assessment and Mitigation Measures

Reference Number	Location	Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation
BHR-1	172 Main Street West	Listed property	**Indirect:** The residence is situated adjacent to the Project Location. Construction activities may be proposed within 22 metres of the identified BHR. The position of the residence within 22 metres has the potential for indirect impacts resulting from vibration damage during construction activities.	**Preferred Option:** Avoid the BHR by establishing a buffer zone around the residence to limit construction activity to more than 50 metres away. This should use appropriate preventive measures such as mapping the BHR on construction maps and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the BHR. Where avoidance is not feasible, the alternative option should be applied. **Alternative Option:** Where construction activities are anticipated within the 50-metre buffer zone, a pre-construction vibration assessment by a qualified engineer is recommended to determine if vibration monitoring or site plan controls are required.

Reference Number	Location	Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation
BHR-2	190 Main Street West	Listed property	**Indirect:** The residence and stone wall are situated adjacent to the Project Location. Construction activities may be proposed directly adjacent to the stone wall and within 13 metres of the residence. The position of the stone wall directly adjacent to the Project Location and the residence within 13 metres has the potential for indirect impacts resulting from vibration damage during construction activities.	**Preferred Option:** Avoid the BHR by establishing a buffer zone around the residence and stone wall to limit construction activity to more than 50 metres away. This should use appropriate preventive measures such as mapping the BHR on construction maps and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the BHR. Where avoidance is not feasible, the alternative option should be applied. **Alternative Option:** Where construction activities are anticipated within the 50-metre buffer zone, a pre-construction vibration assessment by a qualified engineer is recommended to determine if vibration monitoring or site plan controls are required.
BHR-3	189 Main Street West	Designated under Part IV of the OHA (Bylaw 102-2013) (Town of Kingsville 2013)	**Indirect:** The residence is situated adjacent to the Project Location. Construction activities may be proposed within 10 metres of the residence. The position of the residence within 10 metres has the potential for indirect impacts resulting from vibration damage during construction activities.	**Preferred Option:** Avoid the BHR by establishing a buffer zone around the residence and stone wall to limit construction activity to more than 50 metres away. This should use appropriate preventive measures such as mapping the BHR on construction maps and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the BHR. Where avoidance is not feasible, the alternative option should be applied. **Alternative Option:** Where construction activities are anticipated within the 50-metre buffer zone, a pre-construction vibration assessment by a qualified engineer is recommended to determine if vibration monitoring or site plan controls are required.



Reference Number	Location	Heritage Recognition	Type and Description of Potential/Anticipated Impact	Mitigation
BHR-4	289 Main Street West	Listed property	**Indirect:** The residence is situated adjacent to the Project Location. Construction activities may be proposed within 18 metres of the residence. The position of the residence within 18 metres has the potential for indirect impacts resulting from vibration damage during construction activities.	**Preferred Option:** Avoid the BHR by establishing a buffer zone around the residence and stone wall to limit construction activity to more than 50 metres away. This should use appropriate preventive measures such as mapping the BHR on construction maps and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the BHR. Where avoidance is not feasible, the alternative option should be applied. **Alternative Option:** Where construction activities are anticipated within the 50-metre buffer zone, a pre-construction vibration assessment by a qualified engineer is recommended to determine if vibration monitoring or site plan controls are required.
BHR-5	389 County Road 20	Listed property	**No Impacts Anticipated:** The property is located adjacent to the Project Location. Construction activities are proposed more than 100 metres west of the westerly residence and barn. The easterly residence was not determined to contain potential for CHVI.	Continued avoidance is recommended.

4.2.1 Summary of Impacts

Indirect Impacts: Following the assessment of impacts in Table 3, the following built heritage resources may be at potential risk of indirect impacts due to land disturbance as they contain built heritage resources within 50 metres of the Project Location:

- 172 Main Street West (BHR-1)
- 190 Main Street West (BHR-2)
- 189 Main Street West (BHR-3)
- 289 Main Street West (BHR-4)

The potential CHVI of BHR-5 is limited to the westerly residence and barn, both of which are located over 100 metres from the Project Location and are not at risk of indirect impacts.



Where the potential for impacts has been identified, measures to mitigate them have been prepared. Precautions are required to conserve previously identified or potential built heritage resources or cultural heritage landscapes through avoidance and mitigation where the potential for the Project to cause an impact has been identified.

The potential for indirect impacts resulting from vibration effects is related to the project's construction phase. Where potential impacts have been identified, components of the previously identified or potential built heritage resource or cultural heritage landscape are positioned within the 50-metre buffer but outside the direct Project Location. As a result, a preventive approach to mitigation measures will reduce the risk of indirect impacts. The following are the preferred and alternative mitigation options:

Preferred Option: Avoid 172, 189, 190, and 289 Main Street West (BHRs 1-4) by establishing a buffer zone around the resources to avoid construction activity within 50 metres of the built heritage resources. This should use appropriate preventive measures such as mapping on construction maps or plans and temporary fencing. Staging and laydown areas should also be selected to be non-invasive and avoid the built heritage resource. Where avoidance is not feasible, the alternative option should be applied.

Alternative Option: If the 50-metre buffer at 172, 189, 190, and 289 Main Street West (BHRs 1-4) cannot be avoided, the alternative option to mitigate this risk is for a qualified building condition specialist or engineer to develop a strategy to carry out condition surveys and vibration monitoring, where required. The pre-condition survey may include screening activities to identify critical properties and determine appropriate vibration levels based on building type, age, and condition. Vibration monitoring may consist of random confirmatory vibration monitoring during construction at the most critical properties. A post-condition survey should be carried out on an as-needed basis to be determined by a qualified building condition specialist or engineer.



5 Recommendations

Historical research, municipal and agency data requests, and the field investigation conducted for this report identified five previously identified built heritage resources:

- 172 Main Street West (BHR-1)
- 190 Main Street West (BHR-2)
- 189 Main Street West (BHR-3)
- 289 Main Street West (BHR-4)
- 389 County Road 20 (BHR-5)

Potential indirect impacts were identified for 172 Main Street West (BHR-1), 190 Main Street West (BHR-2), 189 Main Street West (BHR-3), and 289 Main Street West (BHR-4).

The Preferred Option is to avoid BHR-1, BHR-2, BHR-3, and BHR-4 by establishing a buffer zone around the built heritage resources to avoid construction activity within 50 metres. This should use appropriate preventive measures such as mapping on construction maps or plans and temporary fencing. Staging and laydown areas should also be non-invasive and avoid the built heritage resources. Where avoidance is not feasible, the alternative option should be applied.

If the 50-metre buffer cannot be avoided, the alternative option to mitigate this risk is for a qualified building condition specialist or engineer to develop a strategy to carry out condition surveys and vibration monitoring, where required. The pre-condition survey may include screening activities to identify critical properties and determine appropriate vibration levels based on building type, age, and condition. Vibration monitoring may consist of random confirmatory vibration monitoring during construction at the most critical properties. A post-condition survey should be carried out on an as-needed basis to be determined by a qualified building condition specialist or engineer.

To further understand the potential for the Project to effect built heritage resources, the impact assessment contained within this report should be amended when detail design information on proposed construction activity is finalized. When detailed design information is received, potential direct impacts and indirect can be refined as necessary.

To assist in retaining historical information, a copy of this report should be deposited with a local repository of historical material. Therefore, it is recommended that this report be deposited at the following location:

Essex County Library Kingsville Branch
40 Main Street West
Kingsville, Ontario N9Y 1H3



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Appendices

Appendix A Project Personnel Biographies

Lashia Jones, MA, CAHP: Lashia Jones is a Senior Cultural Heritage Specialist and member of Stantec's Environmental Services Team, with experience in identifying, evaluating and planning for cultural heritage resources. Ms. Jones is a member of the Canadian Association of Heritage Professionals, and has a Master's Degree in Canadian Studies from Carleton University, specializing in Heritage Conservation. Ms. Jones has worked for both public and private sector clients, providing a variety of cultural heritage services including heritage impact assessments, cultural heritage evaluations, inventories of cultural heritage resources, heritage conservation districts, heritage master plans, conservation plans and cultural heritage bridge evaluations. Ms. Jones is well versed with local, provincial and national tools for the identification, evaluation and planning best practices for cultural heritage resources, including the Ontario Heritage Act, Provincial Policy Statement, Planning Act, Environmental Assessment Act, Ontario Heritage Tool Kit, Standards and Guidelines for the Conservation of Provincial Heritage Properties and the Standards and Guidelines for the Conservation of Historic Places in Canada. Lashia's role on various project types has given her experience in public engagement and consultation, constructive dialogue with clients, heritage committees, local councils and multi-disciplinary project teams.

Frank Smith, MA, CAHP: Frank Smith is a Cultural Heritage Specialist with over seven years of experience in detailed historical research, interpretation, and conservation of cultural heritage resources. Frank attained his Bachelor of Arts degree *magna cum laude* in history from Adelphi University in Garden City, New York and his Master of Arts degree in history (public history stream) from Western University in London, Ontario. Before joining Stantec, he was the Curator of the John P. Metras Sports Museum and Research Assistant for the Census of Canada 1891 project. Since joining Stantec, Frank has assisted in the completion of dozens of environmental assessment reports, including reports for private clients, municipal clients, and prescribed public bodies. Frank has screened and evaluated thousands of properties for cultural heritage value or interest as part of the environmental assessment process. Frank is a member of the Canadian Association of Heritage Professionals.

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Appendix D - Natural Environment

Heritage Road to Road 2 West – Municipal Class Environmental Assessment – Natural Heritage Assessment

FINAL REPORT

September 27, 2023

Prepared for:
Town of Kingsville

Prepared by:
Stantec Consulting Ltd.
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Project Number:
165001284

Limitations and Sign-off

The conclusions in the Report titled Heritage Road to Road 2 West – Municipal Class Environmental Assessment – Natural Heritage Assessment are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Town of Kingsville (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

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Acronyms / Abbreviations

ANSI	Area of Natural and Scientific Interest
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ELC	Ecological Land Classification
END	Endangered
ESA	*Endangered Species Act,* 2007 (Ontario)
ESR	Environmental Study Report
ERCA	Essex Region Conservation Authority
ERNHSS	Essex Region Natural Heritage System Study
LIO	Land Information Ontario
MECP	Ministry of the Environment, Conservation and Parks
MNR	Ministry of Natural Resources
MNRF	Ontario Ministry of Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
OBA	Ontario Butterfly Atlas
OMA	Ontario Moth Atlas

OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
OP	Official Plan
ORAA	Ontario Reptile and Amphibian Atlas
PSW	Provincially Significant Wetland
SAR	Species at Risk
SARA	*Species at Risk Act*
SARO	Species at Risk in Ontario
SC	Special Concern
SOCC	Species of Conservation Concern
SWHTG	Significant Wildlife Habitat Technical Guide
THR	Threatened

1 Introduction

Stantec Consulting Ltd. (Stantec) was retained by the Town of Kingsville to carry out a Municipal Class Environmental Assessment (EA) for the Heritage Road to Road 2 West project (the Project). The Project is classified as a Schedule C project under the Municipal Class EA process. Schedule C projects require the preparation and filing of an Environmental Study Report (ESR) for review by the public and relevant agencies.

The Project is located on the west side of the Town of Kingsville in Essex County, Ontario (the Town), along Fox Lane between Road 2 West and County Road 20/Main Street West (**Figure 1, Appendix A**). The Project will involve the extension of Heritage Road to Road 2 West, two local road connecting links, active transportation infrastructure and intersection improvements at County Road 50 and Main Street West. The improvements will provide a safe and accessible multi-modal transportation network to accommodate future growth and development within the Town.

The Town of Kingsville is responsible for road building within the Project Location, from Main Street West to a road termination point at approximately 420 m south of Road 2 West (**Figures 1 & 2, Appendix A**). Road building from the road termination point north to Road 2 West will be the responsibility of other proponents.

As part of the EA, Stantec completed a natural heritage assessment. The assessment was conducted for the entire Project from Main Street West to Road 2 West, plus adjacent lands within 120 m, collectively known as the Study Area (**Figure 1, Appendix A**). The assessment included a desktop review of natural heritage background data and a field investigation. The assessment focused on documenting and describing natural heritage features, vegetation communities, wildlife habitat, rare species, Species at Risk (SAR) and their habitats, and fish habitat within the Study Area.

This report provides the results of the natural heritage assessment and includes a discussion of natural heritage constraints, potential impacts, general mitigation measures and anticipated natural heritage related permit needs for the Project. Discussion of natural heritage impacts, mitigation and permitting is focused on the proposed alignment within the Project Location, as shown in **Figure 1, Appendix A**. Impact assessments north of the termination point will be completed by other proponents.

2 Desktop Review

2.1 Background Information Sources

Background documents and information sources were consulted to obtain natural heritage designations for the Study Area. The following information sources were reviewed:

- Natural Heritage Information Centre (NHIC) (MNRF 2023a)
- Land Information Ontario (LIO) (MNRF 2023b)
- Ontario Ministry of Agriculture, Food and Rural Affairs Ag. Maps (OMAFRA) (OMAFRA 2023)
- Essex Region Natural Heritage System Study (ERNHSS) (Essex Region 2013)
- Essex Region Conservation Authority (ERCA) Public Interactive Mapping (ERCA 2022)
- Town of Kingsville Official Plan (OP) and Schedule B of the OP (Town of Kingsville 2011)

Online natural heritage databases, wildlife atlases and SAR mapping were reviewed to identify flora and fauna records for the Study Area. Records of SAR and Species of Conservation Concern (SOCC), occurrences of amphibians, reptiles, birds and mammals, Provincially Significant Wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), and fish and fish habitat data were obtained from the following sources:

- Natural Heritage Information Centre (NHIC) (MNRF 2023a)
- Land Information Ontario (LIO) (MNRF 2023b)
- Species at Risk in Ontario (SARO) List (MECP 2023)
- Species List on Schedule 1 of the Species at Risk Act (SARA) (Government of Canada 2023)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Map (DFO 2023)
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature 2019)
- Ontario Breeding Bird Atlas (OBBA) (Cadman et al. 2007)
- Ontario Butterfly Atlas (OBA) (Toronto Entomologists' Association [TEA] 2023a)
- Ontario Moth Atlas (OMA) (TEA) 2023b)
- eBird Online Database (eBird 2023)
- iNaturalist Online Observations (iNaturalist 2023)

Many of the above-listed resources do not provide the exact locations of a species occurrence, with accuracy ranging from 1-km² (e.g., NHIC) to 10-km² (wildlife atlases). As such they are used as an indicator of potential occurrence in the Study Area.

2.2 Results

2.2.1 Natural Heritage Landscape Context

The Study Area is in Ecoregion 7E in (Ecodistrict 7E-1). This is the most southerly ecoregion and district in Canada. The district is dominated by agriculture (~90%). Natural areas such as deciduous woodlots occupy a small portion of the land.

The Study Area is situated in a rural section of the Town. Agricultural lands (row crops) are the predominant land use within the Study Area, in addition to rural residential, and oil mining infrastructure (pump jacks and tanks). Natural habitat is limited within the Study Area which includes woodlots, hedgerows, a headwater drainage feature, and watercourses. Large ponds are located to the west of the Study Area which are assumed to be sewage treatment lagoons.

Other natural areas located outside of, but nearby, the Study Area are the Cedar Creek Wetland Complex Provincially Significant Wetland (PSW) (MNRF 2023a) and Wigle Creek to the west of the Study Area, a woodlot to the east of the Study Area and Mill Creek and associated forested corridor to the South of the Study Area (**Figure 1, Appendix A**).

Ecodistrict 7E-1 is in Ontario's Carolinian floristic zone. The district has a high concentration of rare flora compared to other areas of Ontario including species not found elsewhere in Canada (Oldham 2017). Natural areas in this district have a greater potential to harbour rare plant species than other areas of Ontario.

2.2.2 Natural Heritage Designations and Features

Natural heritage designations are present within the Study Area.

Terrestrial Ecosystems

Essex Region (ERNHSS 2013) and ERCA (2022) document two features within the Study Area which are considered Existing Natural Features. These include a treed area at the south end of the Study Area, and the Mill Creek forested riverine corridor.

There are no ANSIs, no PSWs and no Environmentally Significant Areas within the Study Area (ERCA 2022).

Aquatic Ecosystems

A watercourse known as Scratch Kennedy Drain is present in the Study Area on the north side of Road 2 West (**Figure 1, Appendix A**) (MNRF 2023b). Scratch Kennedy Drain is an open municipal drain that has been classified by Fisheries and Oceans (DFO) as a drain class F (MNRF 2023b). Class F drains have an intermittent flow (DFO 2017). Scratch Kennedy Drain begins in agricultural fields to the north of the Study Area and converges with Wigle Creek to the west of the Study Area. The drain is known to have a warmwater thermal regime (MNRF 2023b). There are no fish community records for Scratch Kennedy Drain, however, a fish community survey of Wigle Creek was conducted in 2010 which documented four fish species including Common Shiner (*Luxilus cornutus*), Creek Chub (*Semotilus atromaculatus*),

Fathead Minnow (*Pimephales promelas*), and White Sucker (*Catostomus commersonii*) (MNRF 2023b). Given that Scratch Kennedy Drain is connected to Wigle Creek, there is potential for these species to also be found in the Scratch Kennedy Drain when flow is present.

Mill Creek is a permanently flowing open municipal drain and is classified as a DFO drain class E. Class E drains have permanent flow and support sensitive fish species (DFO 2017). Fish community sampling within Mill Creek in 2019 documented a diverse fish community including Central Stoneroller (*Campostoma anomalum*), Common Carp (*Cyprinus carpio*), Creek Chub, Fathead Minnow, Goldfish (*Carassius auratus*), Green Sunfish (*Lepomis cyanellus*), Pumpkinseed (*Lepomis gibbosus*), Spotfin Shiner (*Cyprinella spiloptera*), White Sucker, and Yellow Perch (*Perca flavescens*) (MNRF 2023b).

Parts of the Study Area fall within the ERCA Regulation Limit, Ontario Regulation 158/06, however, Project overlap within the regulation limit only occurs at Road 2 West. At this location, the regulation limit is associated with the Scratch Kennedy Drain.

2.2.3 Species of Conservation Concern

Species of Conservation Concern (SOCC) are those species that are provincially rare (S1-S3 ranked species), listed as special concern (SC) on the SARO list or are listed as threatened or endangered on Schedule 1 of the *Species at Risk Act, 2002*. Species that are protected by the *Endangered Species Act, 2007* (ESA) are not SOCC; they are considered SAR and discussed in the following section.

Status rankings (S-ranks) for wildlife are based on the number of occurrences in Ontario and have the following meanings (OMNR 2000):

- S1: extremely rare; usually 5 or fewer occurrences in the province
- S2: very rare; usually between 5 and 20 occurrences in the province
- S3: rare to uncommon; usually between 20 and 100 occurrences in the province
- S4: common; usually more than 100 occurrences in the province
- S#B: breeding status rank
- S#N: Non-breeding status rank
- S?: Rank uncertain

Twenty-five (25) SOCC were identified in the background review as having potential to be present within or near the Study (Table 1The potential for SOCC to be present in the Study Area is limited by the presence of suitable habitat in the Study Area.

Table 1: Species of Conservation Concern known to occur near or in the Study Area

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA	Source(s)
Birds					
Barn Swallow	*Hirundo rustica*	S4B	SC	THR	MECP[1]
Bald Eagle	*Haliaeetus leucocephalus*	S4	SC	NAR	NHIC[2]
Common Nighthawk	*Chordeiles minor*	S4B	SC	THR	Cadman[3]
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	NHIC
Short-eared Owl	*Asio flammeus*	S4?B,S2S3N	SC	SC	iNaturalist[4]
Tufted Titmouse	*Baeolophus bicolor*	S3	-	-	NHIC
Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	NHIC
Insects					
Carolina Sphinx	*Manduca sexta*	S2	-	-	TEA[5]
Cicada Killer	*Sphecius speciosus*	S1S2	-	-	NHIC
Duke's Skipper	*Euphyes dukesi*	S2	-	-	NHIC
Monarch	*Danaus plexippus*	S2N, S4B	SC	SC	TEA[6]
Mammals					
Eastern Mole	*Scalopus aquaticus*	S2	SC	SC	NHIC
Plants					
American Alumroot	*Heuchera americana*	S1	-	-	NHIC
Biennial Gaura	*Oenothera gaura*	S3	-	-	NHIC
Climbing Prairie Rose	*Rosa setigera*	S2S3	SC		NHIC
Field Dodder	*Cuscuta campestris*	S2	-	-	NHIC
Illinois Carrionflower	*Smilax illinoensis*	S2	-	-	NHIC
Many-fruited Seedbox	*Ludwigia polycarpa*	S2	-	-	NHIC
Pawpaw	*Asimina triloba*	S3	-	-	NHIC
Schweinitz's Flatsedge	*Carex schweinitzii*	S3	-	-	NHIC
Swamp Rose-mallow	*Hibiscus moscheutos*	S3	SC	SC	NHIC
Woodland Lettuce	*Lactuca floridana*	S1S2	-	-	NHIC

Table 1: Species of Conservation Concern known to occur near or in the Study Area

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA	Source(s)
Reptiles					
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	SC	NHIC, Ontario Nature[7], iNaturalist
Northern Map Turtle	*Graptemys geographica*	S3	SC	SC	Ontario Nature, iNaturalist
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	NHIC, Ontario Nature, iNaturalist

[1] MECP 2023
[2] MNRF 2023a
[3] Cadman et al. 2007
[4] iNaturalist 2023
[5] TEA 2023b
[6] TEA 2023a
[7] Ontario Nature 2019

2.2.4 Species at Risk

Species at Risk are those species that are listed as endangered (END), threatened (THR) or extirpated (EXP) under the provincial ESA.

The ESA was created to protect SAR and their habitats. Endangered, threatened, and extirpated species listed on the SARO automatically receive legal protection from harm or harassment. The habitat of a given species is classified as either general habitat protection or regulated habitat protection (i.e., defined under regulation).

Sixteen (16) SAR were identified in the background review as having potential to be present within or near the Study Area (Table 2). The potential for SAR to be present in the Study Area is limited by the presence of suitable habitat in the Study Area.

Table 2: Species at Risk known to occur near or in the Study Area

Common Name	Scientific Name	Species Status S-Rank	Species Status SARO	Species Status SARA	Source(s)
Birds					
Bank Swallow	*Riparia riparia*	S4B	THR	THR	NHIC[1], Cadman[2], eBird[3], iNaturalist[4]
Barn Owl	*Tyto alba*	S1	END	END	NHIC
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	NHIC, Cadman, eBird
Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	NHIC, Cadman, eBird, iNaturalist
Eastern Meadowlark	*Sturnella magna*	S4B,S3N	THR	THR	NHIC, Cadman, eBird
Eastern whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	eBird
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	NHIC, Cadman, eBird
Mammals					
Little Brown Myotis	*Myotis lucifugus*	END	END	S3	MECP[5]
Northern Myotis	*Myotis septentrionalis*	END	END	S3	MECP
Small-footed Myotis	*Myotis leibii*	END	NL	S2S3	MECP
Tri-coloured Bat	*Perimyotis subflavus*	END	END	S3?	MECP
Plants					
Butternut	*Juglans cinerea*	S2?	END	END	NHIC
Willowleaf Aster	*Symphyotrichum praealtum*	S2	THR	THR	MECP
Reptiles					
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	END	Ontario Nature[6]
Eastern Foxsnake	*Pantherophis gloydi pop. 2*	S2	END	END	NHIC, Ontario Nature
Massasauga	*Sistrurus catenatus pop. 2*	S1	END	END	NHIC, Ontario Nature

[1] MNRF 2023a
[2] Cadman et al. 2007
[3] eBird Canada 2023
[4] iNaturalist 2023
[5] MECP 2023
[6] Ontario Nature 2019
NL – no listing

3 Field Investigation

Field investigations occurred on August 23, August 25, 2022, and July 24, 2023. On all three site visits, weather conditions were clear and hot, with an air temperature of 26 to 28°C and light winds. The field investigation was completed where land access was permitted and included the area within the Project location and portions of the Study Area. Private lands in the Study Area were assessed from the limit of accessible lands.

3.1 Methods

3.1.1 Ecological Land Classification

Ecological Land Classification (ELC) surveys were completed to identify and map natural and anthropogenic vegetation communities in the Study Area. Vegetation surveys were completed in the late summer during the growing season when naturally occurring woody and herbaceous vegetation could be accounted for and characterized accurately.

Identification and mapping of vegetation communities follows the protocols of the ELC field guide for Southern Ontario (Lee et al. 1998). Updates to vegetation community names and codes follow the 2008 catalogue of ELC vegetation communities. ELC mapping was completed to the finest level of resolution (Vegetation Type) where possible. Vegetation communities were first identified on aerial imagery and then checked in the field. Provincial significance of vegetation communities was based on the rankings assigned by the NHIC (MNRF 2023c).

SAR and SOCC plants such as the endangered butternut (*Juglans cinerea)* tree or the threatened willowleaf (*Symphyotrichum praealtum)* aster were surveyed for and mapped if encountered. A botanical inventory of vascular plants occurring in the Study Area was completed during site investigations. A detailed of vascular plant species observed in the Study Area is provided in **Appendix E.**

3.1.2 Bat Maternity Roost Tree Survey

Trees in the Project location were assessed for potential suitability as bat maternity roosts. The assessment followed the recommended methods in the MNRF Guelph District *Bat and Bat Habitat Surveys of Treed Habitats* (MNRF 2017) which was based in part on the *Bat and Bat Habitat Guidelines* (MNR 2011). According to the MNRF Guelph District protocol, the best candidate trees for maternity colonies are likely to contain several characteristics (to be considered a potential treed roost habitat, not all habitat characteristics listed below needed to be present), which include:

- Height – where trees are tallest in the stand
- Diameter – where trees have a large diameter at breast height (DBH)
- Loose/peeling bark – where trees have a large amount of peeling/loose bark
- Cavity height – where cavity height is high on the tree (>10 m high)
- Open canopy – located in an area of open canopy for accessibility in and out of tree

- Decay – where the tree exhibits early stages of decay

Trees in the Study Area but outside the Project location (e.g., trees in the Mill Creek corridor and SWDM4) were not assessed because tree removals are not anticipated at those locations.

3.1.3 Significant Wildlife Habitat Assessment

The MNRF Significant Wildlife Habitat Technical Guide (SWHTG) (OMNR 2000) describes significant wildlife habitat (SWH) in four categories:

1. Seasonal concentration areas
2. Rare vegetation communities or specialized habitats for wildlife
3. Habitat for SOCC (excluding habitat for endangered or threatened species)
4. Animal movement corridors

Habitats within the Study Area were assessed for candidate SWH, as defined in the Ecoregion 7E Criterion Schedule (MNRF 2015). Wildlife observations and evidence of wildlife (e.g., tracks, burrows, vocalizations) were recorded during the site visit. Targeted species-use surveys are generally required to determine if candidate features qualify as confirmed SWH. Because targeted species-use surveys were not conducted, identified SWH features were considered candidate, unless they were confirmed through direct observations or background review.

3.1.4 Species at Risk Habitat Suitability Assessment

SAR habitat suitability assessments were completed in the Study Area concurrently during the site visits.

These assessments focused on the identification of potential SAR habitat features (e.g., SAR bat maternity roost trees) or occurrences (e.g., butternut). SAR habitat suitability assessments were completed for species protected under the provincial ESA that may occur in the area, including species identified in the NHIC database and Ontario wildlife atlases during the literature review process. If encountered, these features were identified, recorded, and assessed for potential use by SAR and wildlife species occurrences were observed by sight, sound and/or through distinctive signs (e.g., tracks, scat).

3.1.5 Fish Habitat Assessment

The fish habitat assessment characterized potential fish habitat in the Scratch Kennedy Drain and Mill Creek based on the presence/absence of aquatic habitat elements such as channel morphology, substrate types, instream cover, aquatic and riparian vegetation, and water depth. Both watercourses were surveyed by walking the shoreline and visually documenting habitat characteristics. If present, fish habitat features were identified, characterized, and recorded digitally with Stantec field forms on data collection software (ArcGIS) and a digital camera. Fish community sampling was not conducted during the field investigation. Headwater drainage features encountered in the Study Area during the site visit were also documented.

3.2 Results

A photographic record of the site and the natural heritage features is provided in **Appendix B**.

3.2.1 Vegetation

The Study Area is predominantly row crop agricultural land mixed with rural residences at the north end and low density residential at the edge of town at the south end. A few shrubby thicket hedgerows occur along or adjacent the proposed road. A couple of small woodland areas occur at the periphery of the Study Area outside of the proposed road alignment.

Apart from the forested area at the south end of the Study Area along Mill Creek, natural features such as deciduous forests or grassland habitat does not occur due to the active use of land in the Study Area. Approximately 50% of the plant species observed during the botanical inventory are non-native (exotic) species, which is a high percentage of exotic species. This high percentage of exotics and absence of highly sensitive plant species is indicative of the disturbed conditions found in the Study Area. The complete list of vascular plants recorded is provided in **Appendix E**.

A colony of probable willowleaf aster was observed in the Study Area, on the east side of the SWDM4 ecosite. There were approximately 50 individuals at this location on July 24, 2023. This species is most accurately identified during its blooming season of September. This Project does not overlay the SWDM4 ecosite or the potential willowleaf aster colony, and as such, impacts are not anticipated from this Project. However, future development in this area should consider the potential presence of this protected species, the role the SWDM4 ecosite plays in supporting the species presence, and conduct surveys for it accordingly.

An SOCC plant, the shellbark hickory (*Carya laciniosa*) was observed in the FODM11 ecosite. Shellbark hickory have an S3 designation from the NHIC (MNRF 2023a), however, the species is known to be common in Essex County (Oldham 2017).

ELC mapping within the Study Area is shown on **Figure 2, Appendix A**. Vegetation communities present within the Study Area are described in **Table 3**.

Table 3: Ecological Land Classification (ELC Vegetation Types)

ELC TYPE	Community Description
Forest /Swamp	
FODM7 Fresh – Moist Lowland Deciduous Forest	This lowland forest is situated south of County Road 20 W / Main Street W along Mill Creek. It is dominated by mature eastern cottonwood and black walnut.
FODM11	Row of shrubs mixed with mature trees. Shrubs include gray dogwood, staghorn sumac, riverbank grape, Virginia creeper, prunus sp. Trees included black walnut and shellbark hickory.

Table 3: Ecological Land Classification (ELC Vegetation Types)

ELC TYPE	Community Description
SWDM4 Mineral Deciduous Swamp	This small swamp area is located outside of the proposed road alignment. It is comprised of a small pond surrounded by cottonwood and lowland Phragmites area.
Plantation / Woodland	
TAGM1 Coniferous Plantation **WODM4** Dry - Fresh Deciduous Woodland	This area is a mixture of mature Norway spruce plantation and mature Manitoba maple.
Hedgerows	
THDM2 **Dry – Fresh Deciduous Shrub Thicket**	Small, vegetated areas on either side of Fox Lane, with black walnut, gray dogwood, riverbank grape, staghorn sumac, mulberry, and black raspberry.
THDM3a Dry – Fresh Deciduous Hedgerow Thicket	This small thicket hedgerow is dominated by staghorn sumac, young common hackberry, and occasional saplings of white elm.
THDM3b Dry – Fresh Deciduous Hedgerow Thicket	This large thicket hedgerow is dominated by shrubs of staghorn sumac, grey dogwood, and riverbank grape vine. Occasional saplings of white elm occur throughout.
Meadows	
MEMM3 Dry – Fresh Mixed Meadow	These meadows are disturbed from past building demolitions. They are dominated by common old field weeds such as Canada thistle, Canada goldenrod, Canada horseweed and white sweet-clover and common burdock.
MEFM1 Dry – Fresh Forb Meadow Ecosite	An old field comprised of Canada goldenrod, creeping thistle, giant ragweed, red clover, wild carrot, bird vetch, and daisy fleabane.
MEMM3 Dry – Fresh Mixed Meadow / **THDM2-1** Sumac Deciduous Shrub Thicket Type	A disturbed meadow and thicket with dominant Canada goldenrod and giant ragweed. Staghorn sumac occurs throughout.

3.2.2 Bats

There were no trees within the Project location that were suitable for bat maternity roost habitat. Trees providing potential bat maternity roost habitat features were present in the Study Area outside the Project location, in ecosites FODM7, SWDM4, and FODM11. Individual trees were not assessed because tree removals within these features are not proposed for the Project.

3.2.3 Significant Wildlife Habitat

Evaluation criteria and the SWH assessment results appear in **Appendix C.** A brief description of the four SWH categories and the result of the assessment is provided below:

Seasonal Concentration Areas

Seasonal concentration areas are those sites where large numbers of a species gather at one time of the year, or where several species congregate. Only the best examples of these concentration areas are usually designated as SWH.

The following seasonal concentration areas were determined to be potentially present in the Study Area:

- **Bat Maternity Colonies (Candidate)**: Habitat for Bat Maternity Colonies occurred within the Study Area in the FODM7, SWDM4, and FODM11 vegetation communities.
- **Turtle Wintering Areas (Candidate):** Habitat for Turtle Wintering Areas occurred within the Study Area in the SWDM4 ecosite.

Rare Vegetation Communities and Specialized Habitat for Wildlife

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species.

Rare vegetation communities were not present in the Study Area. However, one type of specialized habitat for wildlife may be present in the Study Area:

- **Amphibian Breeding Habitat (Woodland) (Candidate)**: Habitat for Amphibian Breeding Habitat (Woodland) occurred within the Study Area in the SWDM4 ecosite.

Species of Conservation Concern

There are four types of SOCC: those which are rare, those whose populations are significantly declining, those which have been identified as being at risk from certain common activities and those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: globally rare, federally rare with designations by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), provincially rare with designations by the Committee on the Status of Species at Risk in Ontario (COSSARO), regionally rare (at the Site Region level), and locally rare (in the municipality or Site District). This is also the order of priority that should be assigned to the importance of maintaining species. While these species are considered rare, they are not regulated under the ESA or the federal *Species at Risk Act*. Species designated as special concern provincially or federally are included as SOCC. A habitat assessment for SOCC that fall into this category that have ranges that overlap with the Study Area is in **Appendix C**. The presence or absence of these species would need to be assessed through completion of targeted surveys at the appropriate time of year.



Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated significant wildlife habitat. Examples include species vulnerable to habitat loss such as marsh, open country, and shrub/early successional breeding birds.

The results of the SOCC habitat assessment are presented in **Appendix C**. Candidate habitat for ten (10) and confirmed habitat for one (1) of the 25 SOCC identified in the background review was present in the Study Area, including the following species:

Candidate Habitat for SOCC:

Birds

- Common Nighthawk
- Eastern Wood-Pewee

Insects

- Cicada Killer

Mammals

- Eastern Mole

Plants

- Biennial Gaura
- Climbing Prairie Rose
- Field Dodder
- Many-fruited Seedbox
- Pawpaw

Reptiles

- Midland Painted Turtle
- Snapping Turtle

Confirmed Habitat for SOCC:

Plants

- Shellbark Hickory

After the plant inventory that was completed during the July 24, 2023, site visit, one of the SOCC plants was confirmed to be present in the Study Area, the shellbark hickory. None of the other potential SOCC were documented.

Animal Movement Corridors

Migration corridors are areas that are traditionally used by wildlife to move to one habitat from another. This is usually in response to different seasonal habitat requirements. There is one type of animal movement corridor in Ecoregion 7E - amphibian movement corridors.

- **Amphibian Movement Corridors (Candidate)**: Amphibian Movement Corridor habitat occurred within the Study Area, comprised of the FODM11 hedgerow at the south end of the SWDM4 ecosite. This corridor connects the potential woodland breeding habitat (SWDM4) to the larger woodlot to the southeast (outside of the Study Area). The headwater drainage feature may also act as a movement corridor connecting the Wigle Creek forested corridor to the SWDM4 potential breeding habitat.

3.2.4 Species at Risk

Suitable habitat for seven (7) of the sixteen (16) SAR identified in the background review was present in the Study Area.

The Mill Creek forested corridor at the south end of the site (FODM7) and the SWDM4 and FODM11 ecosites provide potentially suitable habitat for SAR bats. These features also provide suitable habitat for the Red-headed Woodpecker.

Treed areas and hedgerows may bay suitable locations for butternut to grow and the edges of fields and hedgerows within the Study Area may provide suitable habitat for willowleaf aster. A colony of probable willowleaf aster was observed in edge habitat on the east side of the SWDM4 ecosite.

All open vegetated areas within the Study Area including hedgerows, thickets and debris piles provide suitable habitat for Eastern Foxsnake. Further discussion of Eastern Foxsnake is provided below because the Study Area is considered Regulated Habitat under the ESA for this species.

The results of the SAR habitat suitability assessment are presented in **Appendix D**. Habitat in the Study Area was found to be suitable for the following SAR:

Birds

- Red-headed Woodpecker

Mammals

- Eastern Small-footed Myotis
- Little Brown Myotis
- Northern Myotis
- Tri-coloured Bat

Plants

- Butternut
- Willowleaf Aster

Reptiles

- Eastern Foxsnake

Eastern Foxsnake

Suitable habitat for Eastern Foxsnake in Essex County within 1500 m of an Eastern Foxsnake observation is considered Regulated Habitat under Ontario Regulation 242/08 of the ESA (MECP 2022).

According to the habitat regulation, protected sites include those used for nesting, hibernation, and communal shedding and basking, as well as areas within 1500 metres of an Eastern Foxsnake occurrence that are suitable for it to carry out its life processes (e.g., foraging and thermoregulation). The regulation applies where the snake occurs within the county of Essex.

According to the COSEWIC Status Report on the Eastern Foxsnake (COSEWIC 2008), the main habitat for this species in Essex/Kent County (Essex-Kent Regional Population) consists of unforested, early successional habitat. Hedgerows bordering farm fields and riparian zones along drainage canals are regularly used (COSEWIC 2008).

The most important components of Eastern Foxsnake habitat include the following, which are captured under the habitat regulation:

- hibernation sites
- egg laying (oviposition) sites location
- shedding and basking (thermoregulation) sites

Other supporting habitat features include:

- shelter sites – sites that provide shelter include brush or branch piles, logs, stone piles, or other structures large enough for the snakes to seek refuge in.
- foraging habitat – The main diet of the Eastern Foxsnake includes small mammals and birds (including eggs and nestlings). Areas that support rodents or breeding birds are likely to be ideal foraging habitat.
- seasonal movement corridors – include corridors between the other components of its habitat.

Further to these features, the habitat regulation also protects *any part of a prairie, savannah, hedgerow, shoreline, marsh, old field, forest, sand dune or similar area that is being used by an Eastern Foxsnake (Carolinian population) or on which an Eastern Foxsnake (Carolinian population) directly depends to carry on its life processes.*

The presence of supporting features within these habitats generally increases the likelihood of Eastern Foxsnake occurrences. Supporting features would include, but are not limited to brush piles, branch pruning's, rotting logs, log piles, stone piles, concrete, box culverts, large rocks, abandoned farm machinery and stone foundations.

Some of the preferred habitat types for the Eastern Foxsnake were documented in the Study Area including hedgerows, forest, forest edge, watercourse, old field, and debris / concrete piles. Snake habitat features (concrete piles) present in the south end of the Study Area are shown on **Figure 2, Appendix A**. Potential hibernacula is not anticipated as subterranean access was not observed at these features. More likely, these features may provide cover objects for snakes using habitat in the area. Given that the Project location is within predominantly active row crop agriculture, there is minimal natural habitat in the Study Area, there are no permanently flowing watercourses or drains in proximity to the Project location, and lands east of the Project location are mainly agricultural field and residential, there is a low likelihood that the Project will impact important habitat for the Eastern Foxsnake. However, because of the generalist nature of the species and its ability to persist in agricultural landscapes (COSEWIC 2008), and the fact that there are supporting habitat features, Eastern Foxsnake should be considered present in the Study Area. Correspondence with the MECP prior to Project construction is recommended. Mitigation to protect the species from harm is anticipated to be required.

3.2.5 Fish Habitat

Scratch Kennedy Drain

During the site visit, the Scratch Kennedy Drain was dry on the north side of Road 2 West. The drain had a trapezoidal channel that ran parallel with the road. Cattail (*Typha* sp.) was the dominant vegetation type within the channel. Riparian areas were maintained as cut roadside vegetation with herbaceous species and shrubs adjacent to the agricultural field. Substate was silt, clay, and organic detritus (cattail debris).

A refuge pool was observed at the inlet of the box culvert that conveys drain flow from the north to south side of Road 2 West (the box culvert is west of Fox Lane and outside of the Study Area). The refuge pool was 3.0 m long, 0.50 m wide and had 0.15 – 0.20 m water depth. Substrate was silt and gravel. Fish (*Cyprinidae*) were observed in the refuge pool.

Based on habitat characteristics documented by Stantec on August 25, 2022, the Scratch Kennedy Drain provides fish habitat within the Study Area. The drains flow is intermittent, corroborating the DFO drain Class F designation. During high flow events, fish may migrate into upper reaches of the drain, including the channel on the north side of Road 2 West. The Scratch Kennedy Drain contributes intermittent surficial drainage downstream into Wigle Creek.

Mill Creek

Mill Creek was a flowing watercourse with a wetted width of 3.0 m and average water depth of 0.10 – 0.20 m. Channel morphology varied and included run, riffle, and pool. Although the creek has a forested corridor with vegetation that should stabilize the banks, bank erosion was observed throughout the assessed reach indicating seasonally high and powerful flow rates. Substrate was a coarse material of gravel and cobble with sand and boulder. Large organic debris was present in the channel from fallen tree limbs. Riparian vegetation provided shade cover to the channel. Mill Creek provides permanent fish habitat.

Headwater Drainage Feature

One headwater drainage feature was observed in the Study Area (**Figure 2, Appendix A**). From aerial imagery, this feature appears to originate near the SWDM4 ecosite, and drains across the Study Area and into the lower reach of the Scratch Kennedy Drain. During the site visit the headwater drainage feature was dry. West of Fox Lane the drainage feature had defined bed and banks, sorted substrates, dominant terrestrial vegetation, and was not planted with agricultural crops. These observations indicate that the feature conveys enough flow during high flow events to scour a channel and move coarse material. As aquatic vegetation was absent, these flow events are likely ephemeral, occurring only during high flow events such as spring freshet. East of Fox Lane, within the Study Area, the drainage feature was not observed as the flow path had been cultivated and planted with row crops. The ecological function of the headwater drainage feature is likely limited to indirect (contributing) habitat through providing ephemeral source water to Scratch Kennedy Drain / Wigle Creek.

4 Natural Heritage Features

This section provides a summary of natural heritage features that were identified in the Study Area:

Natural Heritage Designations

- Two 'Existing Natural Features' as per Essex Region (ERNHSS 2013) and ERCA (2022):
- Part of the Study Area is within the ERCA Regulation Limit, Ontario Regulation 158/06.

Significant Wildlife Habitat

- Candidate: Bat Maternity Colonies
- Candidate: Turtle Wintering Areas
- Candidate: Snake Hibernaculum
- Candidate Specialized Wildlife Habitat: Amphibian Breeding Habitat (Woodland)
- Suitable habitat for SOCC including Common Nighthawk, Eastern Wood-pewee, Cicada Killer, Eastern Mole, biennial gaura, climbing prairie rose, field dodder, many-fruited seedbox, pawpaw, Midland Painted Turtle, Snapping Turtle
- Confirmed habitat and presence of one SOCC, the shellbark hickoryCandidate: Amphibian Movement Corridor

Species at Risk Habitat

- Suitable habitat for SAR birds: Red-headed Woodpecker
- Suitable habitat for SAR bats: Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tricoloured Bat
- Suitable habitat for SAR plants: butternut, willowleaf aster (probable presence of willowleaf aster)
- Suitable habitat for SAR reptiles: Eastern Foxsnake

Fish Habitat and Headwater Drainage Features

- Intermittent fish habitat is present in Scratch Kennedy Drain
- Permanent fish habitat is present in Mill Creek
- One headwater feature is present which provides land drainage and seasonal contributing habitat for Scratch Kennedy Drain / Wigle Creek.

5 Impact Assessment

Potential impacts to natural heritage from this Project are considered within the Project Location, from Main Street West to where the road terminates (the length of road the Town of Kingsville is responsible for) (**Figure 2, Appendix A**). Natural heritage features north of the Project Location are not further discussed in this report. It is recommended that the persons responsible for the road from the termination point to Road 2 West investigate natural heritage, specifically, the SWDM4 ecosite and if this feature provides significant wildlife habitat, confirmation of the presence of willowleaf aster at SWDM4 and the hydrological and ecological function of the headwater drainage feature.

Because the Project is predominantly within active agricultural row crop fields, impacts to natural heritage are anticipated to be low. Impacts to fish habitat within Mill Creek are not anticipated as the Project does not overlap the creek or the forested riverine corridor. Based on the findings of this report, the following potential impacts may occur due to the Project:

- Impacts to potential Species of Conservation Concern and Species at Risk identified in this report
- Impacts to Regulated Habitat for the Eastern Foxsnake

Mitigation measures to minimize the potential impact to natural heritage features and species is discussed below.

6 Mitigation Measures

General mitigation measures which should be considered have been separated into design and construction related impact mitigation techniques.

6.1 Design

During site selection and design, the following measures should be considered to reduce the risk of impacts to natural heritage:

Fish and Fish Habitat

- Design drainage system to reduce changes in drainage to watercourses that provide fish habitat. Consider maintaining drainage in the headwater drainage feature and ensure surficial drainage continues to contribute to downstream aquatic ecosystems.
- Design stormwater management measures to reduce effects on watercourses that provide fish habitat to the extent possible.
- Design a rehabilitation/re-vegetation plan for long-term stability of areas disturbed during construction.

Wildlife and Terrestrial Habitat

- Limit infrastructure in woodland and wetland (if applicable) areas and adjacent lands (e.g., 30 m), to the extent possible.
- Plan to rehabilitate temporary disturbance areas with a native seed mix dependent of the existing vegetation community, soil type and soil moisture regime.

6.2 Construction

6.2.1 Standard Mitigation Measures

The following standard mitigation measures/best practices are provided to reduce potential impacts to natural heritage features during construction:

- Delineate the Project footprint with tree protection fencing prior to construction to reduce impacts to adjacent natural features.
- Wash, refuel and/or service equipment a minimum of 30 m from surface waters to reduce the risk of deleterious substances from entering surface waters. Check machinery regularly for fluid leaks.
- Thoroughly clean construction machinery prior to entering the site to reduce the potential for establishment / spread of invasive species.
- To reduce the potential for spread of insect pests such as the Emerald Ash Borer, trees cut should be disposed of onsite (either through spreading of wood chips or trees cut and sawed into logs).

- Develop a Spill Management Plan and have it on site for implementation in the event of an accidental spill. Keep an emergency spill kit on site.
- Stabilize and re-vegetate areas of disturbed/exposed soil, as soon as practicably possible with native seed mixes and native woody vegetation.
- Maintain erosion and sediment control measures until the restoration measures have been assessed and determined to be secure and stable.

6.2.2 Erosion and Sediment Control

An erosion and sediment control (ESC) plan should be developed and employed during construction to reduce the risk of erosion and the entry of sediment into surface water and other natural features. Mitigation included in the plan should include the following measures:

- Implement project-specific temporary ESC measures per prior to starting work (e.g., silt fence and/or sediment logs).
- ESC fencing should be installed between the SWDM4 ecosite and the construction area.
- Keep additional ESC materials available on site to provide a contingency supply in the event of an emergency.
- Monitor and maintain erosion and sediment controls, as required. Controls are to be removed only after the soils of the construction area have stabilized and vegetation cover has re-established.
- Stabilize materials requiring stockpiling (fill, topsoil, etc.) and keep a safe distance (> 30 m) from watercourses.

6.2.3 Protection of Migratory Birds

The *Migratory Birds Convention Act, 1994* (MBCA) provides legal protection of migratory birds and their nests in Canada. Construction timing must consider restrictions imposed by the MBCA. To avoid damaging or disturbing bird nests and contravening the MBCA, the timing of any vegetation clearing should occur outside of the primary nesting period (i.e., the period when the percent of total nesting species is greater than 10% based on Environment Canada's Nesting Calendars and the period for which due diligence mitigation measures are generally recommended).

The primary nesting period (PNP) identified for southern Ontario is April 1 - August 31, although nesting also infrequently occurs outside of this period (Environment Canada 2014). Vegetation removal during this core nesting period is not recommended; however, if required, a nest survey may be carried out by a qualified person in simple habitats such as an urban park, a vacant lot with few possible nest sites, a previously cleared area, or a structure (Government of Canada 2022). If a migratory bird nest is located within the work area at any time, a no-disturbance buffer will be delineated. This buffer will be maintained for the entire duration of the nest activity, which will be determined using periodic checks by an avian biologist. The radius of the buffer generally varies from 5 m - 60 m depending on the sensitivity of the nesting species. The Project will not resume within the nest buffer until the nest is confirmed to be no longer active.

Under the new 2022 updates to the Migratory Bird Regulations (MBR), nests of species listed on Schedule 1 are protected year-round, such as nests of Pileated Woodpecker (*Dryocopus pileatus*). If a Pileated Woodpecker nest (or a nest of another species listed on Schedule 1) is determined to be empty of live or viable eggs, then the nest must be registered on Environment and Climate Change Canada's (ECCC) Abandoned Nest Registry. Once the next is registered, a species-prescribed period of inactivity must be observed (e.g., 36 months for Pileated Woodpecker) before the nest can be disturbed. Disturbing a nest of a listed species within the prescribed period of inactivity requires a permit (which are only available in limited situations) and additional mitigation measures may be required as determined by ECCC.

6.2.4 Wildlife Protection

The following mitigation measures are recommended to avoid impacts to wildlife during Project construction:

- Eastern Foxsnake Educational Training: All construction personnel should be aware of the potential presence of Eastern Foxsnake. As part of project orientation, personnel should review educational material which should include species identification, species habitat, species protection / impact mitigation techniques and ESA protections. A visual search of the work area will be conducted before work commences each day, particularly for the period when most wildlife is active (generally April 1 to October 31). Visual inspections will locate and avoid snakes, turtles, and other ground dwelling wildlife such as small mammals. Visual searches will include inspection of machinery and equipment left in the work area overnight prior to starting equipment.
- If wildlife is encountered, work at that location will stop, and the animal(s) will be permitted reasonable time to leave the work area on their own.
- Wildlife exclusion fencing may be required for the Project and specifically, exclusion fencing for Eastern Foxsnake. The need for exclusion fencing for Eastern Foxsnake can be determined after surveys and consultation with the MECP are completed.
- Any sediment and erosion control measures, such as fencing or blanket, utilized on the site during construction will avoid products with plastic mesh due to risk of entanglement of snakes or other wildlife.
- ESC fencing used to protect the SWDM4 ecosite (if required) can also be utilized for wildlife exclusionary fencing for low mobility wildlife (amphibians, turtles).
- Any observations of species at risk or species of conservation concern (e.g., Eastern Foxsnake) should be reported to MECP and MNRF within 48 hours. Species at risk should not be handled, harassed, or moved in any way, unless they are in immediate danger.
- If wildlife handling and relocation (e.g., amphibians, reptiles) is anticipated during construction such as vegetation clearing or during in-water work, the Contractor must obtain a Wildlife Scientific Collectors Authorization from the MNRF prior to the commencement of work.

6.2.5 Protection of Fish and Fish Habitat

There are no works proposed within or nearby fish habitat. Project specific construction mitigation to reduce impacts to fish habitat are not required.

7 Permitting Considerations

7.1 Conservation Authorities

7.1.1 Conservation Authorities Act

Development within the ERCA Regulation Limit is subject to the policies outlined in Ontario Regulation 158/06 under the *Conservation Authorities Act.* Regulated areas are present in the Study Area. Project overlap within the regulated limit occurs at Road 2 West and County Road 20 / Main Street West. Prior to any new development in regulated areas, including the placement or removal of fill material, grading activities, and the erection of any buildings or structures, and/or the alteration of regulated features, written approval (i.e., a Permit or a Letter of Permission) will be required from ERCA. Consultation with ERCA is recommended to determine permitting requirements.

7.2 Ministry of the Environment, Conservation and Parks

7.2.1 Endangered Species Act, 2007

The provincial ESA prohibits the killing, harming, harassing, capturing, or taking of a living member of a species listed as threatened, endangered, or extirpated by the Species at Risk in Ontario (SARO) list (O. Reg 230/08) (S.9), or the damage to habitat of similarly designated species (S.10). An exception is where a permit is issued under S.17(2) of the same act, or the Activity is registered under Ontario Regulation 242/08.

Based on preliminary assessment, impacts to SAR and/or SAR habitat may occur due to the Project. Consultation with the MECP regarding SAR is recommended.

7.3 Fisheries And Oceans Canada

7.3.1 Fisheries Act

The *Fisheries Act* prohibits causing the death of fish and he harmful alteration, disruption, or destruction (HADD) of fish habitat, unless authorized by the Minister of Fisheries, Oceans, and the Canadian Coast Guard. Under the *Fisheries Act,* fish habitat is defined *as* waters frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areasThe fish and fish habitat protection provisions of the *Fisheries Act* apply to all fish and fish habitat in Canada.

Following guidance and criteria provided on DFO's website regarding mitigation, waterbody types and codes of practice, proponents determine whether their projects in or near water will require review by DFO. In cases where impacts to fish and fish habitat cannot be avoided, proponents submit a Request for Review form to DFO. DFO will review the project to identify the potential risks of the project to the conservation and protection of fish and fish habitat and will work with the proponent to provide advice and guidance on how to comply with the *Fisheries Act*. If the Project can avoid impacts to fish and fish habitat, project approval is not required. If impacts cannot be avoided, proponents must apply for a *Fisheries Act* Authorization, and may be required to develop a habitat offsetting or compensation plan.

Details of the proposed infrastructure location will be assessed to determine the need for review by DFO; however, if in-water work is not proposed, DFO review under the *Fisheries Act* will not likely be required. If the need for in-water work is identified, design details and construction methods will need to be reviewed to determine if the Project should be reviewed by DFO under the *Fisheries Act* through the submission of a Request for Review form.

8 Next Steps

The following steps are recommended as part of detailed design:

- Begin consultation with the MECP for the Project. Submit an Information Gathering Form (IGF) to the MECP for the Project to address Regulated Eastern Foxsnake habitat. The MECP can confirm mitigation measures and authorization requirements, if any, for provincially regulated SAR. Additional studies may be recommended by the MECP following review of the IGF.

9 Closure

Stantec was retained by the Town of Kingsville to conduct a natural heritage assessment in support of the Heritage Road to Road 2 West – Municipal Class Environmental Assessment.

Based on the site conditions and assessment of SAR, SOCC and SWH, negative impacts on the habitat features or species noted in this assessment may occur from Project construction. Consultation with the MECP regarding Regulated Eastern Foxsnake habitat within the Study Area is recommended.

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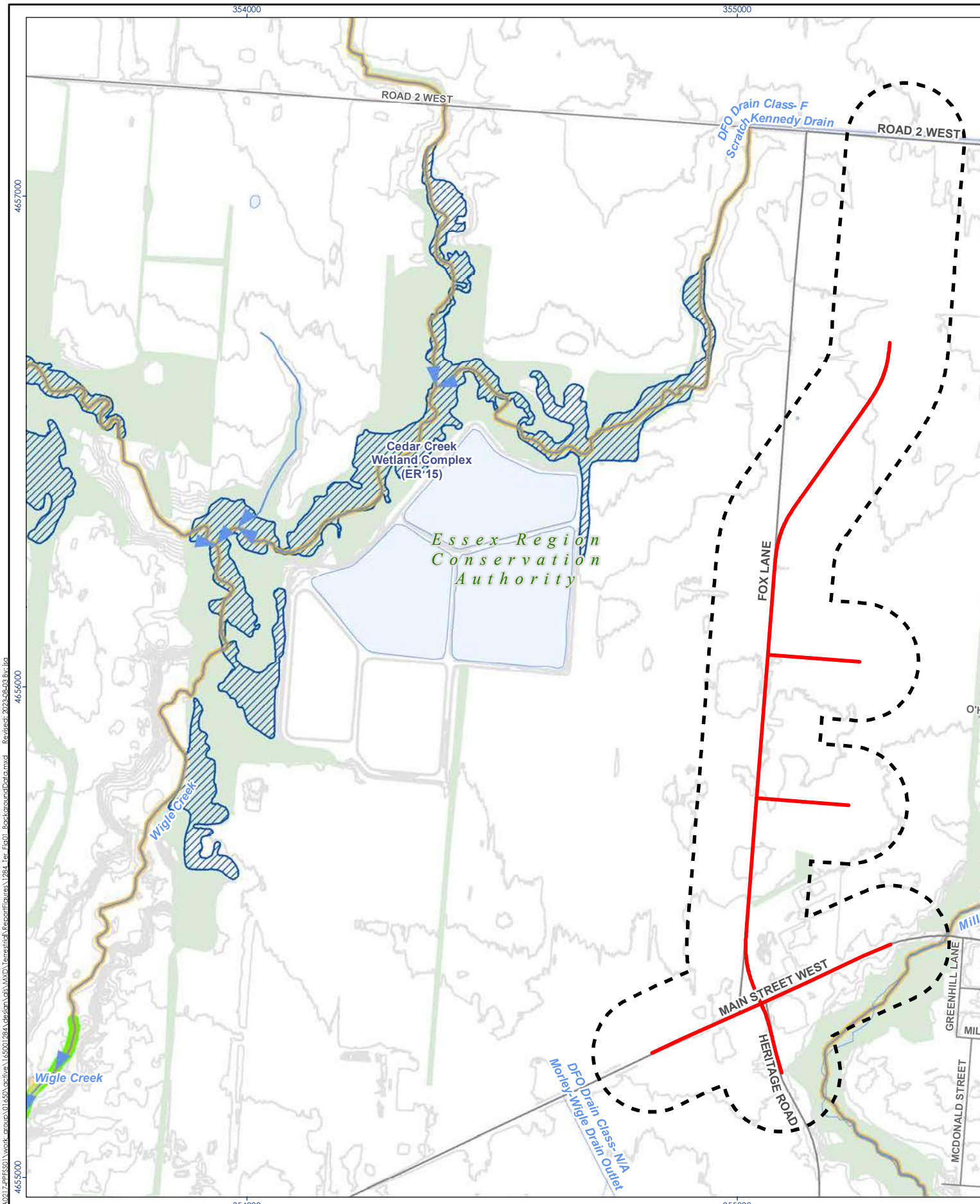
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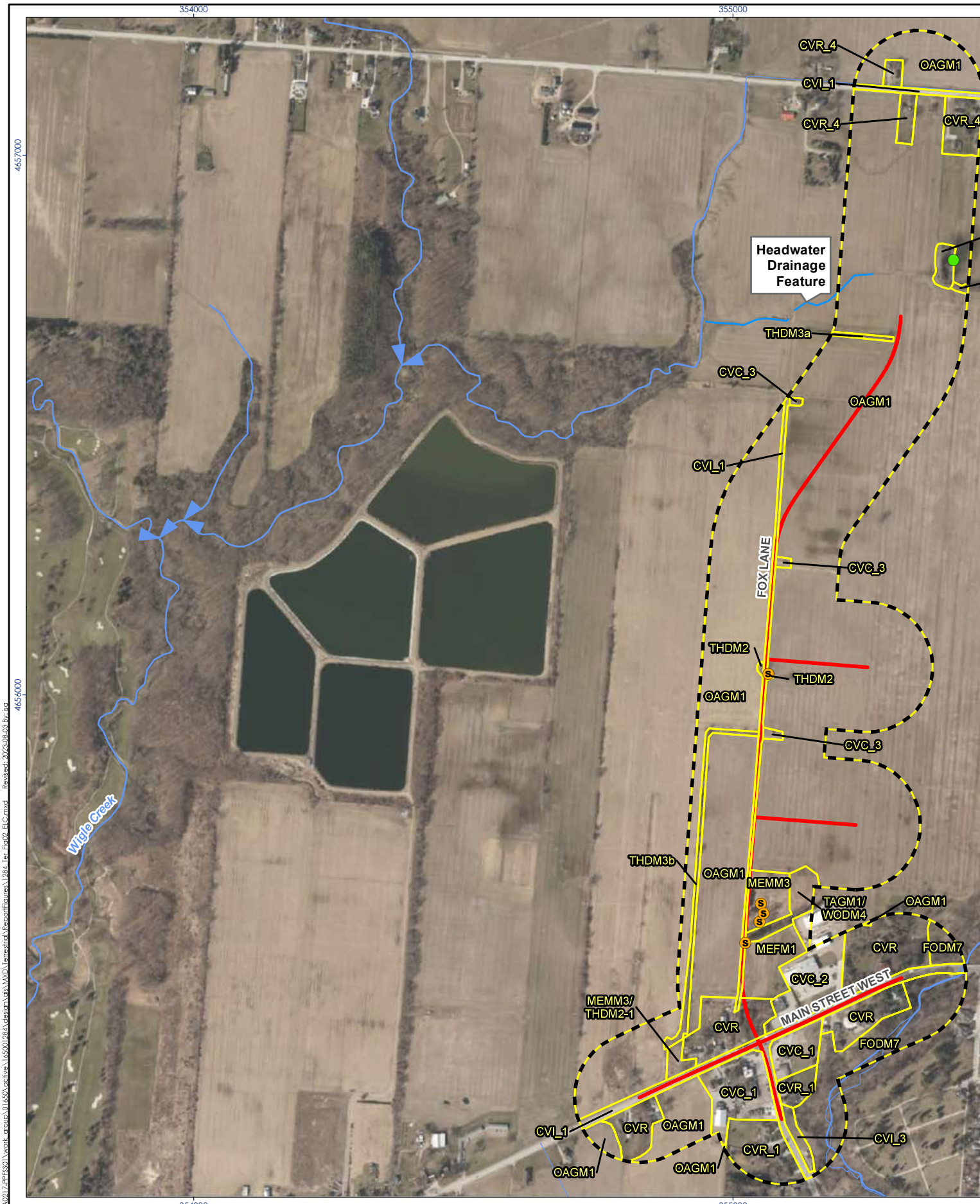
Appendices

Appendix A Figures



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Appendix B Photographic Record



Photo 1: August 25, 2022: Scratch Kennedy Drain on the north side of Road 2 West.



Photo 2: August 25, 2022: Scratch Kennedy Drain on the north side of Road 2 West.



Photo 3: August 25, 2022: Scratch Kennedy Drain on the north side of Road 2 West. Refuge pool at culvert.



Photo 4: August 25, 2022: Scratch Kennedy Drain on the north side of Road 2 West. Refuge pool at culvert.



Photo 5: August 25, 2022: Headwater drainage feature flow path.



Photo 6: August 25, 2022: Headwater drainage feature channel scour.



Photo 7: August 25, 2022: Headwater drainage feature east of Fox Lane, planted with row crop agriculture.



Photo 8: July 24, 2023: SWDM4 ecosite.



Photo 9: July 24, 2023: Concrete piles.



Photo 10: July 24, 2023: Concrete piles.



Photo 11: July 24, 2023: Concrete piles.



Photo 12: August 25, 2022: Mill Creek, downstream view.

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Appendix C Significant Wildlife Habitat Assessment

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Seasonal Concentration Areas			
Waterfowl Stopover and Staging Area (Terrestrial)	Fields with sheet water or utilized by tundra swans during spring (mid-March to May), or annual spring melt water flooding found in any of the following Community Types: Meadow (CUM1), Thicket (CUT1). Agricultural fields with waste grains are commonly used by waterfowl, and these are not considered SWH unless used by Tundra swans in the Long Point, Rondeau, Lake St. Clair, Grand Bend and Point Pelee Areas.	ELC assessment was used to assess features within the Study Area that may support waterfowl stopover and staging areas (terrestrial).	**No candidate** Stopover and occurred within
Waterfowl Stopover and Staging Area (Aquatic)	The following Community Types: Meadow Marsh (MAM), Shallow Marsh (MAS), Shallow Aquatic (SA), Deciduous Swamp (SWD). Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. The combined area of the ELC ecosites and a 100 m radius area is the SWH. Sewage treatment ponds and storm water ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify.	ELC assessment was used to assess features within the Study Area that may support waterfowl stopover and staging areas (aquatic).	**No candidate** Stopover and occurred within
Shorebird Migratory Stopover Area	Shorelines of lakes, rivers, and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of amour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat. The following community types: Meadow Marsh (MAM), Beach/Bar (BB), or Sand Dune (SD).	ELC assessment was used to assess features within the Study Area that may support migratory shorebirds.	**No candidate** Migratory Stop the Study Area

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Raptor Wintering Area	At least one of the following Forest Community Types: Deciduous Forest (FOD), Mixed Forest (FOM) or Coniferous Forest (FOC), in combination with one of the following Upland Community Types: Meadow (CUM), Thicket (CUT), Savannah (CUS), Woodland (CUW) (<60% cover) that are >20 ha and provide roosting, foraging and resting habitats for wintering raptors. Upland habitat (CUM, CUT, CUS, CUW), must represent at least 15 ha of the 20 ha minimum size.	ELC assessment was used to assess features within the Study Area that may support wintering raptors.	**No candidate** Wintering Area Study Area.
Bat Hibernacula	Hibernacula may be found in caves, mine shafts, underground foundations, and karsts. May be found in these Community Types: Crevice (CCR), Cave (CCA).	ELC assessment was used to assess features within the Study Area that may support bat hibernacula.	**No candidate** Hibernacula oc Area.
Bat Maternity Colonies	Maternity colonies considered significant wildlife habitat are found in forested ecosites. Either of the following Community Types: Deciduous Forest (FOD) or Mixed Forest (FOM), that have>10/ha wildlife trees >25 cm diameter at breast height (dbh). Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. Northern Myotis prefer contiguous tracts of older forest cover for foraging and roosting in snags and trees. Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	ELC assessment was used to assess features within the Study Area that may support bat maternity colonies.	**Candidate** hal Colonies occu in the FODM7

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Turtle Wintering Areas	Snapping and Midland Painted turtles utilize ELC community classes: Swamp (SW), Marsh (MA) and Open Water (OA). Shallow water (SA), Open Fen (FEO) and Open Bog (BOO). Northern Map turtle- open water areas such as deeper rivers or streams and lakes can also be used as over-wintering habitat. Water has to be deep enough not to freeze and have soft mud substrate. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen.	ELC assessment was used to assess features within the Study Area that may support areas of permanent standing water but not deep enough to freeze.	**Candidate** hal Areas occurre the SWDM4 e
Snake Hibernacula	Hibernation occurs in sites located below frost lines in burrows, rock crevices, broken and fissured rock and other natural features. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Any ecosite in southern Ontario other than very wet ones may provide habitat. The following Community Types may be directly related to snake hibernacula: Talus (TA), Rock Barren (RB), Crevice (CCR), Cave (CCA), and Alvar (RBOA1, RBSA1, RBTA1).	ELC surveys and wildlife assessments were used to assess features within the Study Area that may support snake hibernacula.	**No candidate** Hibernacula oc Area.
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, or barns found in any of the following Community Types: Meadow (CUM), Thicket (CUT), Bluff (BL), Cliff (CL). Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil, or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	ELC assessment was used to assess features within the Study Area that may support colonial bird breeding habitat.	**No candidate** Nesting Bird B and Cliff) occu Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Colonial-Nesting Bird Breeding Habitat (Tree/Shrubs)	Identification of stick nests in any of the following Community Types: Mixed Swamp (SWM), Deciduous Swamp (SWD), Treed Fen (FET). The edge of the colony and a minimum 300 m area of habitat or extent of the Forest Ecosite containing the colony or any island <15.0 ha with a colony is the SWH. Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.	ELC assessment was used to assess features within the Study Area that may support colonial bird breeding habitat (Trees/Shrubs).	**No candidate** Nesting Bird B (Tree/Shrubs) Area.
Colonial-Nesting Bird Breeding Habitat (Ground)	Any rocky island or peninsula within a lake or large river. For Brewer's Blackbird close proximity to watercourses in open fields or pastures with scattered trees or shrubs found in any of the following Community Types: Meadow Marsh (MAM1-6), Shallow Marsh (MAS1-3), Meadow (CUM), Thicket (CUT), Savannah (CUS).	ELC assessment was used to assess features within the Study Area that may support colonial bird breeding habitat (Ground).	**No candidate** Nesting Bird B occurred within
Migratory Butterfly Stopover Areas	Located within 5 km of Lake Erie or Ontario. A combination of ELC communities, one from each land class is required: Field (CUM, CUT, CUS) and Forest (FOC, FOM, FOD, CUP). Minimum of 10 ha in size with a combination of field and forest habitat present.	ELC assessment was used to assess features within the Study Area that may support migratory butterfly stopover areas.	**No candidate** Butterfly Stopo the Study Area
Landbird Migratory Stopover Areas	The following community types: Forest (FOD, FOM, FOC) or Swamp (SWC, SWM, SWD). Woodlots must be >5 ha in size and within 5 km of Lake Ontario or Lake Erie – woodlands within 2 km of Lake Ontario and Lake Erie are more significant.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support landbird migratory stopover areas.	**No candidate** Migratory Stop within the Stud

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Deer Winter Congregation Areas	Woodlots typically > 100 ha in size unless determined by the MNR as significant. (If large woodlots are rare in a planning area >50 ha.) All forested ecosites within Community Series: FOC, FOM, FOD, SWC, SWM, SWD. Conifer plantations much smaller than 50 ha may also be used.	No studies required as the MNR determines this habitat.	**No candidate** Congregation Study Area.
Rare Vegetation Communities			
Cliffs and Talus Slopes	A Cliff is vertical to near vertical bedrock >3 m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris. Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT. Most cliff and talus slopes occur along the Niagara Escarpment.	ELC assessment was used to assess features within the Study Area that would be considered cliffs or talus slopes.	Cliffs or talus s within the Stud **No candidate** Talus Slopes c Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Sand Barrens	Sand barrens typically are exposed sand, sparsely vegetated and cause by lack of moisture, periodic fires, and erosion. Vegetation can vary from patchy and barren to tree covered but less than 60%. Any of the following Community Types: SBO1 (Open Sand Barren Ecosite), SBS1 (Shrub Sand Barren Ecosite), SBT1 (Treed Sand Barren Ecosite).	ELC assessment was used to assess features within the Study Area that would be considered to be sand barrens.	No sand barre the Study Area **No candidate** occurred within
Alvars	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. Any of the following Community Types: ALO1(Open Alvar Rock Barren Ecosite), ALS1 (Alvar Shrub Rock Barren Ecosite), ALT1 (Treed Alvar Rock Barren Ecosite), FOC1 (Dry-Fresh Pine Coniferous Forest), FOC2 (Dry-Fresh Cedar Coniferous Forest), CUM2 (Bedrock Cultural Meadow), CUS2 (Bedrock Cultural Savannah), CUT2-1 (Common Juniper Cultural Alvar Thicket), or CUW2 (Bedrock Cultural Woodland). An Alvar site > 0.5 ha in size.	ELC assessment was used to assess features within the Study Area that would be considered to be alvar communities.	No alvars were Study Area. **No candidate** occurred within

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Old-growth Forest	Old-growth forests tend to be relatively undisturbed, structurally complex, and contain a wide variety of trees and shrubs in various age classes. These habitats usually support a high diversity of wildlife species. No minimum size criteria t in any of the following Community Types: FOD (Deciduous Forest), FOM (Mixed Forest), FOC (Coniferous Forest). Forests greater than 120 years old and with no historical forestry management was the main criteria when surveying for old-growth forests.	ELC assessment was used to assess features within the Study Area that would be considered to be old-growth forest communities.	No old growth within the Stud **No candidate** Forest occurre
Savannahs	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPS1 (Dry-Fresh Tallgrass Mixed Savannah Ecosite), TPS2 (Fresh-Moist Tallgrass Deciduous Savannah Ecosite), TPW1 (Dry-Fresh Black Oak Tallgrass Deciduous Woodland Ecosite), TPW2 (Fresh-Moist Tallgrass Deciduous Woodland Ecosite), CUS2 (Bedrock Cultural Savannah Ecosite).	ELC assessment was used to assess features within the Study Area that would be considered to be savannah communities.	Savannah wer Study Area. **No candidate** occurred within

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Tall-grass Prairies	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover. In Ecoregion 7E, known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario). Any of the following Community Types: TPO1 (Dry Tallgrass Prairie Ecosite), TPO2 (Fresh-Moist Tallgrass Prairie Ecosite).	ELC assessment was used to assess features within the Study Area that would be considered to be tall-grass communities.	**No candidate** Prairies occurr
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG.	ELC assessment was used to assess features within the Study Area that would be considered to be other rare vegetation communities.	**No candidate** Communities o Area.
Specialized Habitat for Wildlife			
Waterfowl Nesting Area	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4. Note: includes adjacency to Provincially Significant Wetlands.	ELC assessment was used to assess features within the Study Area that may support nesting waterfowl. Habitats adjacent to wetlands without standing water were not considered candidate SWH.	**No candidate** Nesting Area o Area.
Bald Eagle and Osprey nesting, Foraging, and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms). ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds, and wetlands.	ELC surveys and Woodland Assessments were used to assess features within the Study Area that may support nesting, foraging, and perching habitat for large raptors.	**No candidate** and Osprey ne Perching Habi Study Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland/forest stands combined >30 ha and with >4 ha of interior habitat. Interior habitat determined with a 200 m buffer. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small offshore islands. May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3.	ELC surveys, Woodland Assessments and GIS analysis were used to assess features within the Study Area that may support nesting habitat for woodland raptors.	There are no w combined >30 habitat within t **No candidate** Raptor Nesting the Study Area
Turtle Nesting Areas	Exposed mineral soil (sand or gravel) areas adjacent (<100 m) or within the following ELC Ecosites: MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, BOO1, FEO1 Best nesting habitat for turtles is close to water, away from roads and sites less prone to loss of eggs by predation from skunks, raccoons, or other animals. For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	ELC surveys and GIS analysis were used to assess features within the Study Area that may support turtle nesting areas.	**No candidate** Areas occurre
Seeps and Springs	Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs. Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system	ELC surveys and GIS analysis were used to assess features within the Study Area that may support Seeps and Springs.	**No candidate** Springs occurr

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Amphibian Breeding Habitat (Woodland)	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Presence of a wetland, lake, or pond within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat	ELC assessment was used to assess features within the Study Area that may support woodland breeding amphibians.	**Candidate** hal Breeding Habi within the Stud
Amphibian Breeding Habitat (Wetland)	ELC Community Classes SW, MA, FE, BO, OA and SA. Wetland areas >120 m from woodland habitats. Wetlands and pools (including vernal pools) >500 m^2 (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	ELC assessment was used to identify wetland habitat features within the Study Area including those that may support bullfrogs (i.e., natural open aquatic and marsh habitats greater than 1 ha in size).	**No candidate** Breeding Habi within the Stud
Habitat for Species of Conservation Concern (*Not including Endangered or Threatened Species*)			
Marsh Bird Breeding Habitat	All wetland habitats with shallow water and emergent aquatic vegetation. May include any of the following Community Types: Meadow Marsh (MAM), Shallow Aquatic (SA), Open Bog (BOO), Open Fen (FEO), or for Green Heron: Swamp (SW), Marsh (MA) and Meadow (CUM) Community Types.	ELC assessment was used to identify marshes with shallow water and emergent vegetation that may support marsh breeding birds.	**No candidate** Breeding Habi Study Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Woodland Area-sensitive Bird Breeding Habitat	Habitats >30ha where interior forest is present (at least 200 m from the forest edge); typically, >60 years old. These include any of the following Community Types: Forest (FO), Treed Swamp (SW)	ELC surveys and GIS analysis were used to determine whether woodlots that occurred within the Study Area that were >30 ha with interior habitat present (>200 m from edge).	No woodlots e within the Stud **No candidate** Area-sensitive occurred within
Open Country Bird Breeding Habitat	Grassland areas > 30 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or hay or livestock pasturing in the last 5 years, in the following Community Type: Meadow (CUM).	ELC surveys and GIS analysis were used to identify grassland communities within the Study Area that may support area-sensitive breeding birds.	No non-agricul communities > within the Stud **No candidate** Bird Breeding the Study Area
Shrub/Early Successional Bird Breeding Habitat	Oldfield areas succeeding to shrub and thicket habitats >10 ha, not Class 1 or Class 2 agricultural lands, with no row-cropping or intensive hay or livestock pasturing in the last 5 years, in the following Community Types: Thickets (CUT), Savannahs (CUS), or Woodlands (CUW).	ELC surveys and GIS analysis were used to identify large CUT, CUS or CUW communities that may support shrub/early successional breeding birds.	Suitable veget not identified w **No candidate** Successional B occurred within
Terrestrial Crayfish	Meadow marshes and edges of shallow marshes (no minimum size). Vegetation communities include MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3. Construct burrows in marshes, mudflats, meadows Can be found far from water	ELC assessment was used to identify shallow marsh and meadow marsh communities that occurred within the Study Area.	Suitable veget not identified w **No candidate** Crayfish occur
Special Concern and Rare Wildlife Species (i.e. all special concern and S1-S3 species)			
Birds			
Barn Swallow (*Hirundo rustica*)	Nest on walls or ledges of barns and other human-made structures such as bridges, culverts, or other buildings; forages in open areas for flying insects (COSEWIC 2011a).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidat** within the Stu
Bald Eagle *(Haliaeetus leucocephalus)*	Nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidat** within the Stu

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural H Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Common Nighthawk (*Chordeiles minor*)	The common nighthawk requires open areas with little to no ground vegetation. This can include forests clearings, logged or burnt-over areas, and rock barrens They prefer natural sites, but have been found to nest in parks, cultivated fields, gravel roads, orchards, and along gravel roads and railways (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.
Eastern Wood-Pewee (*Contopus virens*)	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal forested comm (FODM7) in th
Short-eared Owl (*Asio flammeus*)	These owls inhabit open habitats such as agricultural lands, wetlands, and grasslands. This area sensitive species nests on the ground usually in tall vegetation and typically prefers 75 hectares of suitable habitat for nesting to occur (Cadman et al. 2007).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Tufted Titmouse (*Baeolophus bicolor*)	Tall open, oak dominant forest with a heavy herbaceous layer of grasses and forbs. Prefers pin oak forest (Cadman et al. 2007).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Wood Thrush (*Hylocichla mustelina*)	Mature deciduous forest, preferring large stands but will also use smaller stands of trees. Moist stands of tall trees with well-developed undergrowth (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Insects			
Carolina Sphinx *(Manduca sexta)*	A wide variety of habitats including agricultural fields and gardens. Host plants include potato, tobacco, tomato, and other plants in the nightshade family (BMNA 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area not growing pla family.
Cicada Killer (*Sphecius speciosus*)	Forest edges, gardens, waste places; nests in the ground, prefers sandy soils (Borror & White 1998).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Duke's Skipper (*Euphyes dukesi*)	The Duke's Skipper inhabits woodland clearings, forest edges, ditches and along riverbanks, most important foodplants include Shoreline Sedge (*Carex hyalinolepis*) and Lake Sedge (*Carex lacustris*) (Hall 2014).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Monarch (*Danaus plexippus*)	Forage and nest in open habitat (i.e., meadows, grasslands, and pastures) with various milkweed species (Asclepias spp.) and/or wildflowers such as goldenrods (Solidago spp.), asters (Aster spp.) and yarrow (Achillea millefolium) (COSEWIC 2016a).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Mammals			
Eastern Mole (*Scalopus aquaticus*)	A range of habitats including forest, open woodlands, meadows, pastures, and fields. Also found in urban settings such as parks, cemeteries, and residential yards. Prefers sand-based soils with cover of woody plants (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Plants			
American Alumroot (*Heuchera americana*)	Deciduous forests, often on dry to moist banks and ravines (Rezniek et.al. 2011).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Biennial Gaura (*Oenothera gaura*)	Riverbanks, roadsides, fields, vacant lots (Rezniek, et.al. 2011).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.
Climbing Prairie Rose (*Rosa setigera*)	Climbing Prairie Rose is found in open habitats such as old fields, meadows, prairies and shrub thickets with clay and clay-loam soils (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.
Field Dodder (*Cuscuta campestris*	Banks of rivers, fields, croplands, gardens, and waste areas. Primary found in disturbed areas (Illinois Wildflowers 2018).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.
Illinois Carrionflower (*Smilax illinoensis*)	Forests and thickets, on floodplains and riverbanks, under oaks, and in rich deciduous forests (Rezniek et.al., 2011).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Many-fruited Seedbox (*Ludwigia polycarpa*)	The Many-fruited Seedbox grows in marshes, swamps, ditches, sandy excavations, and railroads (Reznicek et al. 2011).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Study Area.
Pawpaw (*Asimina triloba*)	Occurs on the rich moist soils of floodplains and wet woods; in colonies as an understory tree; shade-tolerant (Farrar 1995).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Creek forested
Schweinitz's Flatsedge (Cyperus schweinitzii)	Dry sandy soils on dunes, shores of rivers or lakes, woodlands (Native Plant Trust 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Shellbark Hickory (*Carya laciniosa*)	Occurs on moist to wet sites, in valleys and along stream banks, mixed with other broadleaf trees (Farrar 1995).	ELC assessment was used to assess features within the Study Area that may support this species.	**Confirmed** ha Area. The spe FODM11 ecos

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Swamp Rose-mallow (*Hibiscus moncheites*)	The Swamp Rose-mallow is found only in southern Ontario, in the coastal marshes and remnant wetlands of Lakes Erie, St. Clair, and Ontario; those coastal marshes which are protected by a barrier beach; it is occasionally found in open wet woods, thickets and drainage ditches in a few inland areas (COSEWIC 2004).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Woodland Lettuce (*Lactuca floridana)*	Rich woods, thickets and clearings providing shade or partial shade and moist to wet soils (LBJWC N.D).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area
Reptiles			
Midland Painted Turtle (*Chrysemys picta marginata*)	Shallow aquatic habitats with slow-moving water, soft bottoms, aquatic vegetation, and abundant basking sites. Typical habitats include swamps, marshes, permanent or temporary ponds, creeks, rivers, and lakes (CHS 2023b).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Area in the SW
Northern Map Turtle (*Graptemys geographica*)	Found in large water bodies such as rivers and lakes. Prefers areas with slow-moving water and basking sites. Nests in sandy, open-canopy habitat within a few hundred meters of water. Overwinters at the bottom of lakes and rivers (CHS 2023c).	ELC assessment was used to assess features within the Study Area that may support this species.	**No candidate** the Study Area

Appendix C Significant Wildlife Habitat Assessment in the Heritage Road to Road 2 West Class EA Natural
Study Area

Candidate Wildlife Habitat	Criteria	Methods	Habitat As Found W
Snapping Turtle (*Chelydra serpentina*)	Generally, inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits (MECP 2023).	ELC assessment was used to assess features within the Study Area that may support this species.	**Candidate** hal Area in the SW
Animal Movement Corridors			
Amphibian Movement Corridor	Corridors may be found in all ecosites associated with water. Determined based on identifying significant amphibian breeding habitat (wetland).	Identified after Amphibian Breeding Habitat - Wetland is confirmed. Movement corridors should be considered when amphibian breeding habitat is confirmed as SWH from Amphibian Breeding Habitat (Wetland).	**Candidate** Am Corridor habita Area, comprise hedgerow at th SWDM4 ecosi drainage featu Creek forest to These corridor woodland bree larger woodlots Area.

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Appendix D Species at Risk Habitat Assessment

Appendix D **Habitat Suitability Assessment in the Heritage Road to Road 2 West Class EA Study Area fo Endangered Species**

Species	Habitat Preference	Habitat Suitabili
Plants		
Butternut	Found in a variety of habitats throughout Southern Ontario, including woodlands and hedgerows (Farrar 1995).	**Yes** - Suitable habitat was present in the
Willowleaf Aster	Openings of oak savannahs but also along railways, roadsides, and abandoned farm fields (MECP 2023)	**Yes** - Suitable habitat was present in the presence of willowleaf aster colony on th SWDM4 ecosite.
Birds		
Bank Swallow	The Bank Swallow excavate nests in exposed earth banks along watercourses and lakeshores, roadsides, stockpiles of soil, and the sides of sand and gravel pits. Single nests may occur, although colonies are typical and range from two to several thousand. Adjacent grasslands and watercourses are used for foraging habitat (Cadman et al. 2007).	**No** - Suitable habitat was not present in t
Barn Owl	Nests and roosts in barns and abandoned buildings. May also use tree cavities or holes in cliff faces. Lives year round at its nest site and hunts for rodents over orchards, and grasslands such as farmlands, fallow fields and meadows (MECP 2023).	**No** - Suitable habitat was not present in t
Bobolink	Nests primarily in forage crops with a mixture of grasses and broad-leaved forbs, predominantly hayfields and pastures (COSEWIC 2010).	**No** - Suitable habitat was not present in t
Chimney Swift	Chimney Swift use chimneys for roosting and breeding, as well as walls, rafters, or gables of buildings and, less frequently, natural structures such as hollow trees, tree cavities and cracks in cliffs (Cadman et al., 2007).	**No** - Suitable habitat was not present in t
Eastern Meadowlark	Meadows, hayfields, and pastures; also, other open habitat types including mown lawn (COSEWIC 2011). Prefers large (~5 ha), low-lying wet grasslands with abundant litter (COSEWIC 2011).	**No** - Suitable habitat was not present in t
Eastern Whip-poor-will	Mix of open and forested areas, such as savannahs, open woodlands or opening in mature deciduous, coniferous and mixed forest (MECP 2023).	**No** - Suitable habitat was not present in t

Appendix D **Habitat Suitability Assessment in the Heritage Road to Road 2 West Class EA Study Area fo Endangered Species**

Species	Habitat Preference	Habitat Suitabili
Red-headed Woodpecker	Lives near open woodland and woodland edges, often found in parks, golf courses, and cemeteries. Typically, many dead snags are required, which are used for nesting and perching (MECP 2023).	**Yes** - Suitable habitat was present in the Creek forested corridor (FODM7 ecosite)
Mammals		
Small-footed Myotis	Small-footed myotis hibernate in caves and abandoned mines in winter, and roost under rocks, in rock outcrops, buildings, under bridges, or in caves, mines, or hollow trees in the spring and summer (MNRF 2017).	**Yes** - Suitable habitat was present in tree Area.
Little Brown Myotis	Trees, buildings, and bridges for roosting; trees for nesting; caves and mines for hibernation (COSEWIC 2013).	**Yes** - Suitable habitat was present in tree Area.
Northern Myotis	Caves provide overwintering habitat (COSEWIC 2013). Rarely uses human-made structures for roosting (COSEWIC 2013).	**Yes** - Suitable habitat was present in tree Area.
Tri-colored Bat	Found in a variety of habitats; caves provide overwintering habitat (COSEWIC 2013).	**Yes** - Suitable habitat was present in tree Area.

Appendix D **Habitat Suitability Assessment in the Heritage Road to Road 2 West Class EA Study Area fo Endangered Species**

Species	Habitat Preference	Habitat Suitabili
REPTILES		
Blanding's Turtle	Blanding's Turtles frequent lakes, ponds, and marshes, and prefer shallow water with abundant aquatic vegetation and a soft bottom (MacCulloch, 2002). They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults usually occupy open or partially vegetated sites, whereas juveniles occupy areas with thick aquatic vegetation including sphagnum, water lilies and algae. Nesting occurs in dry conifer or mixed hardwood forests, up to 410 m from any body of water, in loose substrates including sand, organic soil, gravel and cobblestone, nesting may also occur along gravel roadways (COSEWIC 2005).	**No –** Suitable habitat is not present in the
Massasauga	Occupies tall grass prairies, bogs, marshes, shorelines, forests and alvars. Often bask in open areas such as forest clearings and rock barrens. Forage in lowland habitats; grasslands, wetlands, bogs, and shorelines. Hibernate underground in crevices in the bedrock, tree root cavities and animal burrows where they can get below the frost line but above water table (MECP 2023). Isolated populations persist in suitable habitat in southern Ontario including in the Wainfleet Bog and Ojibway Prairie (MECP 2023).	**No –** Suitable habitat was not present in
Eastern Foxsnake	Eastern Foxsnakes of the Carolinian population primarily use un-forested areas, such as old fields, prairies, marshes, and dune shorelines. Farm field hedgerows and riparian zones along drainage canals are also used regularly, particularly in areas of intensive agriculture. Brush piles, table rocks, tree stumps, root systems of downed trees, driftwood are also often used for shelter and basking sites (COSEWIC 2008).	**Yes** - Suitable habitat was present within

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Appendix E Plant List

VASCULAR PLANT LIST

Extension of Heritage Road between County Road 20 W and Municipal Road 2 W, Kingsville, ON

Plant species observed in August 2022

SCIENTIFIC NAME	COMMON NAME	PROVINCIAL STATUS (S-RANK)	SARO STATUS	COSEWIC STATUS	REGIONALLY SIGNIFICANT IN ESSEX	COEFFICIENT OF CONSERVATISM	COEFFICIENT OF WETNESS
PTERIDOPHYTES (FERNS & FERN ALLIES)							
Equisetum arvense	Field Horsetail	S5				0	0
GYMNOSPERMS (CONIFERS)							
Juniperus virginiana	Eastern Red Cedar	S5				4	3
Picea abies	Norway Spruce	SE3					5
Pinus sylvestris	Scots Pine	SE5					3
Thuja occidentalis	Eastern White Cedar	S5				4	-3
ANGIOSPERMS (DICOTS)							
Abutilon theophrasti	Velvetleaf	SE5					3
Acer negundo	Manitoba Maple	S5				0	0
Acer x freemanii	Freeman's (Swamp) Maple	S5				6	-5
Ailanthus altissima	Tree-of-heaven	SE5					5
Ambrosia artemisiifolia	Common Ragweed	S5				0	3
Ambrosia trifida	Great Ragweed	S5				0	0
Arctium minus	Common Burdock	SE5					3
Asclepias syriaca	Common Milkweed	S5				0	5
Carya laciniosa	Shellbark Hickory	S3				9	-3
Celtis occidentalis	Common Hackberry	S4				8	0
Cichorium intybus	Wild Chicory	SE5					5
Cirsium arvense	Canada Thistle	SE5					3
Cornus drummondii	Rough-leaved Dogwood	S4				4	0
Cornus racemosa	Grey Dogwood	S5				2	0
Daucus carota	Wild Carrot	SE5					5
Erigeron canadensis	Canada Horseweed	S5				0	3
Euphorbia nutans	Nodding Spurge	S4				0	3
Juglans nigra	Black Walnut	S4?				5	3
Lactuca serriola	Prickly Lettuce	SE5					3
Medicago lupulina	Black Medick	SE5					3
Melilotus albus	White Sweet-clover	SE5					3
Morus alba	White Mulberry	SE5					0
Parthenocissus vitacea	Thicket Creeper	S5				4	3
Phytolacca americana	Common Pokeweed	S4				3	3
Plantago lanceolata	English Plantain	SE5					3
Populus deltoides ssp. deltoides	Eastern Cottonwood	S5				4	0
Portulaca oleracea	Common Purslane	SE5					3
Quercus macrocarpa	Bur Oak	S5				5	3
Rhus typhina	Staghorn Sumac	S5				1	3

VASCULAR PLANT LIST

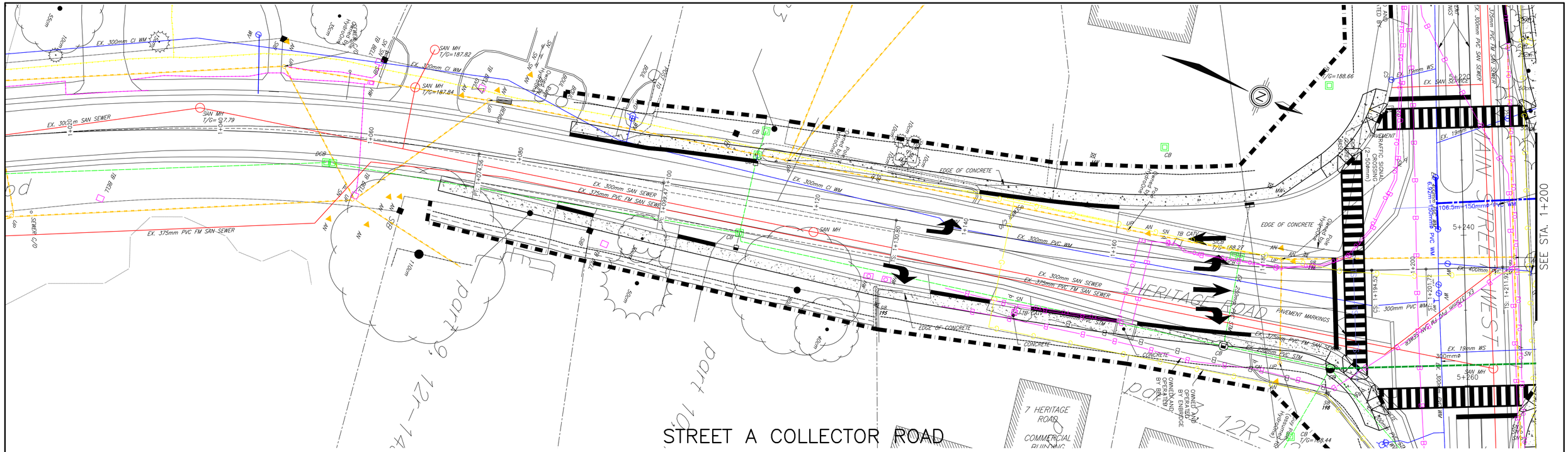
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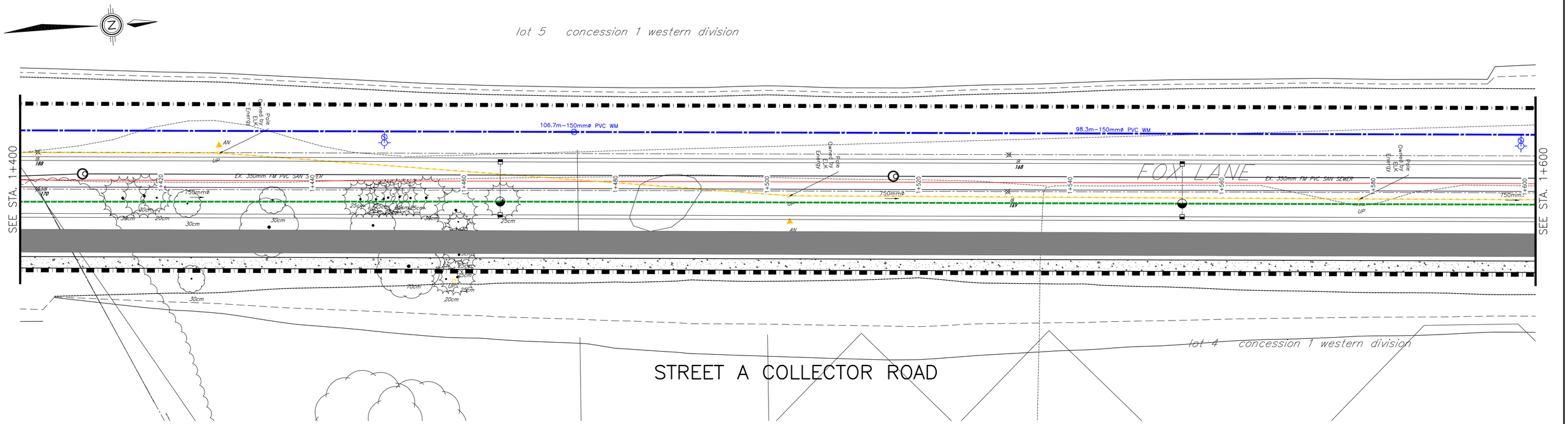
Plant species observed in August 2022

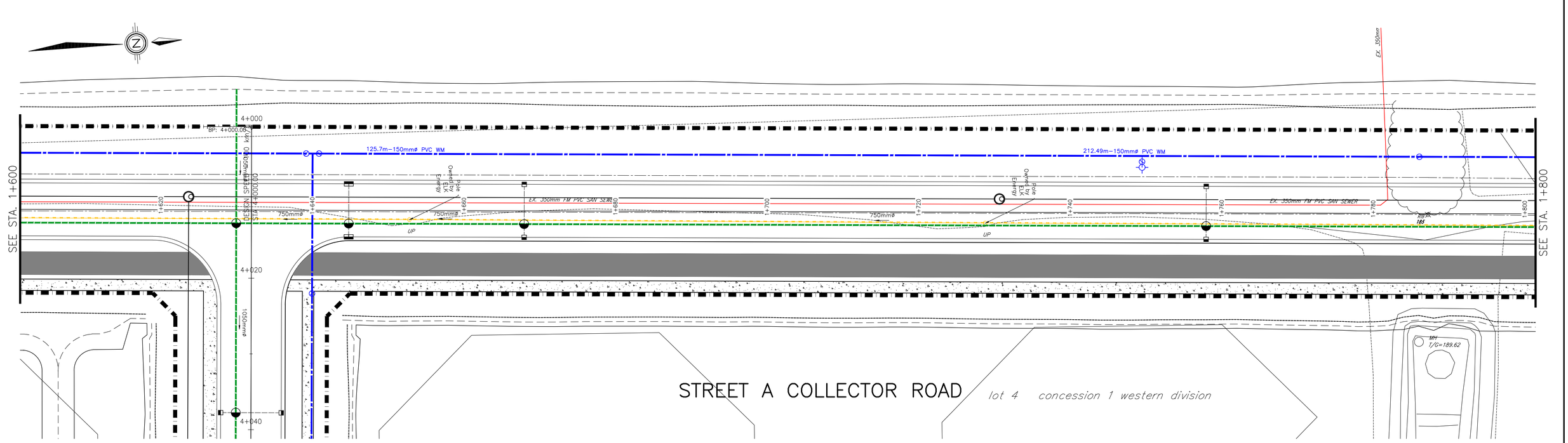
SCIENTIFIC NAME	COMMON NAME	PROVINCIAL STATUS (S-RANK)	SARO STATUS	COSEWIC STATUS	REGIONALLY SIGNIFICANT IN ESSEX	COEFFICIENT OF CONSERVATISM	COEFFICIENT OF WETNESS
Eleusine indica	India Goosegrass	SE3					3
Eragrostis sp.	Lovegrass Species						
Phalaris arundinacea	Reed Canarygrass	S5				0	-3
Phleum pratense	Common Timothy	SE5					3
Phragmites australis ssp. australis	European Reed	SE5					-3
Setaria faberi	Giant Foxtail	SE4					3

FLORISTIC SUMMARY	TOTAL
Total Species	49
Native Species	26
Introduced (exotic) species	23
Species at Risk in Ontario (END, THR or SC)	1
Species at Risk in Canada (END, THR or SC)	1
Rare in Ontario (S1, S2 or S3)	2
Uncommon to common in Ontario (S4)	5
Common to very common in Ontario (S5)	19
Regionally Significant / Rare Within Essex County	0
Highly sensitive plant species with C value of 8, 9 or 10	3
Wetland Plant Species (-5, -4 or -3)	8

Appendix E - Utility Composite


EX. 300mm CI WM
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
SAN MH T/G=187.82
SAN MH T/G=187.84
SAN MH T/G=187.79
EX. 300mm CI WM
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
EDGE OF CONCRETE
EX. 300mm PVC WM
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
CONCRETE
EDGE OF CONCRETE
CONCRETE
EX. 750mm PVC FM SAN SEWER
EX. 600mm PVC STM
EX. 19mm WS
EX. SAN SERVICE
EX. 19mm WS
EX. 19mm WS
EX. 400mm PVC STM
EX. 19mm WS
EX. 300mm PVC SAN SEWER
EX. 300mm PVC SAN SEWER
EX. 300mm PVC WM
EX. 19mm WS
EX. 19mm WS
EX. 19mm WS





EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

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HORIZONTAL

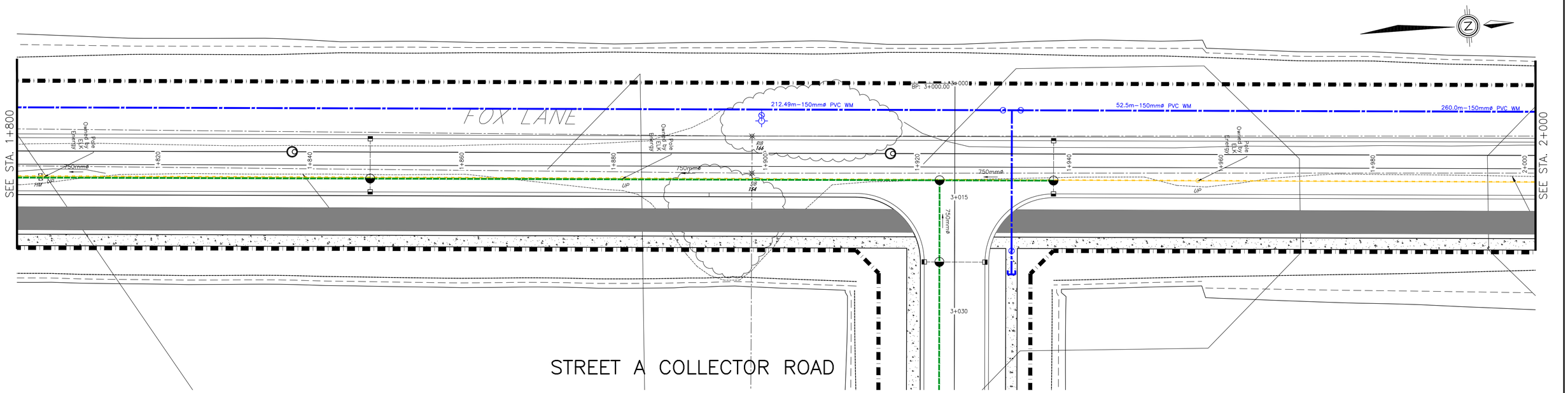
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STA. 1+400 TO 1+800

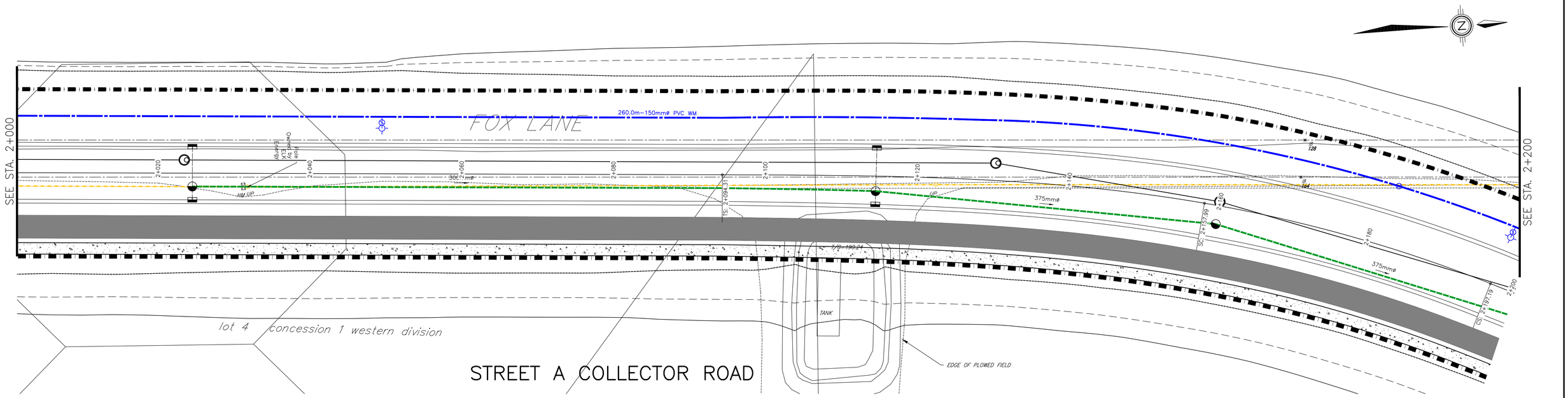
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HORIZONTAL

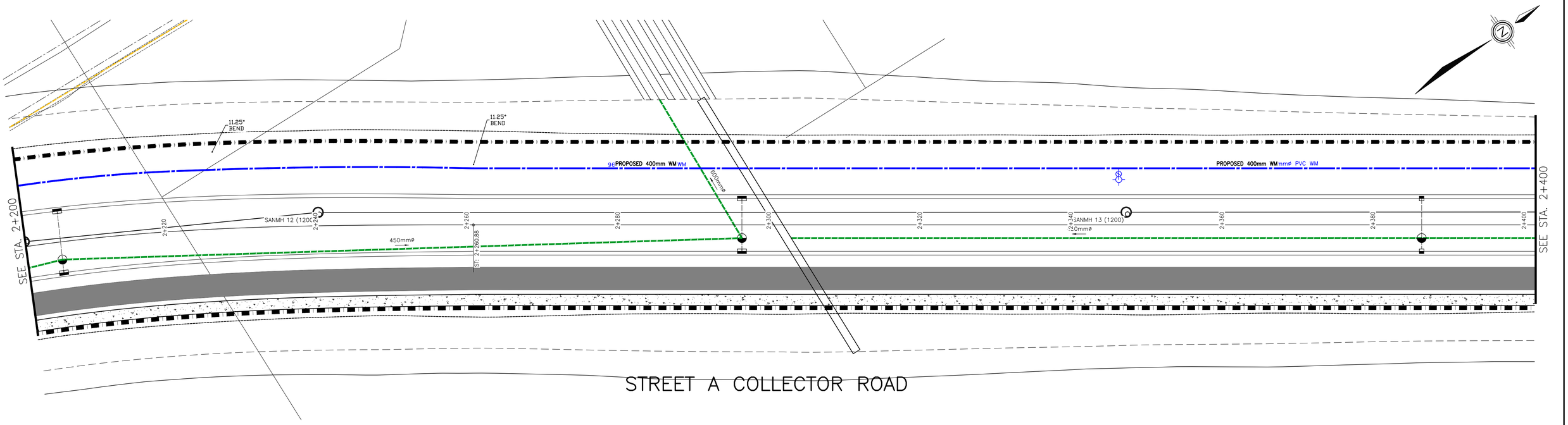
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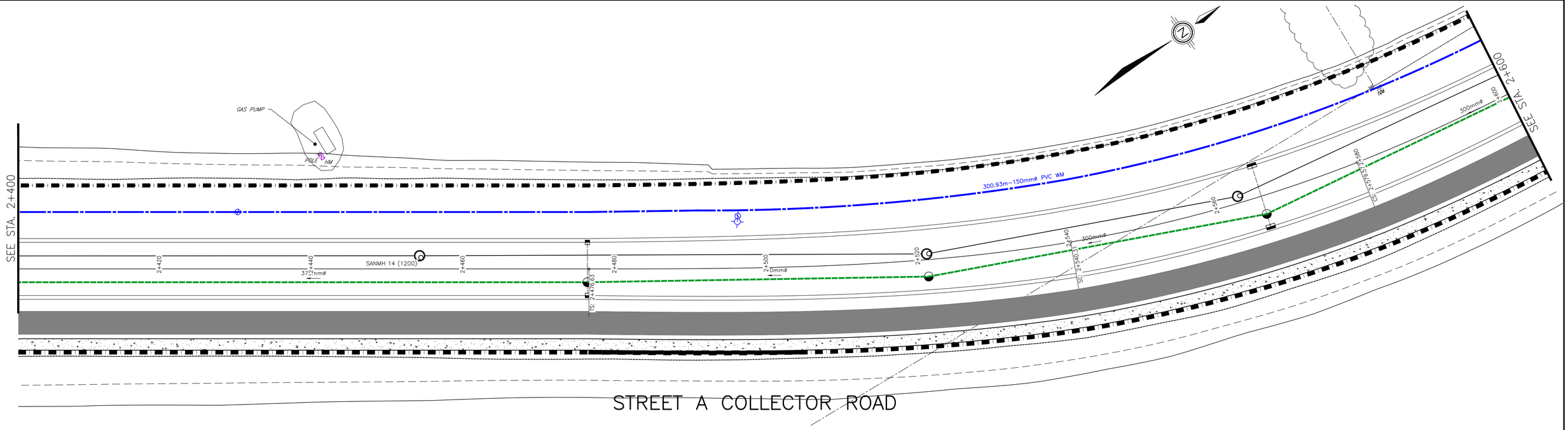
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EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

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APPROVED	KE
DATE	NOV. 2022
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ENGINEER'S STAMP

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SCALE
HORZ. 1:250
2.5m 0 5.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE

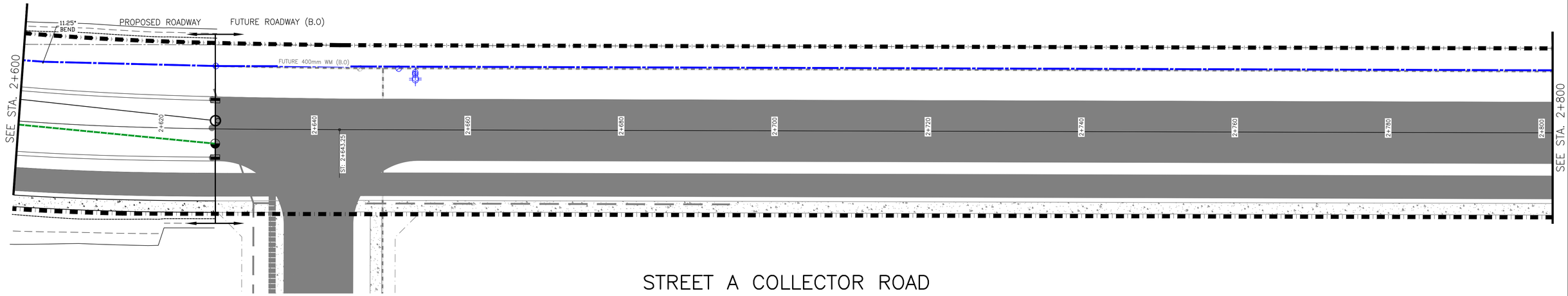
UTILITY COMPOSITE PLAN
STA. 2+200 TO 2+600

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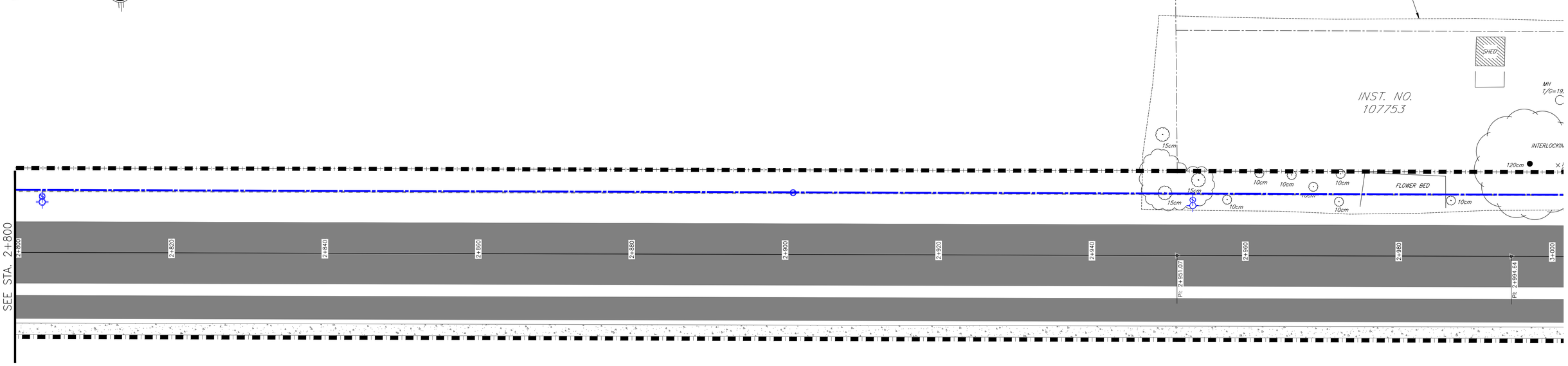
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STREET A COLLECTOR ROAD

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APPROVED	KE
DATE	NOV. 2022
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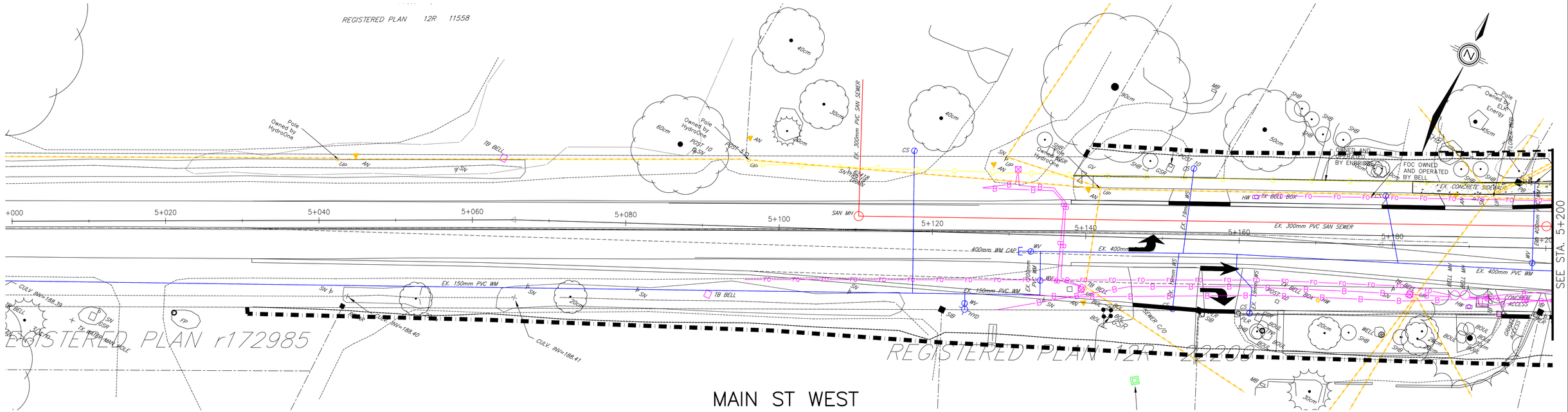
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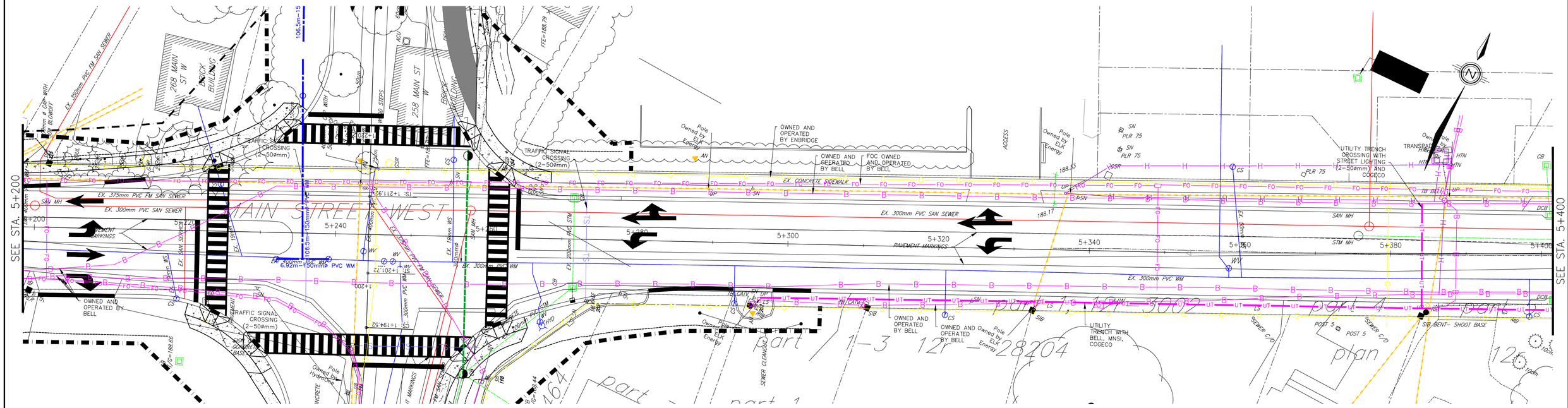
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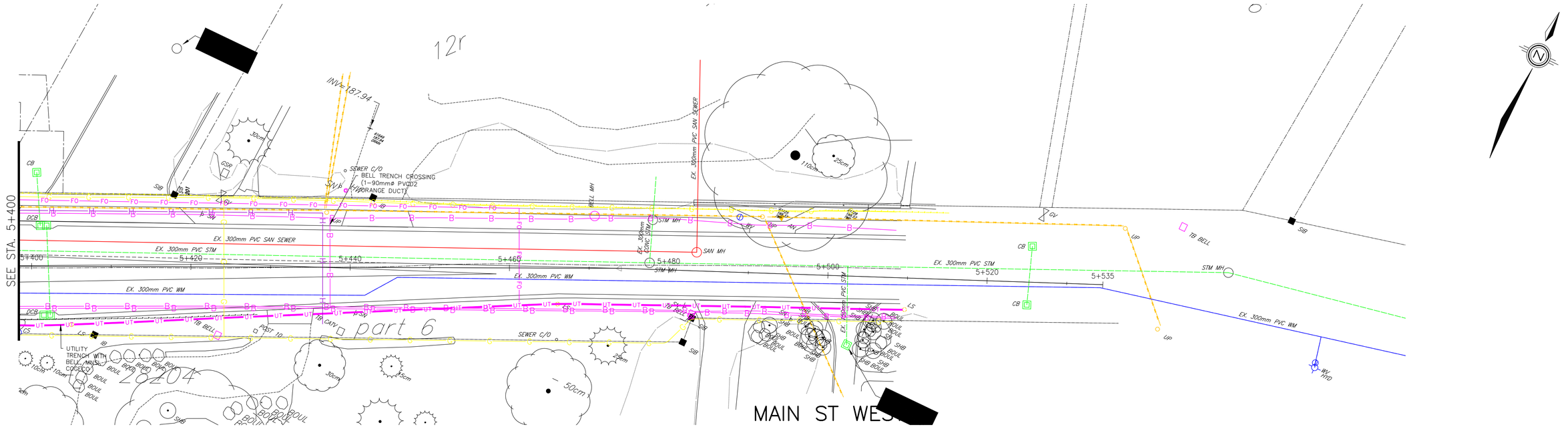
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Appendix F - Stormwater Management Report

Road 2 West to Main Street West Municipal Class Environmental Assessment Stormwater Management Report

October 26, 2023

Prepared for:

Town of Kingsville
2021 Division Road North
Kingsville, ON N9Y 2Y9

Prepared by:

Stantec Consulting Ltd.
100-300 Hagey Boulevard
Waterloo, ON N2L 0A4

Project No.: 165001284

ROAD 2 WEST TO MAIN STREET WEST MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT STORMWATER MANAGEMENT REPORT

This document entitled Road 2 West to Main Street West Municipal Class Environmental Assessment Stormwater Management Report was prepared by Stantec Consulting Ltd. (“Stantec”) for the account of the Town of Kingsville (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes.

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Blake Stevenson

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Marlee Sauder, P.Eng.

Approved by  Digitally signed by Weersink, Bryan Date: 2023.10.26 13:08:23 -04'00'

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Bryan Weersink, P.Eng.

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1.0 INTRODUCTION

The Town of Kingsville (Town) is undertaking a Schedule A Municipal Class Environmental Assessment (MCEA) Study for a future collector road on the west side of the Town, which closely follows the existing Fox Lane alignment and will serve as a northerly extension for Heritage Road, connecting Essex County Road 20 and Road 2 West. The project limits are within the Windsor Essex Region (Region) and provided in Figure 1 (Appendix A).

This Stormwater Management (SWM) Report has been prepared in support of the MCEA. It provides a summary of the existing drainage conditions and the proposed preliminary SWM plan to mitigate potential impacts associated with the proposed road alignment to receiving stormwater systems.

The stormwater management design is anticipated to be constructed in two stages: temporary conditions and ultimate conditions. The temporary conditions represent the condition where the proposed roadway has been constructed and lands to the east and west of the site remain in existing conditions (undeveloped). The ultimate conditions represent the roadway and the lands to the east and west as developed. The temporary conditions provide stormwater management solutions to support development of the proposed roadway, but do not provide sufficient SWM controls for any future development surrounding the roadway. The ultimate conditions will be achieved as a result of the development to the east and west of the proposed roadway. When the future development to the east and west are constructed, the flow and storage requirements of the roadway will need to be accounted for within their site's stormwater management plans. The proposed stormwater management facilities can be combined or expanded in the future based on the future design and consultation with adjacent landowners. At this time, the construction staging of the roadway and the development to the east and west is not confirmed.

2.0 EXISTING SITE CONDITIONS

Within the project limits, the land use is primarily agricultural with the proposed alignment closely following Fox Lane. In existing conditions, the lands adjacent to the project limits are primarily agricultural with some residential development further to the east and sewage lagoons to the west. These agricultural lands are anticipated to be developed into residential homes in the future.

The Scratch Kennedy Drain, Wigle Creek, Morely Wigle Drain and Mill Creek are all within the vicinity of the study area. However, there are no watercourse crossings within the project limits. The Scratch Kennedy Drain runs to the north of the study area, along the north side of Road 2 West. The Scratch Kennedy Drain drains into Wigle Creek which drains southerly to the west of the study area. Mill Creek drains southerly and is located to the east of Heritage Road. It is classified as a DFO Drain Class E. Morley Wigle Drain flows westerly to the north County Road 20. It merges with Wigle Creek north of County Road 20.

There are no areas designated as Areas of Natural and Scientific Interest (ANSI), Environmentally Sensitive Areas (ESA), or Provincially Significant Wetlands (PSW), within the project limits.

3.0 EXISTING DRAINAGE CONDITIONS

The delineation of the existing conditions drainage pattern of the project area and the sites outlet locations are provided by Figure 2 (Appendix A). The delineation was determined through analysis of the Essex Region Conservation Authority's (ERCA) provided Subwatershed delineations, the Town's online GIS data and the Ontario Digital Elevation Model (SWOOP 2015).

The subcatchments are categorized as internal (IN), referring to the area where the proposed roadway right-of-way (ROW) will be constructed, or external (EX), representing the areas adjacent to the proposed roadway that drain to the proposed ROW.

In existing conditions, drainage within the study area is mainly influenced by the topography of the land and agricultural tile drains. The project area is within the Essex Region Conservation Authority (ERCA) jurisdiction. The project limits are split between two watersheds: the Wigle Creek Watershed to the west, and the Mill Creek Watershed to the east of the study area. These major outlets from the study area are illustrated on Figure 2 (Appendix A).

There are three outlets from the development area summarized as the following,

Outlet 1 – Wigle Creek: This outlet is to the northwest of the development area. Wigle Creek is regulated by ERCA and discharges flow southerly, ultimately discharging to Lake Erie. In existing conditions, flow is directed to this outlet through overland flow.

Outlet 2 – Mill Creek (North): This outlet is located to the southeast of the development area. The outlet is to Mill Creek, north of Main Street West. Mill Creek is a DFO Drain Class E. In existing conditions, flow is directed to this outlet through overland flow.

Outlet 3 - Mill Creek (South): This outlet is located to the south of the development area and south of Main Street West. In existing conditions, flow is directed to this outlet through overland flow and collected by existing storm infrastructure in Heritage Road. Stormwater is then discharged to Mill Creek via storm sewer outlet, located to the south of the development area.

A summary of the existing conditions catchments and outlets are provided in Table 1 below.

Table 1: Existing Catchment Conditions

Catchment ID	Area (ha)	Outlet Number	Outlet Description
EX-103	14.88	1	Wigle Creek
EX-104	11.92	2	Mill Creek (North)
EX-105	4.46	3	Mill Creek (South)
EX-106	1.01	3	Mill Creek (South)
IN-103	1.37	1	Wigle Creek
IN-104	2.34	2	Mill Creek (North)
IN-105	0.74	3	Mill Creek (South)

In accordance with the Fill and Floodline Mapping, Cedar, Wigle and Mill Creeks, Technical Report (1981) prepared by Dillon Consulting for ERCA, it was determined this project is to use the Mill and Wigle Creek 100-year peak flow rate output as Allowable Release Rates (ARR) to mitigate downstream impacts of the development. Table 2 provides a summary of the calculated ARR's for this development.

Table 2: Allowable Release Rate Conditions

Outlet	100-year Peak Flow Rate[1] (m^3/s)	Subcatchment ID	Subcatchment Area	% of Subwatershed Catchment	Prorated 100-year Peak Flow Rates (ARR) (m^3/s)
Wigle Creek	17.70	IN-103	1.37	0.31	0.05
Mill Creek	16.70	IN-104	2.34	0.72	0.12
	16.70	IN-105	0.74	0.23	0.04

1. In accordance with the Fill and Floodline Mapping, Cedar, Wigle and Mill Creeks, Technical Report, Essex Region Conservation Authority, Dillon Consulting, February 1981

2. Wigle and Mill Creek 100-year peak flow rate taken from hydrology output

The outlet to Mill Creek (South) will receive drainage through connection to the exiting storm sewers within Heritage Road. The existing 300 mm diameter storm sewer's capacity is greater than the calculated ARR. Therefore, the ARR is used as the target release rate.

3.1 SOIL AND GROUNDWATER CONDITIONS

In accordance with Chapman and Putnam's "The Physiography of Southern Ontario" (1984), the project area is located within an area indicated as Bevelled Till Plain. According to the "Surficial Geology of Southern Ontario" (Ontario Geological Survey, 2010), clay to silt-textured till and fine-textured glaciolacustrine deposits containing silt, clay and minor sand and gravel are present within the project area. A detailed geotechnical investigation of the project area was not available at the time of preparing this report, however, should be completed for detailed design.

It is noted in the *Windsor/Essex Region Stormwater Management Standards Manual* that the region has many areas known to be poor locations for infiltration practices due to flat topography and low infiltration rates. The study area may fit this description of poor infiltration conditions. This is to be determined at detailed design through further geotechnical and hydrogeological studies.

3.2 SIGNIFICANT NATURAL FEATURES

Within the project limits there are no significant natural features documented as present. There are no aquatic features within the project limits. However, the Scratch Kennedy Drain's regulation limit crosses into the project limits. Wigle Creek and Mill Creek are located to the west and the east of the project area, respectively.

4.0 STORMWATER MANAGEMENT OBJECTIVES

The project area is within ERCA's jurisdiction, however, is split between the boundary of the Wigle Creek Watershed and the Mill Creek Watershed. Both watersheds flow southerly toward Lake Erie.

The preliminary SWM Plan for Road 2 West to Main Street West extension has been completed in accordance with the following background documents and guidelines:

- Functional Stormwater Management Design Report, Conklin Subdivision, Amico Properties (April 2023).
- Ministry of the Environment, Conservation and Parks (MECP), Stormwater Management Planning and Design Manual (2003).
- Ministry of Transportation Ontario (MTO), Highway Drainage Design Standards (2008).
- Essex Region Conservation Authority (ERCA), *Windsor/Essex Region Stormwater Management Manual* (2018).
- The Town of Kingsville, Development Manual (2020).
- Fill and Floodline Mapping, Cedar, Wigle and Mill Creeks Technical Report, Dillon Consulting Engineers and Planners (1981).

Based on the above noted documents, the following design criteria have been applied in the development of the drainage and stormwater management strategies for this project.

Storm Sewer System

- Based on the *Windsor/Essex Region Stormwater Management Standards Manual*, the minor drainage system is to be sized to convey runoff from a 5-year design storm event. Previously, minor systems were designed for the 2-year design storm event. If the new system is discharging to a system designed to the 2-year event, flow control will be required upstream. The storm sewer system is analyzed under a separate cover.

Water Quality Control

- Based on the *Windsor/Essex Region Stormwater Management Standards Manual*, a Normal level of treatment per the MECP's *Stormwater Management Planning and Design Manual*, is the standard requirement for the Essex's Region, through removal of 70% Total Suspended Solids (TSS) is required.

Water Quantity Control

- Wigle and Mill Creek
    - Allowable release rates were calculated based on watershed's 100-year flow rates and prorated to the development area catchments.

Erosion Control

- As stated in the *Windsor/Essex Region Stormwater Management Standards Manual,* the region has relatively flat gradients and corresponding low flow velocities within watercourses and in-stream erosion is not expected to be a prominent issue. For release to watercourses within the Windsor Essex Region, a minimum 24-hour detention of the 32 mm Runoff Volume Control Target (RVC_T) or water quality storm is recommended as erosion control.

Water Balance

- The RVC_T for the Region is 32 mm, which corresponds to the 90th percentile of rainfall for the Region. It is noted within the *Windsor/Essex Region Stormwater Management Standards Manual,* implementation of low impact development (LID) features within the Region may be difficult as the Region has primarily clay soils, lack of topographic relief and high groundwater and surface backwater conditions. A detailed geotechnical investigation should be completed for detailed design to determine suitability of the site for LID features.

Climate Change

- In accordance with the *Windsor/Essex Region Stormwater Management Standards Manual,* the recommended approach for the Region is to model an Urban Stress Test event with a rainfall volume of 150 mm to design for future conveyance of increased storm events due to climate change.

5.0 PROPOSED DRAINAGE CONDITIONS

The proposed works include the design and implementation of a 'complete streets' collector road on the west side of Kingsville to meet future traffic and municipal servicing needs. The new road will increase the net impervious area from the existing conditions, resulting in increased flow and pollutant runoff. The proposed roadway includes one travel lane for traffic in each the north and south direction. The roadway's minor system will include catchbasins and a proposed storm sewer system. Major storm events will drain by overland flow and temporary swale alignments along the roadway.

Figure 3 (Appendix A) provides the proposed conditions SWM drainage area plan. A hydrological model was prepared using SWMMHYMO, to compare the proposed peak flow rates to the allowable release rates and determine storage requirements. The Intensity-Duration-Frequency (IDF) curves were used in accordance with the ERCA's *Windsor/Essex Region Stormwater Management Standards Manual*, to determine rainfall intensity. The IDF parameters can be found in Appendix B, the SWMMHYMO text files and model schematic can found in Appendix C. The yielded results of the hydrological model can be found for each of the proposed catchments in Table 3, below.

Table 3: Proposed Catchment Conditions

Catchment ID	Total Area (ha)	Imperviousness (%)	Outlet Number	100-year Peak Flow Rates (m^3/s)
EX-203	14.88	0	1	1.094
EX-204	11.92	0	2	0.894
EX-205	4.46	5	3	0.388
EX-206	1.01	60	3	0.362
IN-203	1.37	90	1	0.696
IN-204	2.34	90	2	1.174
IN-205	0.74	90	3	0.411

The peak flow rates in the proposed conditions are calculated to exceed the allowable release rates, due to the increase in impervious surface within the internal catchments. Stormwater control measures are required to service all internal catchments, prior to discharging to the receiving watercourse / private or municipal sewer system. Dry ponds are proposed to service catchments IN-203 and IN-204, in the temporary conditions. Due to space and grading constraints, an underground storage system is recommended to service catchment IN-205 in the temporary and ultimate conditions. Due to grading constraints and cover issues, the dry pond servicing catchment IN-204 is sized to control the flow from IN-204 to the ARR and safely convey the flow from EX-204 through. Stormwater calculations are included in Appendix B, the required storage volumes to control the post development flows to the existing conditions are summarized in Table 4.

Table 4: Required Storage

Storage Unit ID	Outlet Number	Watershed Outlet	Total Storage Volume (m^3)	Stormwater Management Control Measure	Estimated Footprint Area (m^2)
IN-203	1	Wigle Creek	1116	Dry Pond	1248
204	2	Mill Creek (North)	369	Dry Pond	480
IN-205	3	Mill Creek (South)	590	Underground Chamber	-

To covey flow from the proposed ROW to the attributed dry pond and subsequent outlet, grassed swales are proposed and are shown on Figure 4. Temporary grassed swales have been positioned along the roadside to direct flow to temporary culvert crossings of the proposed roadway where external catchments will drain. Each swale was sized according to its prorated flow using the Urban Stress Test. A brief summary of the swale sizes can be found in Table 5, while a more detailed summary can be located in Appendix B.

Table 5: Swale Sizing

Swale ID	Contributing Catchment	Location Description	Cross Section	Contributing Area	Prorated Flow (m^3/s)	Channel Slope (m/m)	Maximum Depth (m)	Minimum Depth (m)
S1	EX-203 (East of Road)	North of Centerline	Triangular	67%	0.972	0.00455	1.05	0.5
S2		South of Centerline	Triangular	33%	0.478	0.00745	1.05	0.5
S3	EX-203 (West of Road)	Towards Wigle	Triangular	100%	1.450	0.00100	1.05	0.9
S4	IN-203 (West of Road)	Towards pond	Triangular	100%	0.525	0.00100	0.6	0.6
S5	EX-204 (West of Road)	North of Centerline	Triangular	81%	0.958	0.00421	1.05	0.7
S6		South of Centerline	Triangular	19%	0.226	0.00825	1.05	0.3
S7	IN-204 (East of Road)	Towards pond	Triangular	19%	0.168	0.00392	0.3	0.4

Note: All Swales are modelled with an assumed side slope of 3:1 (H:V)

To provide the necessary drainage across the proposed roadway, two temporary centerline culverts have been sized to convey the 100-year design storm without over-topping the ROW. As outlined in Figure 4, catchment EX-203 will have a culvert draining from the east to west and will outlet to the grass swale located west of the road. The other culvert will be located within catchment EX-204 draining from the west



to east, outletting to the proposed roadway's storm sewer network which is sized to convey the 100-year design storm event from the external lands to its outlet at the IN-204 dry pond. Further specifics of the centerline culverts are included in the table below and found in Appendix B.

Table 6: Centerline Culverts

Culvert ID	Catchment ID	Cross Section	Material	Diameter (mm)	Slope (%)	Outlet
C1	EX-203	Circular	CSP	1050	0.3	West of Road – Swale S3
C2	EX-204	Circular	CSP	1050	0.3	Storm sewer within proposed roadway

5.1 SWM QUANTITY CONTROLS

The following sections further describe the stormwater quantity controls proposed for the new roadway. The required conveyance and storage volume controls are provided in the temporary conditions and will need to be accounted for within the design of the developments adjacent to the roadway when they are constructed.

5.1.1 Wigle Creek

5.1.1.1 Swale

In the temporary conditions, four grass swales will be used to direct flow from catchment EX-203 and IN-203 towards the Wigle Creek outlet. As shown on Figure 4, swales S1 and S2 will be located adjacent to the roadway directing flow towards culvert C1. Once the road is bypassed, swale S3 will convey the flow west and discharge directly to Wigle Creek. These swales and culverts have been sized for the most stringent scenario: the event the Amico Properties have not developed to the east of the proposed roadway upon construction of the roadway and the entire existing conditions external lands require conveyance to Wigle Creek.

Swale S4 will collect stormwater from the roadway. The roadways storm sewer network will discharge flow from catchment IN-203 to swale S4 and convey westerly toward the dry pond storage facility and ultimately entering the watercourse.

5.1.1.2 Dry Pond

The dry pond located south of Wigle Creek is designed to control the proposed flow from catchment IN-203 to the ARR, prior to being released to the Wigle Creek watercourse. This dry pond will receive drainage from swale S4. The dry pond will have an outlet discharge directly to Wigle Creek. The Stage Storage Discharge Curve (SSD) is provided in Appendix B. The hydrologic model analysis yielded the following pond performance results. Sizing is provided in Table 4 above.

Table 7: IN-203 Storage Performance

IN-203 Dry Pond		
Inflow	0.696	m^3/s
Outflow	0.049	m^3/s
ARR	0.050	m^3/s
Freeboard in Urban Stress Test	0.280	m
Orifice Diameter	145	mm
Weir Length	2	m
Weir Height	0.3	m

5.1.2 Mill Creek (North)

5.1.2.1 Swale

Three temporary grass swales will be used to direct catchment EX-204 flows towards the Mill Creek watercourse. Swales S5 and S6 will direct flow parallel to the roadway and towards culvert C2. Flow from culvert C2 will discharge to the IN-204 Dry Pond located on the east side of the road. Swale S7 will convey flows from larger storm events from IN-204 to the dry pond.

At the time of writing this report it is understood the development to the east of the proposed roadway (Amico Properties) will be developed prior to the proposed roadway and therefore, a manhole stub provided in their storm sewer design is used as outlet 3. It is understood this manhole stub will be sized to convey the flow rate for the external and internal lands in the existing conditions. Therefore, in the temporary conditions, the manhole stub will have capacity to receive drainage from the external lands and the controlled rate for the internal lands. In the event the development east of the proposed roadway has not been developed when the roadway is being constructed, construction of a temporary conveyance network (swale or pipe) complete with outlet to Mill Creek should be installed until the development is built.

5.1.2.2 Dry pond

The dry pond located west of Mill Creek is designed to control the post development flow from catchment IN-204 to the ARR for the catchment and to convey flow from catchment EX-204. The storm sewer network within catchment IN-204 will discharge directly to this dry pond. The target flow rate is the ARR for catchment IN-204 and the existing conditions flow rate for catchment EX-204. The outlet of the dry pond is proposed to connect into the Amico Properties manhole 38 stub.

The hydrologic model analysis yielded the following pond performance results. Sizing is provided in Table 4 above.

Table 8: IN-204 Storage Performance

IN-204 Dry Pond		
Inflow	1.252	m^3/s
Outflow	0.990	m^3/s
Target Flow Rate	1.01	m^3/s
Freeboard in Urban Stress Test	0.200	m
Orifice Diameter	725	mm
Weir Length	2	m
Weir Height	0.3	m

5.1.3 Mill Creek (South)

5.1.3.1 Underground Chamber

Integrated within the proposed storm sewer infrastructure for catchment IN-205, an underground stormwater management chamber is designed to control the post development flow from catchment IN-205 to the calculated ARR (Appendix D). The stormwater management chambers are proposed to remain through the ultimate conditions.

Table 9: IN-205 Storage Performance

Storage ID	System Area (m^2)	Volume Provided (m^3)	Chamber Type
IN-205 Underground Chambers	577	590	MC-3500 Stormtech®

Potential utility conflicts and the suitability of the native soils should be further investigated in detailed design to confirm the location and layout of this underground chamber.

5.2 WATER QUALITY

To account for the quality of the runoff water in the proposed conditions, Oil/Grit Separator (OGS) units will be installed online within the storm sewer system prior to the discharging to the proposed water quantity features. The OGS units have been designed to remove 70% of the Total Suspended Solids (TSS) from the runoff, and the proposed dry ponds will also provide quality controls achieving up to 60% of TSS removal. Table 10 summarizes the OGS unit characteristics for the following internal catchments, while the suppliers sizing calculations can be found in Appendix E.

Table 10: OGS Sizing Characteristics

Catchment ID	Unit Diameter (mm)	Model	TSS Removal (%)
IN-203	1200	FD-4HC	75
IN-204	1500	FD-5HC	75
IN-205	1200	FD-4HC	79

5.3 CLIMATE CHANGE

In accordance with the ERCA's *Windsor/Essex Region Stormwater Management Standards Manual,* an assumed 150 mm rainfall event, defined as an Urban Stress Test was modelled. This event is the current recommended approach to assess resiliency and vulnerability of design for the potential impacts due to Climate Change.

The event was modelled to assess the conveyance capacity of the proposed stormwater management infrastructure. The proposed dry ponds and grassed swales are all calculated with capacity to covey the Urban Stress Test without overtopping.

5.4 EROSION CONTROL/WATER BALANCE

In accordance with the erosion control/water balance criteria outlined in this report, the proposed design is to provide an onsite capacity to retain the RVC_T from the proposed ROW, based on the 90th percentile of rainfall. The required volume targets per outlet are provided in Table 11, below.

Table 11: 32 mm Retention Volumes

Catchment ID	Total Road Area (ha)	32 mm Infiltration (m^3)
IN-203	1.37	439
IN-204	2.34	749
IN-205	0.74	237
Total	4.45	1425

The ERCA's *Windsor/Essex Region Stormwater Management Standards Manual,* provides flexibility in the implementation of the RVC_T, in the form of a control hierarchy. Priority 1 is to retain the runoff with LID's, priority 2 is to capture and release the runoff volume at a reduced rate and volume with LID's, priority 3 is to use other technologies is provide detention and treatment of runoff.

During detailed design, investigation of the sites soil conditions should be completed. After this investigation has been completed, an analysis of whether implementation of LID's onsite is practical should be completed. If practical, LID's can be sized to meet the required RVC_T. Due to space constraints within the ROW, it is anticipated the most suitable LID's are underground infiltration chambers, tree boxes, or bioretention areas between the ROW and the proposed multi-use pathway.

Further calculations are to be completed during detailed design. The RVC_T volume calculations are provided in Appendix B.

6.0 EROSION AND SEDIMENT CONTROL

The Erosion and sediment control plan for the project must adhere to the Toronto and Region Conservation Authorities' *Erosion and Sediment Control (ESC) Guidelines for Urban Construction*, dated 2019.

To minimize the potential environmental impacts, the following erosion and sedimentation control practices will serve to guide the of the Erosion and Sedimentation Control Plan:

- Limit size of disturbed area.
- Limit duration of soil exposure.
- Retain existing vegetation where feasible.
- Limit slope length and gradient of disturbed areas.
- Preserve overland sheet flow and micro-drainage (avoid concentrated channel flows).
- Break and redirect flows to lower gradients.
- Design and implement staged stripping.
- Prevent disturbance of previously stripped and stabilized areas.
- Stabilize stripped areas with temporary vegetative controls.

Appropriate permanent/temporary erosion control measures to be considered in the design and implementation of the Erosion and Sedimentation Control Plan are:

- Hydroseeding - One step application of seed and hydraulic slurry with adhesive binder (provides permanent stabilization for moderate to steep slopes).
- Seed and Straw Mulch - Alternative two step application that will be applied to provide permanent/temporary vegetative stabilization of disturbed areas.
- Mulch (straw, wood etc.) - Used to provide temporary erosion protection of exposed slopes during over-wintering and for disturbed areas inactive for greater than 45 days.
- Sod - Utilized to provide quick permanent stabilization of disturbed areas. Applications include lateral ditches with gradients < 5% and slopes with steep to moderate grades (i.e., 3% to 5%).
- Erosion Control Blanket - Applied as temporary/permanent erosion protection for slopes greater than 2:1 or as a ditch liner. For permanent applications, seed will be applied prior to installation.

- Aggregate Stone - Appropriate material, such as rip rap will be used to provide immediate permanent erosion protection of lateral ditches > 5% gradient; and along chute/spillways.

For the intended construction on the site described in this report, the following erosion measures should be implemented:

- Install a siltation barrier ring along the site perimeter using heavy-duty silt fence. Keep a provision of temporary.
- Stabilize all disturbed areas where work will not take place for a period of 30 days or more according to OPSS 572.
- Perform street sweeping as necessary to remove soil accumulation caused by construction traffic.
- Use filter socks, where necessary, to further filter the discharge.
- Install and maintain silt sacks at all catchbasins to prevent sediment from entering the proposed storm sewer.

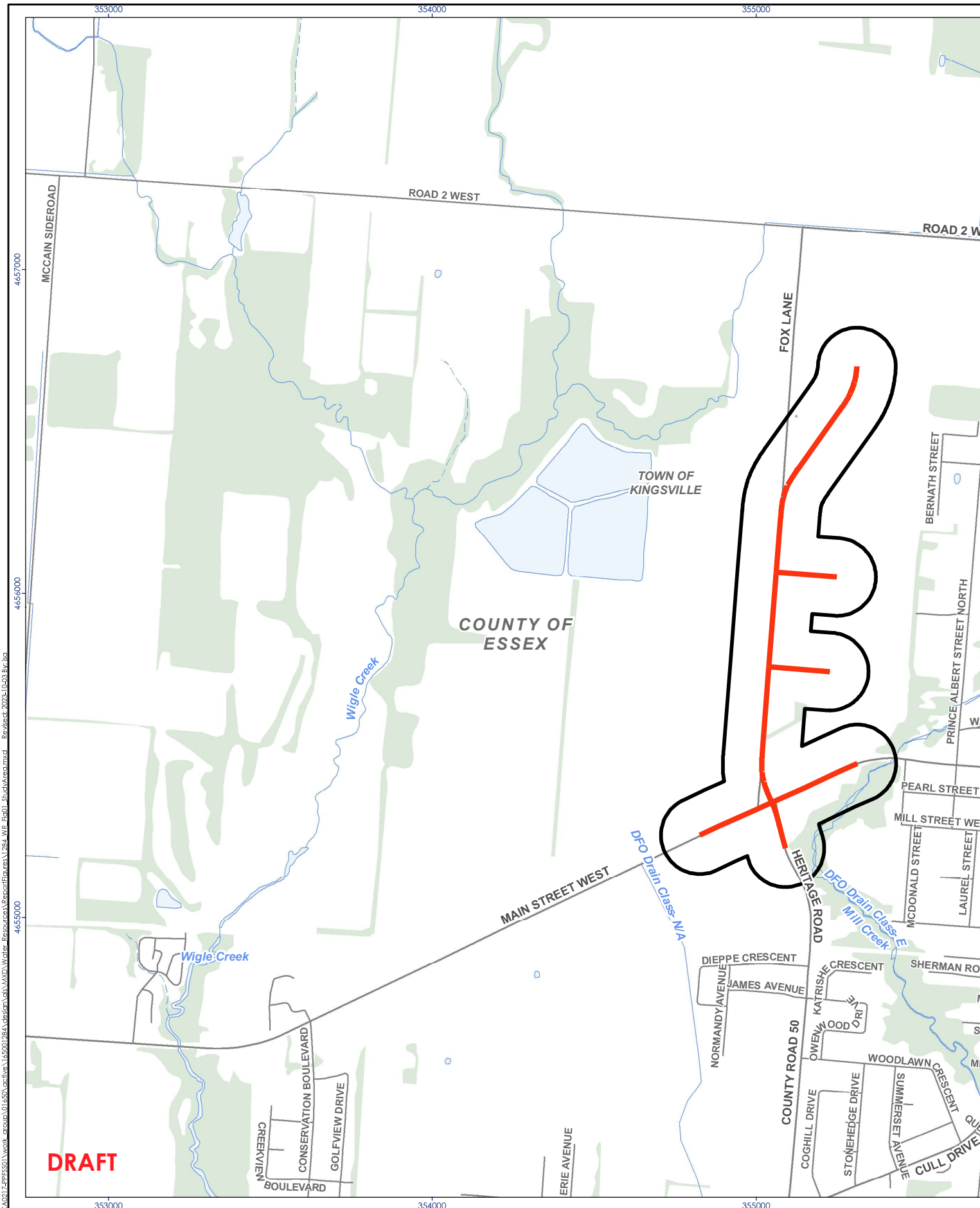
7.0 CONCLUSIONS AND RECOMMENDATIONS

This report documents the Schedule A MCEA Study for a future collector road on the west side of the Town Kingsville.

Based on the preceding report, the following conclusions can be drawn:

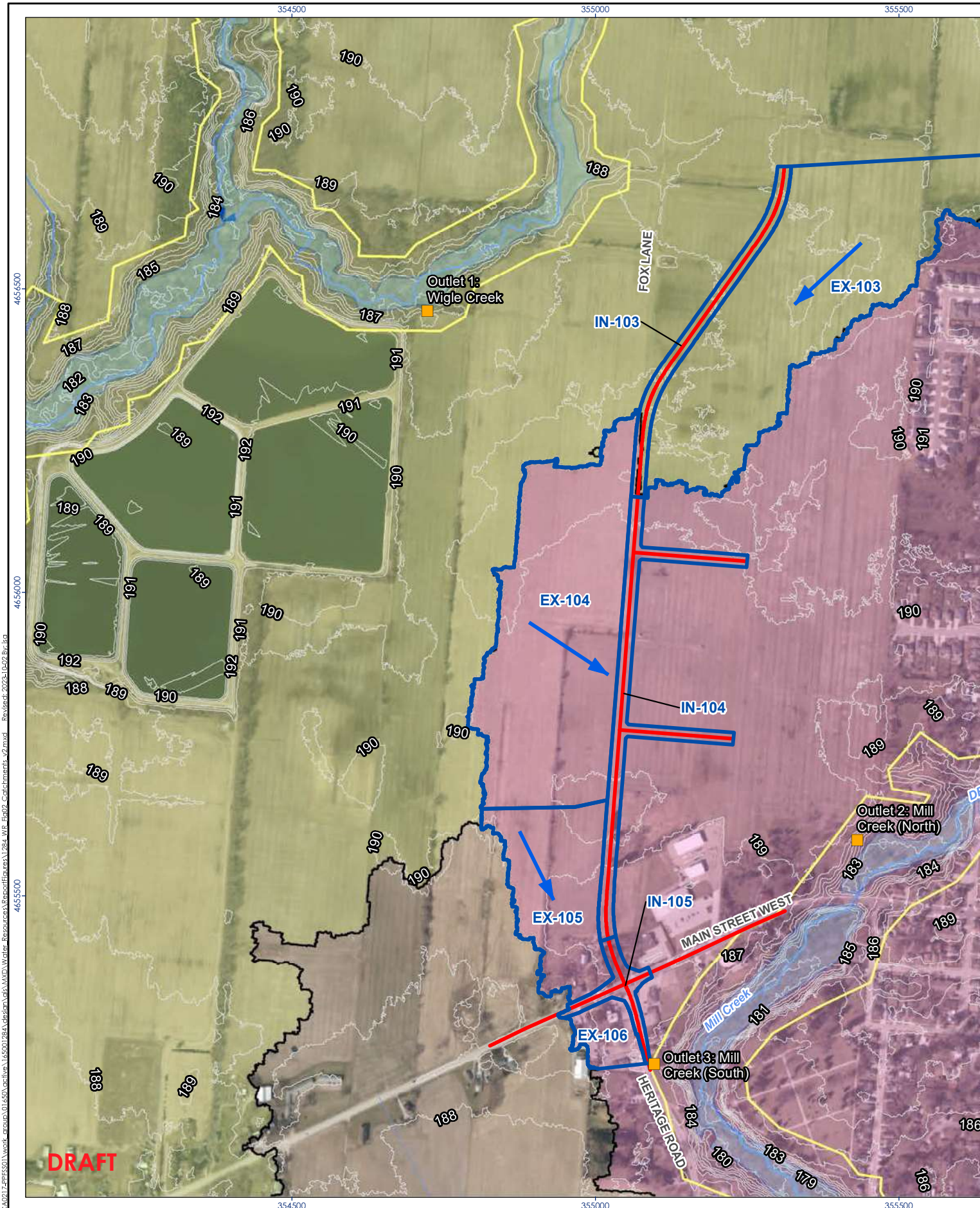
- Storage is required prior to all outlets to Wigle and Mill Creek to match proposed conditions flows to the calculated ARR's, proposed to be achieved through two (2) dry ponds and an underground storage chamber.
- Seven (7) grass swales and two (2) centerline culverts were sized to meet the urban stress test for climate change resilience, and convey flows to the desired outlets.
- Water quality measures in the form of two (2) dry ponds and three (3) OGS devices, at each outlet, will be required for the additional impervious area associated with the proposed works.
- To meet Erosion Control requirements, a retention volume 1425 m^3 is required to retain the first 32 mm of rainfall on-site. To achieve this the following LID's were recommended; underground infiltration chambers, tree boxes, or bioretention areas

APPENDIX A:
Figures

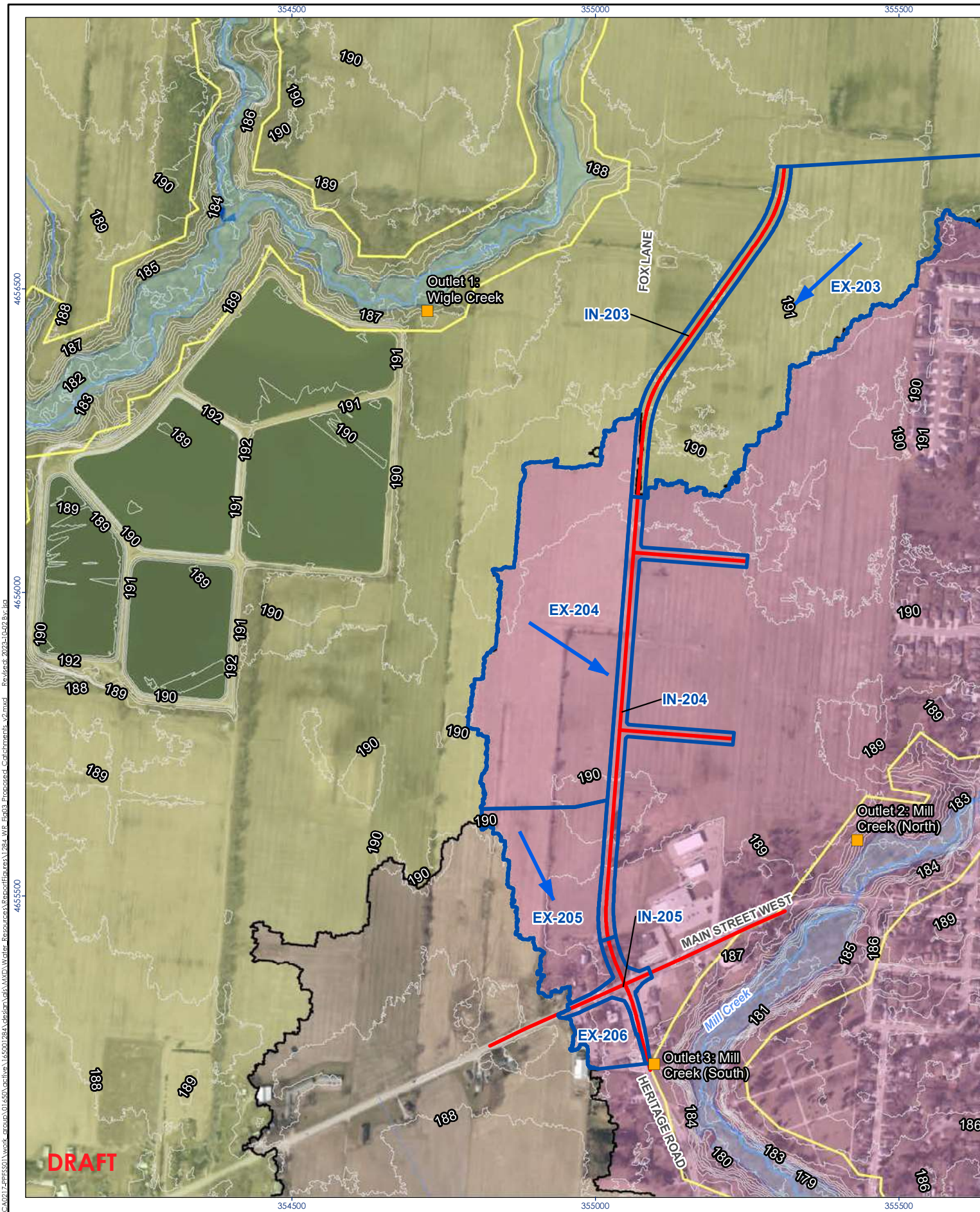


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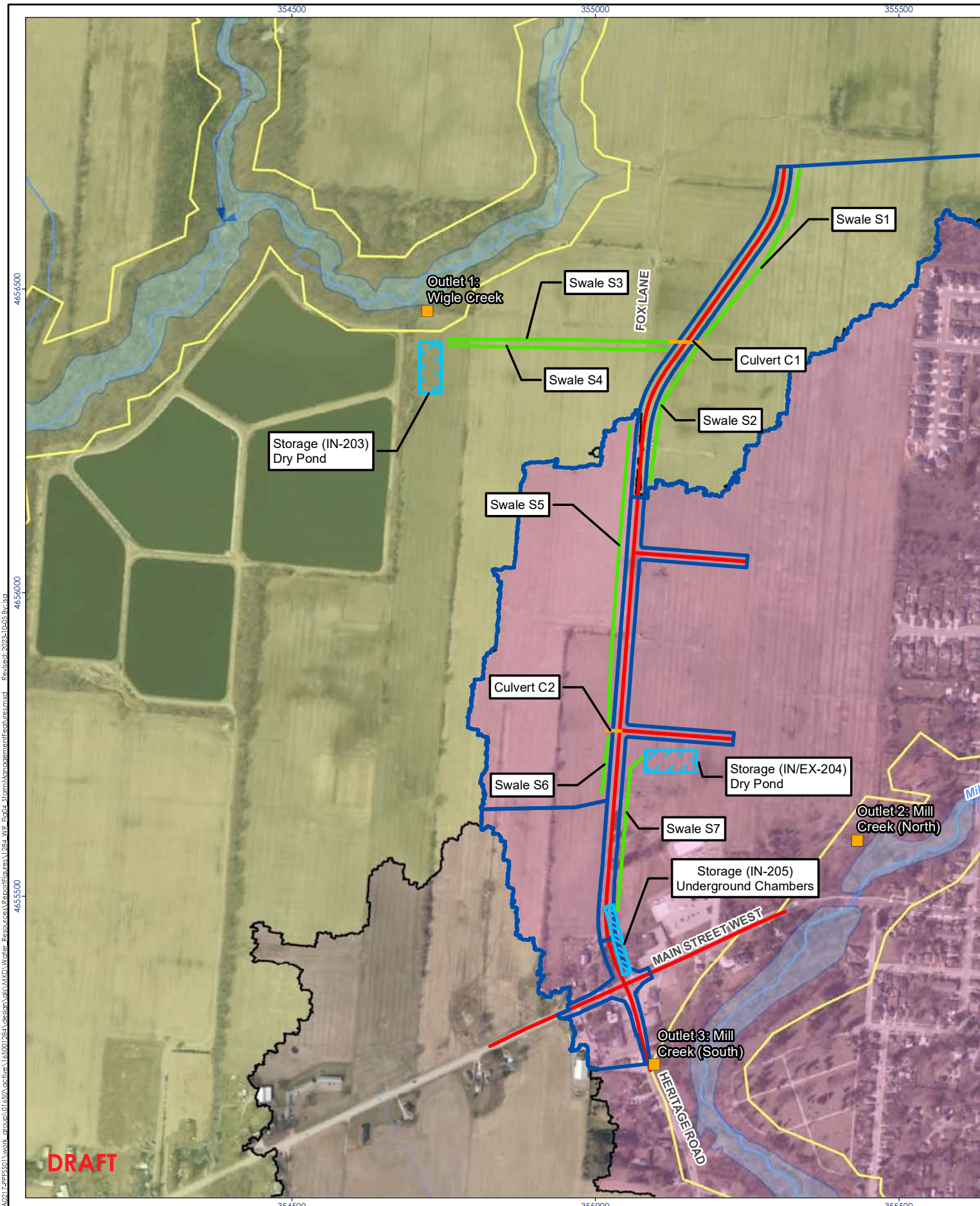


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APPENDIX B:
Stormwater Management Calculations

100-YEAR DESIGN STORM

(Chicago 4-hour, Depth = 81.6 mm)

Time (h:mm)	5 min Rain (mm/hr)
0:00	3.71
0:05	3.94
0:10	4.2
0:15	4.5
0:20	4.85
0:25	5.25
0:30	5.73
0:35	6.31
0:40	7.03
0:45	7.92
0:50	9.07
0:55	10.59
1:00	12.72
1:05	15.84
1:10	20.81
1:15	29.71
1:20	49.12
1:25	108.91
1:30	218.23
1:35	103.42
1:40	60.97
1:45	41.72
1:50	31.11
1:55	24.53
2:00	20.12
2:05	16.98
2:10	14.65
2:15	12.86
2:20	11.44
2:25	10.3
2:30	9.36
2:35	8.58
2:40	7.91
2:45	7.34
2:50	6.85
2:55	6.42
3:00	6.04
3:05	5.7
3:10	5.4
3:15	5.13
3:20	4.88
3:25	4.66
3:30	4.46
3:35	4.27
3:40	4.1
3:45	3.95
3:50	3.8
3:55	3.67
4:00	0.00

URBAN STRESS TEST STORM

(Chicago 100-year 24-hour (108 mm) + Uniform Distribution of additional 42 mm,

Depth = 108 mm + 42 mm = 150 mm)

Time (h:mm)	15 min Rain (mm/hr)	Time (h:mm)	15 min Rain (mm/hr)
0:00	2.41	12:15	4.49
0:15	2.43	12:30	4.29
0:30	2.45	12:45	4.12
0:45	2.46	13:00	3.98
1:00	2.48	13:15	3.85
1:15	2.51	13:30	3.74
1:30	2.53	13:45	3.63
1:45	2.55	14:00	3.54
2:00	2.58	14:15	3.46
2:15	2.61	14:30	3.39
2:30	2.64	14:45	3.32
2:45	2.67	15:00	3.26
3:00	2.71	15:15	3.2
3:15	2.74	15:30	3.15
3:30	2.79	15:45	3.1
3:45	2.83	16:00	3.05
4:00	2.88	16:15	3.01
4:15	2.94	16:30	2.97
4:30	3	16:45	2.93
4:45	3.07	17:00	2.9
5:00	3.15	17:15	2.87
5:15	3.23	17:30	2.84
5:30	3.33	17:45	2.81
5:45	3.45	18:00	2.78
6:00	3.59	18:15	2.76
6:15	3.75	18:30	2.73
6:30	3.94	18:45	2.71
6:45	4.18	19:00	2.69
7:00	4.49	19:15	2.67
7:15	4.89	19:30	2.65
7:30	5.43	19:45	2.63
7:45	6.2	20:00	2.61
8:00	7.41	20:15	2.59
8:15	9.56	20:30	2.57
8:30	14.29	20:45	2.56
8:45	32.01	21:00	2.54
9:00	145.13	21:15	2.53
9:15	48.51	21:30	2.51
9:30	23.13	21:45	2.5
9:45	15.08	22:00	2.49
10:00	11.35	22:15	2.47
10:15	9.23	22:30	2.46
10:30	7.88	22:45	2.45
10:45	6.94	23:00	2.44
11:00	6.25	23:15	2.43
11:15	5.73	23:30	2.42
11:30	5.32	23:45	2.41
11:45	4.99	0:00	0.00
12:00	4.72		

Subject: **Allowable Release Rates Calculation**
Project: **Kingsville Heritage Road**
Project No.: **165001284**
Client: **Kingsville Heritage Road**
Date: **13-Oct-23**

	Fill and Floodline Mapping Technical Report, 1981[1]			Stantec's Stormwater Managemen		
Outlet	Subwatershed No.	Subcatchment Area (Mi^2)	100-year Peak Flow Rate (m^3/s)	Subcatchment ID	Subcatchment Area (ha)	Percentage of S Catch
Wigle Creek	6	1.71	17.70	IN-103 and EX-203	1.37	0.3
Mill Creek (North)	3	1.25	16.70	IN-104 and EX-204	2.34	0.7
Mill Creek (South)	3	1.25	16.70	IN-105	0.74	0.2

Notes:

1. In accordance with the Fill and Floodline Mapping, Cedar, Wigle and Mill Creeks, Technical Report, Essex Region Conservation Authority, Dillon Consulting, February 1981

2.Wigle and Mill Creek 100-year peak flow rate taken from hydrology output as recommended by ERCA

Subject: **TIMP Calculations**
Project: **Kingsville Heritage Road**
Project No.: **165001284**
Client: **Town of Kingsville**
Date: **13-Oct-23**

Catchment ID	Area (ha)	C	TIMP%
EX-203	14.88	0.20	0%
EX-204	11.92	0.20	0%
EX-205	4.46	0.24	5%
EX-206	1.01	0.62	60%
IN-203	1.37	0.83	90%
IN-204	2.34	0.83	90%
IN-205	0.74	0.83	90%
Total	36.71		

Subject: NRCS (SCS) Curve Number Determination
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Town of Kingsville
Date: 13-Oct-23

TABLE OF CURVE NUMBERS (CN's)									
		Hydrologic Soil Type							Manning's
Land Use		A	AB	B	BC	C	CD	D	'n'
Meadow	"Good"	30	44	58	64.5	71	74.5	78	0.40
Woodlot	"Fair"	36	48	60	66.5	73	76	79	0.40
Gravel		76	80.5	85	87	89	90	91	0.30
Lawns	"Good"	39	50	61	67.5	74	77	80	0.25
Pasture/Range		58	61.5	65	70.5	76	78.5	81	0.17
Crop		66	70	74	78	82	84	86	0.13
Fallow (Bare)		77	82	86	89	91	93	94	0.05
Impervious		98	98	98	98	98	98	98	0.01

1. MTO Drainage Manual (1997), Design Chart 1.09-Soil/Land Use Curve Numbers
2. Chin (2000), Water-Resources Engineering, Table 6.13-Curve Numbers for Various Urban Land Uses

HYDROLOGIC SOIL TYPE (%) - Proposed Conditions								
	Hydrologic Soil Type							
Catchment	A	AB	B	BC	C	CD	D	TOTAL
EX-203						100		
EX-204						100		
EX-205						100		
EX-206						100		
IN-203						100		
IN-204						100		
IN-205						100		

LAND USE (%) - Proposed Conditions									
Catchment	Meadow	Woodlot	Gravel	Lawns	Pasture Range	Crop	Fallow (Bare)	Impervious (see note)	Total
EX-203	2.5	2.5				95		0	100
EX-204	2.5	2.5				95		0	100
EX-205				25		70		5	100
EX-206				35		5		60	100
IN-203						10		90	100
IN-204						10		90	100
IN-205						10		90	100

CURVE NUMBER (CN) - Proposed Conditions										
Catchment	Meadow	Woodlot	Gravel	Lawns	Pasture Range	Crop	Fallow (Bare)	Impervious	Weighted CN	Pervious CN
EX-203	1.9	1.9				79.8		0.0	84	84
EX-204	1.9	1.9				79.8		0.0	84	84
EX-205				19.25		58.8		4.9	83	82
EX-206				26.95		4.2		58.8	90	78
IN-203						8.4		88.2	97	84
IN-204						8.4		88.2	97	84
IN-205						8.4		88.2	97	84

** AMC II assumed
** Hydrological Soil Group taken from MTO Drainage Manual for each soil type

Subject: Catchment Parameters
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Town of Kingsville
Date: 13-Oct-23

Catchment ID	Total Area	Imperviousness	Runoff Coefficient	Outlet Description
	(ha)	(%)		
EX-203	14.88	0%	0.20	Wigle Creek
EX-204	11.92	0%	0.20	Mill Creek
EX-205	4.46	5%	0.24	Mill Creek
EX-206	1.01	60%	0.62	Mill Creek
IN-203	1.37	90%	0.83	Wigle Creek
IN-204	2.34	90%	0.83	Mill Creek
IN-205	0.74	90%	0.83	Mill Creek
Total to Wigle	**1.37**			
Total to Mill	**3.08**			

Subject: SWMHYMO Parameters
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Town of Kingsville
Date: 13-Oct-23

Proposed Conditions

Area Description	Catchment ID	SWMHYMO Command	Area (ha)	CN	TIMP	XIMP	Slope (%)	Length (m)	Runoff Coeff.	Tc (hrs)	Tp (hrs)
	EX-203	DESIGN NASHYD	14.88	84	0.00	0.00	0.5%	480	0.20	1.35	0.81
	EX-204	DESIGN NASHYD	11.92	84	0.00	0.00	0.5%	450	0.20	1.30	0.78
	EX-205	DESIGN NASHYD	4.46	83	0.05	0.05	0.5%	300	0.24	1.02	0.61
	EX-206	DESIGN STANDHYD	1.01	90	0.60	0.54	0.5%	150	0.62	0.40	0.24
	IN-203	DESIGN STANDHYD	1.37	97	0.90	0.81	0.7%	45	0.83	0.11	0.07
	IN-204	DESIGN STANDHYD	2.34	97	0.90	0.81	0.9%	45	0.83	0.10	0.06
	IN-205	DESIGN STANDHYD	0.74	97	0.90	0.81	1.8%	45	0.83	0.08	0.05
Total			21.09								

Notes:

CN calculated for pervious areas only for DESIGN STANDHYD. CN is a weighted average for DESIGN NASHYD

TIMP ..... *Total percent impervious*

XIMP ..... *Percent impervious directly connected*

Time of Concentration calculated using the Airport Method ..... $Tc = [\ 3.26\ (1.1-C)\ L^{0.5}\ ] / S^{0.33}$

Where: *C = Runoff Coefficient = 0.4 according to MTO Design chart 1.07 for 'flat pastrure' on clay loam soil*
L = Length of Overland Flow (m)
S = Slope (%)

Time to Peak (hr) ..... $Tp = 0.6Tc$

Subject: **Stage Storage Discharge Curve (IN-203)**
Project: **Kingsville Heritage Road**
Project No.: **165001284**
Client: **Town of Kingsville**
Date: **13-Oct-23**

Bottom of Pond Elevation 187.50 m
Permanent Pool Depth 0 m

			Storage			Discharge			
Elevation (m)	Depth (m)	Footprint Area (m^2)	Total Storage Volume (m^3)	Live Storage (m^3)	Live Storage (ha-m)	Orifice 1 (m^3/s)	Weir 1 (m^3/s)	Total Flow (m^3/s)	Drawdown Time (h)
187.50	0.00	240	0	0	0.0000	0.0000		0.0000	0.0
187.65	0.15	341	44	44	0.0044	0.0128		0.0128	1.9
187.80	0.30	442	102	102	0.0102	0.0220		0.0220	2.8
187.95	0.45	542	176	176	0.0176	0.0283		0.0283	3.6
188.10	0.60	643	265	265	0.0265	0.0335		0.0335	4.4
188.25	0.75	744	369	369	0.0369	0.0379		0.0379	5.2
188.40	0.90	845	488	488	0.0488	0.0419		0.0419	6.1
188.55	1.05	946	622	622	0.0622	0.0456		0.0456	6.9
188.70	1.20	1,046	772	772	0.0772	0.0489	0.000	0.0489	7.8
188.85	1.35	1,147	936	936	0.0936	0.0521	0.249	0.301	8.1
189.00	1.50	1,248	1,116	1,116	0.1116	0.0551	0.861	0.916	8.2

Orifice 1 Flow
Invert elevation
Crown Elevation
Diameter
Area
Cd
Cw

Emergency Spillway
Elevation
Length
Discharge Coeff.
Discharge Coeff.
Height
Side Slopes

Orifice Flow Calculations: $Q_{orif} = C \times A \times (2gH)^{1/2}$
where
C = orifice coefficient
A = area of orifice
g = acceleration due to gravity
H = head above centreline of orifice
Note: used when water elevation is above 3/4 of the orifice diameter

Sharp crested semi-circular weir equation: $Q = C_w x (H/D)^{1.5}$
where
C_w = sharp-crested weir coefficient
D = diameter of orifice
H = head above orifice invert
Note: used when water elevation is below 3/4 of the orifice diameter

Broad Crested Weir Equation: $Q_{weir} = C \times L x H^{3/2} + C_s x S x H^{5/2}$
where
C = rectangular weir coefficient
C_s = triangular weir coefficient
L = bottom width of spillway
H = head above weir invert
S = side slopes (ratio H:W)

Subject: **Stage Storage Discharge Curve (IN-204)**
Project: **Kingsville Heritage Road**
Project No.: **165001284**
Client: **Town of Kingsville**
Date: **13-Oct-23**

Bottom of Pond Elevation 188.20 m
Permanent Pool Depth 0 m

			Storage			Discharge			
Elevation (m)	Depth (m)	Footprint Area (m^2)	Total Storage Volume (m^3)	Live Storage (m^3)	Live Storage (ha-m)	Orifice 1 (m^3/s)	Weir 1 (m^3/s)	Total Flow (m^3/s)	Drawdown Time (h)
188.20	0.00	12	0	0	0.0000	0.0000		0.0000	0.0
188.35	0.15	59	5	5	0.0005	0.0653		0.0653	0.0
188.50	0.30	106	18	18	0.0018	0.1846		0.1846	0.1
188.65	0.45	152	37	37	0.0037	0.3392		0.3392	0.1
188.80	0.60	199	63	63	0.0063	0.5222		0.5222	0.1
188.95	0.75	246	97	97	0.0097	0.7171		0.7171	0.1
189.10	0.90	293	137	137	0.0137	0.8446		0.8446	0.1
189.25	1.05	340	185	185	0.0185	0.9552		0.9552	0.2
189.40	1.20	386	239	239	0.0239	1.0543	0.000	1.0543	0.2
189.55	1.35	433	301	301	0.0301	1.1448	0.249	1.394	0.2
189.70	1.50	480	369	369	0.0369	1.2287	0.861	2.090	0.2

Orifice 1 Flow
Invert elevation
Crown Elevation
Diameter
Area
Cd
Cw

Emergency Spillway
Elevation
Length
Discharge Coeff.
Discharge Coeff.
Height
Side Slopes

Orifice Flow Calculations: $Q_{orif} = C \times A \times (2gH)^{1/2}$
where
C = orifice coefficient
A = area of orifice
g = acceleration due to gravity
H = head above centreline of orifice
Note: used when water elevation is above 3/4 of the orifice diameter

Sharp crested semi-circular weir equation: $Q = C_w x (H/D)^{1.5}$
where
C_w = sharp-crested weir coefficient
D = diameter of orifice
H = head above orifice invert
Note: used when water elevation is below 3/4 of the orifice diameter

Broad Crested Weir Equation: $Q_{weir} = C \times L x H^{3/2} + C_s x S x H^{5/2}$
where
C = rectangular weir coefficient
C_s = triangular weir coefficient
L = bottom width of spillway
H = head above weir invert
S = side slopes (ratio H:W)

Subject: **Stage Storage Discharge Curve (IN-205)**
Project: **Kingsville Heritage Road**
Project No.: **165001284**
Client: **Town of Kingsville**
Date: **13-Oct-23**

Bottom of Pond Elevation 188.50 m
Permanent Pool Depth 0 m

			Storage			Discharge			
Elevation (m)	Depth (m)	Footprint Area (m^2)	Total Storage Volume (m^3)	Live Storage (m^3)	Live Storage (ha-m)	Orifice 1 (m^3/s)	Weir 1 (m^3/s)	Total Flow (m^3/s)	Drawdown Time (h)
188.50	0.00	339	0	0	0.0000	0.0000		0.0000	0.0
188.65	0.15	339	51	51	0.0051	0.0108		0.0108	2.6
188.80	0.30	339	102	102	0.0102	0.0180		0.0180	3.6
188.95	0.45	339	153	153	0.0153	0.0230		0.0230	4.3
189.10	0.60	339	203	203	0.0203	0.0271		0.0271	4.9
189.25	0.75	339	254	254	0.0254	0.0307		0.0307	5.3
189.40	0.90	339	305	305	0.0305	0.0338		0.0338	5.8
189.55	1.05	339	356	356	0.0356	0.0368		0.0368	6.2
189.70	1.20	339	407	407	0.0407	0.0395		0.0395	6.6
189.85	1.35	339	458	458	0.0458	0.0420		0.042	6.9
190.00	1.50	339	509	509	0.0509	0.0444	0.055	0.099	7.1
190.15	1.65	339	559	559	0.0559	0.0466	0.450	0.496	7.1
190.24	1.74	339	590	590	0.0590	0.0479	0.861	0.909	7.2

Orifice 1 Flow
Invert elevation
Crown Elevation
Diameter
Area
Cd
Cw

Emergency Spillway
Elevation
Length
Discharge Coeff.
Discharge Coeff.
Height
Side Slopes

Orifice Flow Calculations: $Q_{orif} = C \times A \times (2gH)^{1/2}$
where
C = orifice coefficient
A = area of orifice
g = acceleration due to gravity
H = head above centreline of orifice
Note: used when water elevation is above 3/4 of the orifice diameter

Sharp crested semi-circular weir equation: $Q = C_w x (H/D)^{1.5}$
where
C_w = sharp-crested weir coefficient
D = diameter of orifice
H = head above orifice invert
Note: used when water elevation is below 3/4 of the orifice diameter

Broad Crested Weir Equation: $Q_{weir} = C \times L x H^{3/2} + C_s x S x H^{5/2}$
where
C = rectangular weir coefficient
C_s = triangular weir coefficient
L = bottom width of spillway
H = head above weir invert
S = side slopes (ratio H:W)

Subject: Summary Table of Storage Perfomance
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Kingsville Heritage Road
Date: 13-Oct-23

	Inflow (m^3/s)	Outflow (m^3/s)	Water Surface Elevation (100 YR) (masl)	Water Surface Elevation (Urban Stress Test) (masl)	Freeboard (100 YR) (m)
IN-203 Dry Pond	0.696	0.049	188.69	188.72	0.310
IN/EX-204 Dry Pond	1.252	0.990	189.30	189.50	0.400
IN-205 Chambers	0.411	0.037	189.64	189.74	0.360

Subject: Allowable Release Rate Comparison
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Kingsville Heritage Road
Date: 13-Oct-23

Outlet	Subcatchment ID	100-year Design Storm			
		Target Flow Rate	Post-Development Uncontrolled	Post-Development Controlled	Percent Change
		(m^3/s)	(m^3/s)	(m^3/s)	
Wigle Creek	IN-203	0.055	0.696	0.049	-12%
Mill Creek (North)	IN/EX-204	1.014	1.252	0.990	-2%
Mill Creek (South)	IN-205	0.038	0.411	0.037	-3%

Subject: Ex-Catchment Culvert Sizing
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Kingsville Heritage Road
Date: 13-Oct-23

Input Parameters

Catchment ID	Outlet	Total Area (ha)	Flow (m^3/s)	Road Surface Elevation (masl)	Tailwater Elevation (masl)	Upstream Obvert (masl)	Downstream Obvert (masl)	Up
EX-203	Wigle Creek	14.88	1.09	189.340	188.511	189.000	188.931	
EX-204	Mill Creek	11.92	0.89	189.47	189.161	189.650	189.581	

Results

Catchment ID	Shape	Material	Size (mm)	Calculated HW Elevation (masl)	Length (m)	Slope
EX-203	Circular	CSP	1050	188.98	23	0.3%
EX-204	Circular	CSP	1050	189.51	23	0.3%

Subject: Swale Sizing
Project: Kingsville Heritage Road
Project No.: 165001284
Client: Kingsville Heritage Road
Date: 13-Oct-23

Swale ID	Contributing Catchment	Location Description	Shape	Contributing Area (m2)	Contributing
S1	EX-203 (East of Road)	North of Centerline	Triangular	99,730	67%
S2		South of Centerline	Triangular	49,033	33%
S3	EX-203 (West of Road)	Towards Wigle	Triangular	148,763	100%
S4	IN-203 (West of Road)	Towards pond	Triangular	13,718	100%
S5	EX-204 (West of Road)	North of Centerline	Triangular	96,420	81%
S6		South of Centerline	Triangular	22,783	19%
S7	IN-204 (East of Road)	Towards pond	Triangular	4385	19%

Swale ID	Roughness Coeff.	Channel Slope (m/m)	Maximum Depth (m)	Minimum Depth (m)	Side Slop (H:V)
S1	0.03	0.00750	1.05	0.5	3:1
S2	0.03	0.00380	1.05	0.5	3:1
S3	0.03	0.00100	1.05	0.9	3:1
S4	0.03	0.00100	0.6	0.6	3:1
S5	0.03	0.00210	1.05	0.7	3:1
S6	0.03	0.01140	1.05	0.3	3:1
S7	0.03	0.00100	0.3	0.4	3:1

Road 2 West to Main Street West Swale Sizing (Kingsville)

Label	Solve For	Friction Method	Roughness Coefficient	Channel Slope (m/m)	Normal Depth (m)
S1	Normal Depth	Manning Formula	0.030	0.008	0.5
S2	Normal Depth	Manning Formula	0.030	0.004	0.5
S4	Normal Depth	Manning Formula	0.030	0.001	0.6
S5	Normal Depth	Manning Formula	0.030	0.002	0.7
S6	Normal Depth	Manning Formula	0.030	0.011	0.3
S7	Normal Depth	Manning Formula	0.030	0.001	0.4
S3	Normal Depth	Manning Formula	0.030	0.001	0.9

Left Side Slope (H:V)	Right Side Slope (H:V)	Discharge (Urban Stress Test) (m^3/s)	Flow Area (m^2)	Wetted Perimeter (m)	Hydraulic Radius (m)
3.000	3.000	0.97	0.8	3.4	0.3
3.000	3.000	0.48	0.6	2.9	0.2
3.000	3.000	0.53	1.1	3.9	0.3
3.000	3.000	0.96	1.3	4.2	0.3
3.000	3.000	0.23	0.2	1.8	0.1
3.000	3.000	0.17	0.5	2.5	0.2
3.000	3.000	1.45	2.4	5.7	0.4

Top Width (m)	Critical Depth (m)	Critical Slope (m/m)	Velocity (m/s)	Velocity Head (m)	Specific Energy (m)
3.18	0.5	0.015	1.15	0.07	0.60
2.77	0.3	0.017	0.75	0.03	0.49
3.69	0.4	0.017	0.46	0.01	0.63
4.02	0.5	0.015	0.71	0.03	0.70
1.70	0.3	0.019	0.93	0.04	0.33
2.40	0.2	0.019	0.35	0.01	0.41
5.40	0.5	0.015	0.60	0.02	0.92

Froude Number	Flow Type	Notes	Messages
0.713	Subcritical		
0.496	Subcritical		
0.267	Subcritical		
0.393	Subcritical		
0.793	Subcritical		
0.249	Subcritical		
0.284	Subcritical		

Culvert Analysis Report
EX-203

Analysis Component			
Storm Event	Design	Discharge	1.0900 m³/s

Peak Discharge Method: User-Specified			
Design Discharge	1.0900 m³/s	Check Discharge	0.0000 m³/s

Tailwater Conditions: Constant Tailwater	
Tailwater Elevation	187.82 m

Name	Description	Discharge	HW Elev.	Velocity
Culvert-2	1-1050 mm Circular	1.0900 m³/s	188.98 m	2.16 m/s
Weir	Not Considered	N/A	N/A	N/A

Culvert Analysis Report
EX-203

Component:Culvert-2

Culvert Summary					
Computed Headwater Elevation	188.98	m	Discharge	1.0900	m³/s
Inlet Control HW Elev.	188.89	m	Tailwater Elevation	187.82	m
Outlet Control HW Elev.	188.98	m	Control Type	Outlet Control	
Headwater Depth/Height	0.97				

Grades					
Upstream Invert	187.95	m	Downstream Invert	187.88	m
Length	23.00	m	Constructed Slope	0.003000	m/m

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.59	m
Slope Type	Mild		Normal Depth	N/A	m
Flow Regime	Subcritical		Critical Depth	0.59	m
Velocity Downstream	2.16	m/s	Critical Slope	0.014474	m/m

Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	1.07	m
Section Size	1050 mm		Rise	1.07	m
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	188.98	m	Upstream Velocity Head	0.11	m
Ke	0.90		Entrance Loss	0.10	m

Inlet Control Properties					
Inlet Control HW Elev.	188.89	m	Flow Control	N/A	
Inlet Type	Projecting		Area Full	0.9	m²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

Culvert Analysis Report
EX-204

Analysis Component				
Storm Event	Design	Discharge	0.8900	m³/s

Peak Discharge Method: User-Specified				
Design Discharge	0.8900	m³/s	Check Discharge	0.0000 m³/s

Tailwater Conditions: Constant Tailwater		
Tailwater Elevation	189.16	m

Name	Description	Discharge	HW Elev.	Velocity
Culvert-2	1-1050 mm Circular	0.8900 m³/s	189.51 m	1.62 m/s
Weir	Not Considered	N/A	N/A	N/A

Culvert Analysis Report
EX-204

Component:Culvert-2

Culvert Summary					
Computed Headwater Elevation	189.51	m	Discharge	0.8900	m³/s
Inlet Control HW Elev.	189.42	m	Tailwater Elevation	189.16	m
Outlet Control HW Elev.	189.51	m	Control Type	Outlet Control	
Headwater Depth/Height	0.86				

Grades					
Upstream Invert	188.60	m	Downstream Invert	188.53	m
Length	23.00	m	Constructed Slope	0.003000	m/m

Hydraulic Profile					
Profile	M2		Depth, Downstream	0.63	m
Slope Type	Mild		Normal Depth	0.94	m
Flow Regime	Subcritical		Critical Depth	0.53	m
Velocity Downstream	1.62	m/s	Critical Slope	0.013731	m/m

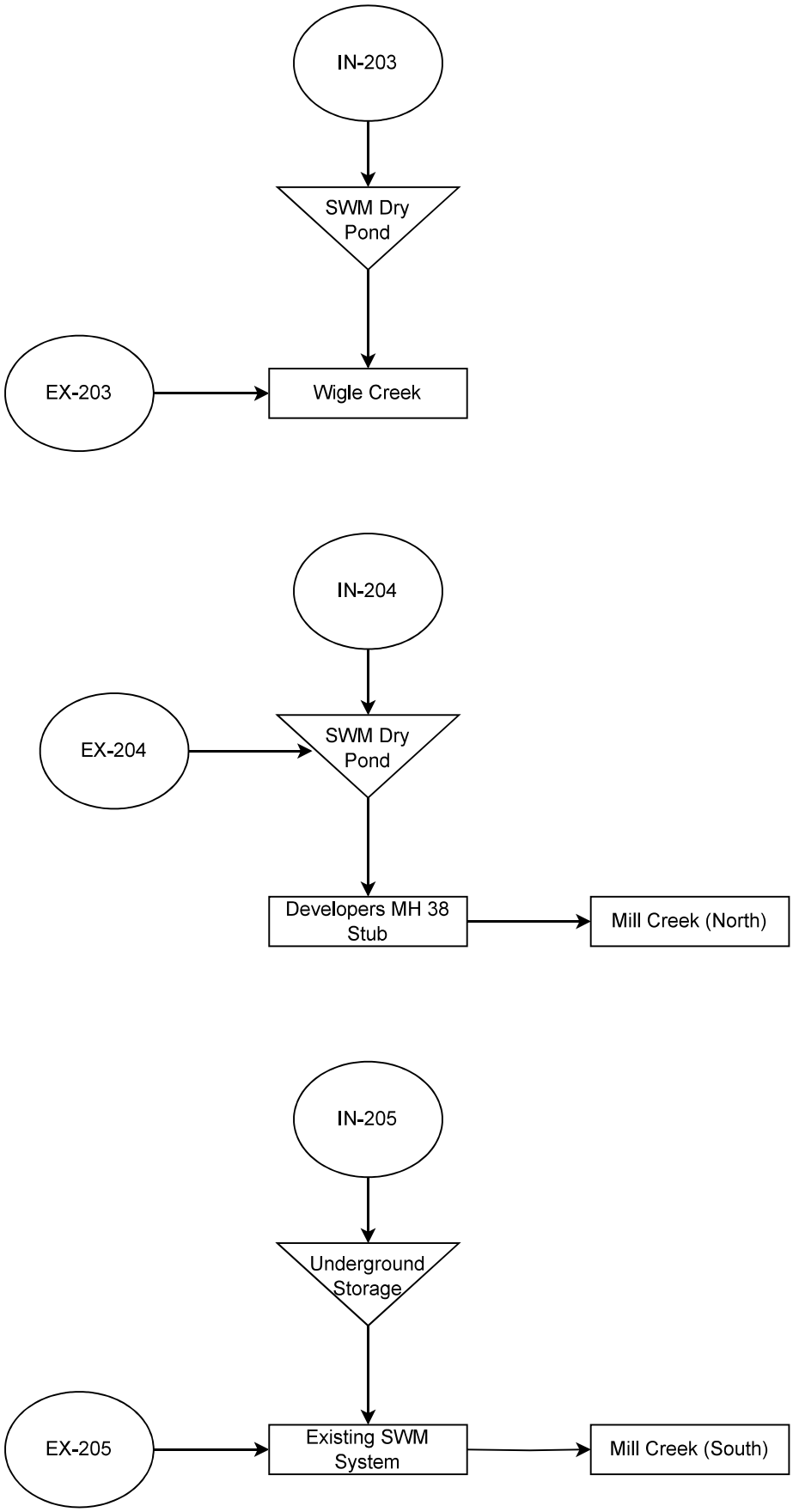
Section					
Section Shape	Circular		Mannings Coefficient	0.024	
Section Material	CMP		Span	1.07	m
Section Size	1050 mm		Rise	1.07	m
Number Sections	1				

Outlet Control Properties					
Outlet Control HW Elev.	189.51	m	Upstream Velocity Head	0.09	m
Ke	0.90		Entrance Loss	0.08	m

Inlet Control Properties					
Inlet Control HW Elev.	189.42	m	Flow Control	N/A	
Inlet Type	Projecting		Area Full	0.9	m²
K	0.03400		HDS 5 Chart	2	
M	1.50000		HDS 5 Scale	3	
C	0.05530		Equation Form	1	
Y	0.54000				

APPENDIX C:
SWMHYMO Output Files

Flow Model Schematic



```
================================================================================

  SSSSS  W   W  M   M  H   H  Y   Y  M   M   OOO        999    999    =========
  S      W W W  MM MM  H   H   Y Y   MM MM  O   O      9   9  9   9
  SSSSS  W W W  M M M  HHHHH    Y    M M M  O   O  ##  9   9  9   9   Ver  4.05
      S   W W   M   M  H   H    Y    M   M  O   O       9999   9999   Sept 2011
  SSSSS   W W   M   M  H   H    Y    M   M   OOO           9      9   =========
                                                       9   9  9   9   # 4730904
       StormWater Management HYdrologic Model           999    999    =========

*******************************************************************************
***************************** SWMHYMO Ver/4.05  *****************************
*********  A single event and continuous hydrologic simulation model  *********
*********     based on the principles of HYMO and its successors      *********
*********                  OTTHYMO-83 and OTTHYMO-89.                 *********
*******************************************************************************
********* Distributed by:  J.F. Sabourin and Associates Inc.          *********
*********                  Ottawa,  Ontario: (613) 836-3884           *********
*********                  Gatineau, Quebec: (819) 243-6858           *********
*********                  E-Mail: swmhymo@jfsa.Com                   *********
*******************************************************************************

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++ Licensed user: Stantec Consulting Ltd. (Kitchener)          +++++++++
+++++++++                Kitchener             SERIAL#:4730904        +++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

*******************************************************************************
*********           ++++++ PROGRAM ARRAY DIMENSIONS ++++++            *********
*********           Maximum value for ID numbers  :     10           *********
*********           Max. number of rainfall points: 105408           *********
*********           Max. number of flow points    : 105408           *********
*******************************************************************************


**********************   D E T A I L E D   O U T P U T   **********************
*******************************************************************************
*         DATE: 2023-10-05     TIME: 10:13:07     RUN COUNTER: 000256         *
*******************************************************************************
* Input   filename: C:\TEMP\KINGSV~1\20231002\KINGPR.dat                       *
* Output  filename: C:\TEMP\KINGSV~1\20231002\KINGPR.out                       *
* Summary filename: C:\TEMP\KINGSV~1\20231002\KINGPR.sum                       *
* User comments:                                                              *
* 1:_____________________________________________________________________     *
* 2:_____________________________________________________________________     *
* 3:_____________________________________________________________________     *
*******************************************************************************

--------------------------------------------------------------------------------
-
```

```
001:0001--------------------------------------------------------------------------------
-
*#*************************************************************************
*#  Project Name: [Kingsville]    Project Number: [165001270]
*#  Date        : 08/03/2023
*#  Modeller    : [Blake Stevenson]
*#  Company     : Stantec Consulting Ltd. (Waterloo)
*#  License #   :
*#*************************************************************************
*#*************************************************************************
--------------------
| START            |  Project  dir.: C:\TEMP\KINGSV~1\20231002\

--------------------  Rainfall dir.: C:\TEMP\KINGSV~1\20231002\

    TZERO =   .00 hrs on        0
    METOUT=   2 (output = METRIC)
    NRUN  = 001
    NSTORM=   1
           #  1=K100y.stm
--------------------------------------------------------------------------------
-
001:0002--------------------------------------------------------------------------------
-
--------------------
| READ STORM       |    Filename: CHICAGO STORM
| Ptotal=  81.59 mm|    Comments: CHICAGO STORM
--------------------
              TIME    RAIN |   TIME    RAIN |   TIME    RAIN |   TIME    RAIN
               hrs   mm/hr |    hrs   mm/hr |    hrs   mm/hr |    hrs   mm/hr
               .08   3.710 |   1.08  12.720 |   2.08  20.120 |   3.08   6.040
               .17   3.940 |   1.17  15.840 |   2.17  16.980 |   3.17   5.700
               .25   4.200 |   1.25  20.810 |   2.25  14.650 |   3.25   5.400
               .33   4.500 |   1.33  29.710 |   2.33  12.860 |   3.33   5.130
               .42   4.850 |   1.42  49.120 |   2.42  11.440 |   3.42   4.880
               .50   5.250 |   1.50 108.910 |   2.50  10.300 |   3.50   4.660
               .58   5.730 |   1.58 218.230 |   2.58   9.360 |   3.58   4.460
               .67   6.310 |   1.67 103.420 |   2.67   8.580 |   3.67   4.270
               .75   7.030 |   1.75  60.970 |   2.75   7.910 |   3.75   4.100
               .83   7.920 |   1.83  41.720 |   2.83   7.340 |   3.83   3.950
               .92   9.070 |   1.92  31.110 |   2.92   6.850 |   3.92   3.800
              1.00  10.590 |   2.00  24.530 |   3.00   6.420 |   4.00   3.670

--------------------------------------------------------------------------------
-
001:0003--------------------------------------------------------------------------------
-
*#*************************************************************************
*#     PROPOSED CONDITIONS
*#*************************************************************************
```

```
----------------------
| DESIGN STANDHYD    |   Area    (ha)=    1.37
| 01:IN-203 DT= 1.00 |   Total Imp(%)=   90.00   Dir. Conn.(%)=   81.00
----------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       1.23          .14
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=        .70          .70
     Length            (m)=      95.64        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     218.23       331.63
               over (min)         2.00         8.00
     Storage Coeff.  (min)=       2.03 (ii)    8.01 (ii)
     Unit Hyd. Tpeak (min)=       2.00         8.00
     Unit Hyd. peak  (cms)=        .55          .14
                                                      *TOTALS*
     PEAK FLOW       (cms)=        .63          .09          .696 (iii)
     TIME TO PEAK    (hrs)=       1.58         1.68         1.583
     RUNOFF VOLUME    (mm)=      80.79        76.86        80.043
     TOTAL RAINFALL   (mm)=      81.59        81.59        81.588
     RUNOFF COEFFICIENT   =        .99          .94          .981

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  97.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-
001:0004--------------------------------------------------------------------------
-
----------------------
| ROUTE RESERVOIR    |    Requested routing time step =  1.0 min.
|  IN>01:(IN-203)    |
| OUT<02:(Wigle )    |    =========  OUTLFOW STORAGE TABLE  =========
----------------------    OUTFLOW    STORAGE    |  OUTFLOW    STORAGE
                            (cms)    (ha.m.)    |    (cms)    (ha.m.)
                             .000  .0000E+00    |     .049  .7720E-01
                             .013  .4400E-02    |     .301  .9360E-01
                             .022  .1020E-01    |     .916  .1116E+00
                             .046  .6220E-01    |     .000  .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     --------------------       (ha)     (cms)     (hrs)       (mm)
     INFLOW >01: (IN-203)       1.37      .696     1.583     80.043
     OUTFLOW<02: (Wigle )       1.37      .049     2.400     80.043
    OVERFLOW<03: (Wovr  )        .00      .000      .000       .000
```

```
                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=    6.990
                    TIME SHIFT OF PEAK FLOW         (min)=    49.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.7599E-01

--------------------------------------------------------------------------------
-
001:0005--------------------------------------------------------------------------
-
----------------------
| DESIGN NASHYD      |   Area    (ha)=   14.88   Curve Number   (CN)=84.00
| 04:EX-203 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .760

     Unit Hyd Qpeak  (cms)=     .748

     PEAK FLOW       (cms)=    1.094 (i)
     TIME TO PEAK    (hrs)=    2.483
     RUNOFF VOLUME    (mm)=   49.927
     TOTAL RAINFALL   (mm)=   81.588
     RUNOFF COEFFICIENT   =     .612

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-
001:0006--------------------------------------------------------------------------
-
----------------------
| DESIGN STANDHYD    |   Area    (ha)=    2.34
| 05:IN-204 DT= 1.00 |   Total Imp(%)=   90.00   Dir. Conn.(%)=   81.00
----------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.11          .23
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=        .90          .90
     Length            (m)=     124.90        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     218.23       331.63
               over (min)        2.00         8.00
     Storage Coeff.  (min)=       2.21 (ii)    7.76 (ii)
     Unit Hyd. Tpeak (min)=       2.00         8.00
     Unit Hyd. peak  (cms)=        .52          .14
                                                      *TOTALS*
     PEAK FLOW       (cms)=       1.06          .16         1.174 (iii)
```

```
     TIME TO PEAK    (hrs)=       1.58         1.68         1.583
     RUNOFF VOLUME    (mm)=      80.79        76.86        80.043
     TOTAL RAINFALL   (mm)=      81.59        81.59        81.588
     RUNOFF COEFFICIENT   =        .99          .94          .981

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  97.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-
001:0007---------------------------------------------------------------------------
-
----------------------
| DESIGN NASHYD      |   Area    (ha)=   11.92   Curve Number   (CN)=84.00
| 06:EX-204 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .740

     Unit Hyd Qpeak  (cms)=     .615

     PEAK FLOW       (cms)=     .894 (i)
     TIME TO PEAK    (hrs)=    2.467
     RUNOFF VOLUME    (mm)=   49.927
     TOTAL RAINFALL   (mm)=   81.588
     RUNOFF COEFFICIENT   =     .612

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-
001:0008---------------------------------------------------------------------------
-
------------------------
| ADD HYD (COMB-204  ) | ID: NHYD         AREA     QPEAK   TPEAK   R.V.    DWF
------------------------                  (ha)     (cms)   (hrs)   (mm)   (cms)
                     ID1 05:IN-204         2.34    1.174    1.58  80.04    .000

                    +ID2 06:EX-204        11.92     .894    2.47  49.93    .000

                     ============================================================
                     SUM 07:COMB-204      14.26    1.252    1.58  54.87    .000


   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-
001:0009---------------------------------------------------------------------------
```

```
-
---------------------
| ROUTE RESERVOIR   |    Requested routing time step =  1.0 min.
|  IN>07:(COMB-2)   |
| OUT<08:(NMill )   |    =========  OUTLFOW STORAGE TABLE  =========
---------------------    OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
                           (cms)    (ha.m.)   |    (cms)    (ha.m.)
                            .000  .0000E+00   |    1.054  .2390E-01
                            .065  .5000E-03   |    1.394  .3010E-01
                            .185  .1800E-02   |    2.090  .3690E-01
                            .955  .1850E-01   |     .000  .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     --------------------       (ha)     (cms)     (hrs)       (mm)
     INFLOW >07: (COMB-2)      14.26     1.252     1.583     54.869
     OUTFLOW<08: (NMill )      14.26      .990     1.633     54.869
    OVERFLOW<09: (MNovr )        .00      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   79.049
                    TIME SHIFT OF PEAK FLOW         (min)=     3.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2039E-01

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001:0010--------------------------------------------------------------------
-
----------------------
| DESIGN STANDHYD    |   Area    (ha)=     .74
| 01:IN-205 DT= 1.00 |   Total Imp(%)=   90.00   Dir. Conn.(%)=   81.00
----------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .67          .07
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=       1.80         1.80
     Length            (m)=      70.24        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     218.23       409.51
               over (min)        1.00         5.00
     Storage Coeff.  (min)=       1.27 (ii)    5.41 (ii)
     Unit Hyd. Tpeak (min)=       1.00         5.00
     Unit Hyd. peak  (cms)=        .93          .21
                                                        *TOTALS*
     PEAK FLOW       (cms)=        .36          .06          .411 (iii)
     TIME TO PEAK    (hrs)=       1.58         1.63         1.583
```

```
     RUNOFF VOLUME    (mm)=      80.79        76.87         80.043
     TOTAL RAINFALL   (mm)=      81.59        81.59         81.588
     RUNOFF COEFFICIENT   =        .99          .94           .981

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  97.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
001:0011--------------------------------------------------------------------------
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---------------------
| ROUTE RESERVOIR   |    Requested routing time step =  1.0 min.
|  IN>01:(IN-205)   |
| OUT<03:(SMill )   |    =========  OUTLFOW STORAGE TABLE  =========
---------------------    OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
                           (cms)    (ha.m.)   |    (cms)    (ha.m.)
                            .000  .0000E+00   |     .099  .5090E-01
                            .011  .5100E-02   |     .496  .5590E-01
                            .018  .1020E-01   |     .909  .5900E-01
                            .042  .4580E-01   |     .000  .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     --------------------       (ha)     (cms)     (hrs)       (mm)
     INFLOW >01: (IN-205)        .74      .411     1.583     80.043
     OUTFLOW<03: (SMill )        .74      .037     2.150     80.043
    OVERFLOW<04: (MSovr )        .00      .000      .000       .000

                   TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                   CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                   PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                   PEAK   FLOW   REDUCTION [Qout/Qin](%)=    9.060
                   TIME SHIFT OF PEAK FLOW         (min)=    34.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=.3869E-01

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001:0012--------------------------------------------------------------------------
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----------------------
| DESIGN NASHYD      |   Area    (ha)=    4.46   Curve Number   (CN)=83.00
| 05:EX-205 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .580

     Unit Hyd Qpeak  (cms)=     .293
```

```
     PEAK FLOW       (cms)=     .388 (i)
     TIME TO PEAK    (hrs)=    2.267
     RUNOFF VOLUME    (mm)=   48.551
     TOTAL RAINFALL   (mm)=   81.588
     RUNOFF COEFFICIENT   =     .595

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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001:0013--------------------------------------------------------------------------
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----------------------
| DESIGN STANDHYD    |   Area    (ha)=    1.00
| 06:EX-206 DT= 1.00 |   Total Imp(%)=   60.00   Dir. Conn.(%)=   54.00
----------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .60          .40
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=        .50          .50
     Length            (m)=      81.85        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     218.23       149.38
               over (min)         2.00        11.00
     Storage Coeff.  (min)=       2.04 (ii)   11.15 (ii)
     Unit Hyd. Tpeak (min)=       2.00        11.00
     Unit Hyd. peak  (cms)=        .55          .10
                                                        *TOTALS*
     PEAK FLOW       (cms)=        .31          .11          .362 (iii)
     TIME TO PEAK    (hrs)=       1.58         1.75         1.583
     RUNOFF VOLUME    (mm)=      80.79        61.49        71.910
     TOTAL RAINFALL   (mm)=      81.59        81.59        81.588
     RUNOFF COEFFICIENT   =        .99          .75          .881

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  90.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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001:0014--------------------------------------------------------------------------
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  ** END OF RUN :   1

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--------------------
| START            |  Project  dir.: C:\TEMP\KINGSV~1\20231002\

--------------------  Rainfall dir.: C:\TEMP\KINGSV~1\20231002\

    TZERO =   .00 hrs on        0
    METOUT=   2 (output = METRIC)
    NRUN  = 002
    NSTORM=   1
           #  1=KST.stm
-------------------------------------------------------------------------------
-
002:0002---------------------------------------------------------------------
-
*#*****************************************************************************
*#  Project Name: [Kingsville]    Project Number: [165001270]
*#  Date        : 08/03/2023
*#  Modeller    : [Blake Stevenson]
*#  Company     : Stantec Consulting Ltd. (Waterloo)
*#  License #   :
*#*****************************************************************************
*#*****************************************************************************
-------------------------------------------------------------------------------
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002:0002---------------------------------------------------------------------
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--------------------
| READ STORM       |    Filename: CHICAGO STORM
| Ptotal= 149.99 mm|    Comments: CHICAGO STORM
--------------------
              TIME    RAIN |   TIME    RAIN |   TIME    RAIN |   TIME    RAIN
               hrs   mm/hr |    hrs   mm/hr |    hrs   mm/hr |    hrs   mm/hr
               .25   2.410 |   6.25   3.590 |  12.25   4.720 |  18.25   2.780
               .50   2.430 |   6.50   3.750 |  12.50   4.490 |  18.50   2.760
               .75   2.450 |   6.75   3.940 |  12.75   4.290 |  18.75   2.730
              1.00   2.460 |   7.00   4.180 |  13.00   4.120 |  19.00   2.710
              1.25   2.480 |   7.25   4.490 |  13.25   3.980 |  19.25   2.690
              1.50   2.510 |   7.50   4.890 |  13.50   3.850 |  19.50   2.670
              1.75   2.530 |   7.75   5.430 |  13.75   3.740 |  19.75   2.650
              2.00   2.550 |   8.00   6.200 |  14.00   3.630 |  20.00   2.630
              2.25   2.580 |   8.25   7.410 |  14.25   3.540 |  20.25   2.610
              2.50   2.610 |   8.50   9.560 |  14.50   3.460 |  20.50   2.590
              2.75   2.640 |   8.75  14.290 |  14.75   3.390 |  20.75   2.570
              3.00   2.670 |   9.00  32.010 |  15.00   3.320 |  21.00   2.560
              3.25   2.710 |   9.25 145.130 |  15.25   3.260 |  21.25   2.540
              3.50   2.740 |   9.50  48.510 |  15.50   3.200 |  21.50   2.530
```

3.75	2.790	9.75	23.130	15.75	3.150	21.75	2.510
4.00	2.830	10.00	15.080	16.00	3.100	22.00	2.500
4.25	2.880	10.25	11.350	16.25	3.050	22.25	2.490
4.50	2.940	10.50	9.230	16.50	3.010	22.50	2.470
4.75	3.000	10.75	7.880	16.75	2.970	22.75	2.460
5.00	3.070	11.00	6.940	17.00	2.930	23.00	2.450
5.25	3.150	11.25	6.250	17.25	2.900	23.25	2.440
5.50	3.230	11.50	5.730	17.50	2.870	23.50	2.430
5.75	3.330	11.75	5.320	17.75	2.840	23.75	2.420
6.00	3.450	12.00	4.990	18.00	2.810	24.00	2.410

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002:0003---
-
*#***
*#   PROPOSED CONDITIONS
*#***

| DESIGN STANDHYD | Area (ha)= 1.37
| 01:IN-203 DT= 1.00 | Total Imp(%)= 90.00 Dir. Conn.(%)= 81.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=		1.23	.14	
Dep. Storage (mm)=		.80	1.50	
Average Slope (%)=		.70	.70	
Length (m)=		95.64	40.00	
Mannings n =		.013	.250	
Max.eff.Inten.(mm/hr)=		145.13	274.77	
over (min)		2.00	9.00	
Storage Coeff. (min)=		2.38 (ii)	8.84 (ii)	
Unit Hyd. Tpeak (min)=		2.00	9.00	
Unit Hyd. peak (cms)=		.50	.13	
				TOTALS
PEAK FLOW (cms)=		.45	.08	.525 (iii)
TIME TO PEAK (hrs)=		9.25	9.30	9.250
RUNOFF VOLUME (mm)=		149.18	145.15	148.423
TOTAL RAINFALL (mm)=		149.99	149.99	149.985
RUNOFF COEFFICIENT =		.99	.97	.990

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 97.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0004---

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---------------------
| ROUTE RESERVOIR   |    Requested routing time step =  1.0 min.
|  IN>01:(IN-203)   |
| OUT<02:(Wigle )   |    =========  OUTLFOW STORAGE TABLE  =========
---------------------    OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
                           (cms)    (ha.m.)   |    (cms)    (ha.m.)
                            .000  .0000E+00   |     .049  .7720E-01
                            .013  .4400E-02   |     .301  .9360E-01
                            .022  .1020E-01   |     .916  .1116E+00
                            .046  .6220E-01   |     .000  .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     --------------------       (ha)     (cms)     (hrs)       (mm)
     INFLOW >01: (IN-203)       1.37      .525     9.250    148.423
     OUTFLOW<02: (Wigle )       1.37      .087     9.783    148.423
    OVERFLOW<03: (Wovr  )        .00      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   16.605
                    TIME SHIFT OF PEAK FLOW         (min)=    32.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.7970E-01

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002:0005----------------------------------------------------------------------
-
----------------------
| DESIGN NASHYD      |   Area    (ha)=   14.88   Curve Number   (CN)=84.00
| 04:EX-203 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .760

     Unit Hyd Qpeak  (cms)=     .748

     PEAK FLOW       (cms)=    1.450 (i)
     TIME TO PEAK    (hrs)=   10.033
     RUNOFF VOLUME    (mm)=  111.994
     TOTAL RAINFALL   (mm)=  149.985
     RUNOFF COEFFICIENT   =     .747

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0006----------------------------------------------------------------------
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----------------------
| DESIGN STANDHYD    |   Area    (ha)=    2.34
| 05:IN-204 DT= 1.00 |   Total Imp(%)=   90.00   Dir. Conn.(%)=   81.00
----------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       2.11          .23
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=        .90          .90
     Length            (m)=     124.90        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     145.13       274.77
               over (min)        3.00         9.00
     Storage Coeff.  (min)=       2.60 (ii)    8.58 (ii)
     Unit Hyd. Tpeak (min)=       3.00         9.00
     Unit Hyd. peak  (cms)=        .41          .13
                                                        *TOTALS*
     PEAK FLOW       (cms)=        .76          .14          .895 (iii)
     TIME TO PEAK    (hrs)=       9.25         9.30         9.250
     RUNOFF VOLUME    (mm)=     149.17       145.14       148.423
     TOTAL RAINFALL   (mm)=     149.99       149.99       149.985
     RUNOFF COEFFICIENT   =        .99          .97          .990

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  97.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
002:0007---------------------------------------------------------------------------
-
----------------------
| DESIGN NASHYD      |   Area    (ha)=   11.92   Curve Number   (CN)=84.00
| 06:EX-204 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .740

     Unit Hyd Qpeak  (cms)=     .615

     PEAK FLOW       (cms)=    1.184 (i)
     TIME TO PEAK    (hrs)=   10.000
     RUNOFF VOLUME    (mm)=  111.994
     TOTAL RAINFALL   (mm)=  149.985
     RUNOFF COEFFICIENT   =     .747

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0008-------------------------------------------------------------------------
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------------------------
| ADD HYD (COMB-204  ) | ID: NHYD         AREA     QPEAK   TPEAK   R.V.    DWF
------------------------                  (ha)     (cms)   (hrs)   (mm)   (cms)
                      ID1 05:IN-204        2.34     .895    9.25 148.42    .000

                     +ID2 06:EX-204       11.92    1.184   10.00 111.99    .000

                      ============================================================
                      SUM 07:COMB-204     14.26    1.288    9.98 117.97    .000


   NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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002:0009-------------------------------------------------------------------------
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---------------------
| ROUTE RESERVOIR   |    Requested routing time step =  1.0 min.
|  IN>07:(COMB-2)   |
| OUT<08:(NMill )   |    =========  OUTLFOW STORAGE TABLE  =========
---------------------    OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
                           (cms)    (ha.m.)   |    (cms)    (ha.m.)
                            .000  .0000E+00   |    1.054  .2390E-01
                            .065  .5000E-03   |    1.394  .3010E-01
                            .185  .1800E-02   |    2.090  .3690E-01
                            .955  .1850E-01   |     .000  .0000E+00

     ROUTING RESULTS            AREA     QPEAK     TPEAK       R.V.
     --------------------       (ha)     (cms)     (hrs)       (mm)
     INFLOW >07: (COMB-2)      14.26     1.288     9.983    117.972
     OUTFLOW<08: (NMill )      14.26     1.285    10.017    117.972
    OVERFLOW<09: (MNovr )        .00      .000      .000       .000

                    TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   99.747
                    TIME SHIFT OF PEAK FLOW         (min)=     2.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.2810E-01

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002:0010-------------------------------------------------------------------------
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| DESIGN STANDHYD    |   Area    (ha)=     .74
| 01:IN-205 DT= 1.00 |   Total Imp(%)=   90.00   Dir. Conn.(%)=   81.00
----------------------
                            IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .67          .07
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=       1.80         1.80
     Length            (m)=      70.24        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     145.13       274.88
               over (min)         1.00         6.00
     Storage Coeff.  (min)=       1.49 (ii)    6.35 (ii)
     Unit Hyd. Tpeak (min)=       1.00         6.00
     Unit Hyd. peak  (cms)=        .83          .18
                                                          *TOTALS*
     PEAK FLOW       (cms)=        .24          .05          .291 (iii)
     TIME TO PEAK    (hrs)=       9.25         9.27         9.250
     RUNOFF VOLUME    (mm)=     149.18       145.16       148.423
     TOTAL RAINFALL   (mm)=     149.99       149.99       149.985
     RUNOFF COEFFICIENT   =        .99          .97          .990

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  97.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0011--------------------------------------------------------------------------
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---------------------
| ROUTE RESERVOIR   |    Requested routing time step =  1.0 min.
|  IN>01:(IN-205)   |
| OUT<03:(SMill )   |    =========  OUTLFOW STORAGE TABLE  =========
---------------------    OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
                           (cms)    (ha.m.)   |    (cms)    (ha.m.)
                            .000  .0000E+00   |     .099  .5090E-01
                            .011  .5100E-02   |     .496  .5590E-01
                            .018  .1020E-01   |     .909  .5900E-01
                            .042  .4580E-01   |     .000  .0000E+00

     ROUTING RESULTS           AREA     QPEAK     TPEAK       R.V.
     --------------------      (ha)     (cms)     (hrs)       (mm)
     INFLOW >01: (IN-205)       .74      .291     9.250    148.423
     OUTFLOW<03: (SMill )       .74      .039     9.783    148.423
    OVERFLOW<04: (MSovr )       .00      .000      .000       .000

                  TOTAL NUMBER OF SIMULATED OVERFLOWS  =        0
```

```
                    CUMULATIVE TIME OF OVERFLOWS  (hours)=      .00
                    PERCENTAGE OF TIME OVERFLOWING    (%)=      .00


                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=   13.556
                    TIME SHIFT OF PEAK FLOW         (min)=    32.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=.4207E-01

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002:0012--------------------------------------------------------------------------
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----------------------
| DESIGN NASHYD      |   Area    (ha)=    4.46   Curve Number   (CN)=83.00
| 05:EX-205 DT= 1.00 |   Ia      (mm)=   1.500   # of Linear Res.(N)= 3.00
----------------------   U.H. Tp(hrs)=    .580

     Unit Hyd Qpeak  (cms)=     .293

     PEAK FLOW       (cms)=     .512 (i)
     TIME TO PEAK    (hrs)=    9.833
     RUNOFF VOLUME    (mm)=  109.959
     TOTAL RAINFALL   (mm)=  149.985
     RUNOFF COEFFICIENT   =     .733

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0013--------------------------------------------------------------------------
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----------------------
| DESIGN STANDHYD    |   Area    (ha)=    1.00
| 06:EX-206 DT= 1.00 |   Total Imp(%)=   60.00   Dir. Conn.(%)=   54.00
----------------------
                             IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=        .60          .40
     Dep. Storage     (mm)=        .80         1.50
     Average Slope     (%)=        .50          .50
     Length            (m)=      81.85        40.00
     Mannings n           =       .013         .250

     Max.eff.Inten.(mm/hr)=     145.13       153.54
               over (min)         2.00        11.00
     Storage Coeff.  (min)=       2.40 (ii)   11.41 (ii)
     Unit Hyd. Tpeak (min)=       2.00        11.00
     Unit Hyd. peak  (cms)=        .49          .10
                                                        *TOTALS*
     PEAK FLOW       (cms)=        .22          .12          .323 (iii)
     TIME TO PEAK    (hrs)=       9.25         9.35         9.250
```

```
     RUNOFF VOLUME    (mm)=     149.18       127.58        139.264
     TOTAL RAINFALL   (mm)=     149.99       149.99        149.985
     RUNOFF COEFFICIENT   =        .99          .85           .929

       (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
           CN* =  90.0    Ia = Dep. Storage  (Above)
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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002:0014---------------------------------------------------------------------------
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002:0002---------------------------------------------------------------------------
-
      FINISH
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-
********************************************************************************
*
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2023-10-05     at 10:13:08
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APPENDIX D:
ADS Storage Sizing

Systems, Inc.

SiteAssist™
FOR STORMTECH
INSTALLATION INSTRUCTIONS
VISIT OUR APP

EK SOUTH
ON, CANADA

MPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.

STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".

CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS.
STORMTECH RECOMMENDS 3 BACKFILL METHODS:
- STONESHOOTER LOCATED OFF THE CHAMBER BED.
- BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
- BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.

THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.

JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.

MAINTAIN MINIMUM - 150 mm (6") SPACING BETWEEN THE CHAMBER ROWS.

INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 300 mm (12") INTO CHAMBER END CAPS.

EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE WELL GRADED BETWEEN ¾" AND 2" (20-50 mm)..

STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.

. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.

. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

OTES FOR CONSTRUCTION EQUIPMENT

STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".

THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
- NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".

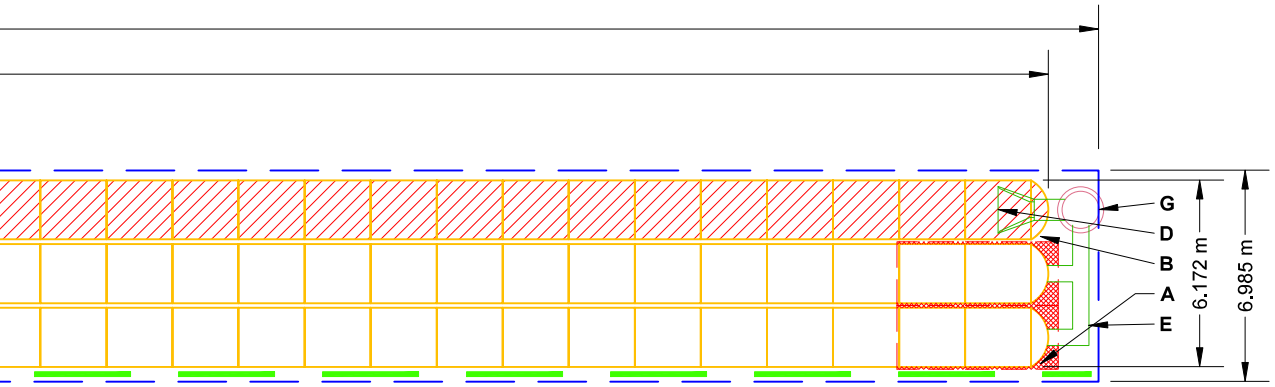
FULL 900 mm (36") OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

SE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE ACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD ARRANTY.

ONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

*INVERT ABOVE BASE OF CHAMBER

	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
	A	450 mm TOP CORED END CAP, PART#: MC3500IEPP18TC / TYP OF ALL 450 mm TOP CONNECTIONS	509 mm	
	B	600 mm BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	52 mm	
	C	450 mm BOTTOM CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 450 mm BOTTOM CONNECTIONS	45 mm	
	D	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: MCFLAMP		
	E	450 mm x 450 mm TOP MANIFOLD, ADS N-12	509 mm	
	F	450 mm x 450 mm BOTTOM MANIFOLD, ADS N-12	45 mm	
	G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)		311 L/s IN
	H	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		227 L/s OUT
	I	150 mm ADS N-12 DUAL WALL PERFORATED HDPE UNDERDRAIN		



INEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD

AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
PECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR

APACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS

DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

MILL CREEK SOUTH
KITCHENER, ON, CANADA
DATE:
DRAWN: CN
PROJECT #:
CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

StormTech®
Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SCALE = 1 : 250

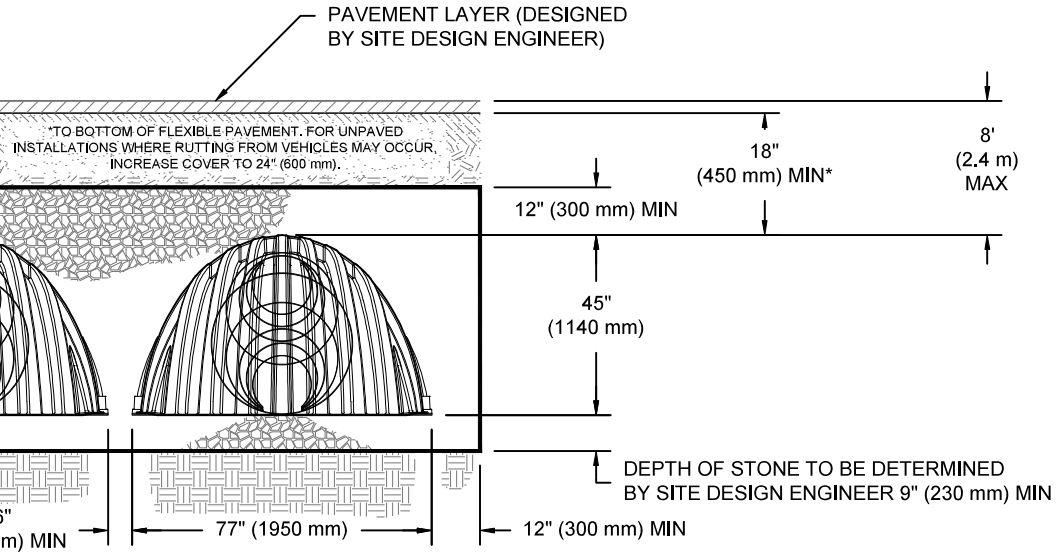
THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

H MC-3500 CHAMBER SYSTEMS

	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
PLANS. .	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
NES OR F THIS	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

CATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
G TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
HIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR

USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



ATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76

CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
S AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION

.

UAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF
S SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW

MILL CREEK SOUTH
KITCHENER, ON, CANADA
DATE: DRAWN: CN
PROJECT #: CHECKED: N/A

DESCRIPTION	CHK	DRW	DATE

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

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W PLUS DETAIL

MILL CREEK SOUTH
KITCHENER, ON, CANADA

DATE:
PROJECT #:
DRAWN: CN
CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

StormTech®
Chamber System

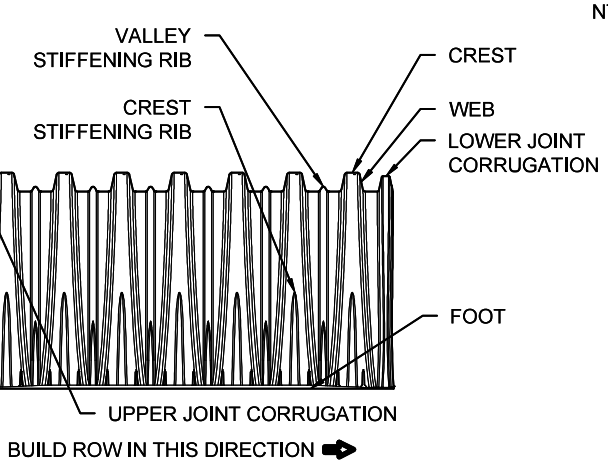
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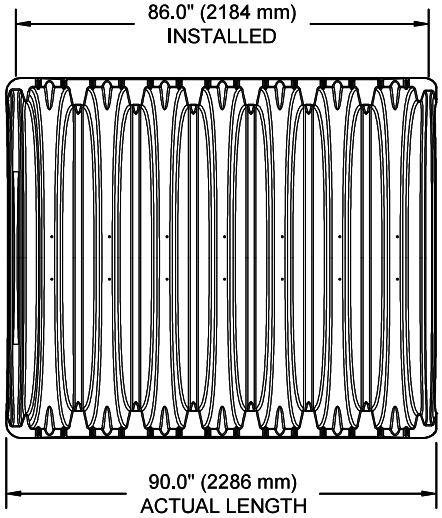
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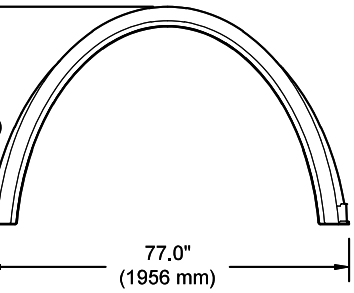
MC-3500 TECHNICAL SPECIFICATION

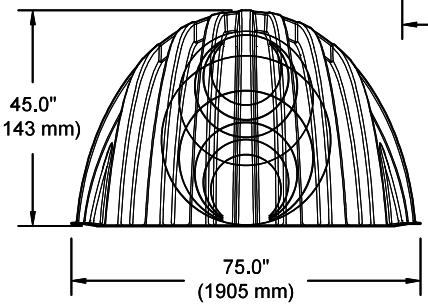
NTS

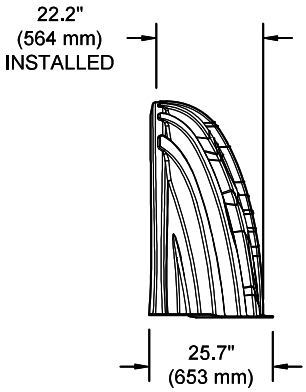


BUILD ROW IN THIS DIRECTION









IAL CHAMBER SPECIFICATIONS

W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
BER STORAGE	109.9 CUBIC FEET	(3.11 m³)
UM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
HT	134 lbs.	(60.8 kg)

IAL END CAP SPECIFICATIONS

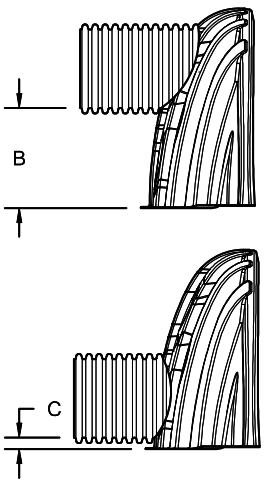
W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
AP STORAGE	14.9 CUBIC FEET	(0.42 m³)
UM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
HT	49 lbs.	(22.2 kg)

MES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN
BERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PS WITH A WELDED CROWN PLATE END WITH "C"
PS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
3500IEPP06B		---	0.66" (17 mm)
3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
3500IEPP08B		---	0.81" (21 mm)
3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
3500IEPP10B		---	0.93" (24 mm)
3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
3500IEPP12B		---	1.35" (34 mm)
3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
3500IEPP15B		---	1.50" (38 mm)
3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
500IEPP18TW			
3500IEPP18BC		---	1.77" (45 mm)
500IEPP18BW			
3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
500IEPP24TW			
3500IEPP24BC		---	2.06" (52 mm)
500IEPP24BW			
3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

LL DIMENSIONS ARE NOMINAL



CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

MILL CREEK SOUTH
KITCHENER, ON, CANADA
DATE:
DRAWN: CN
PROJECT #:
CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

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Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
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APPENDIX E:
OGS Sizing

ADS OGS Sizing Summary

Project Name: Heritage Road (165001284) IN-203

Consulting Engineer: Stantec

Location: Kingsville, ON

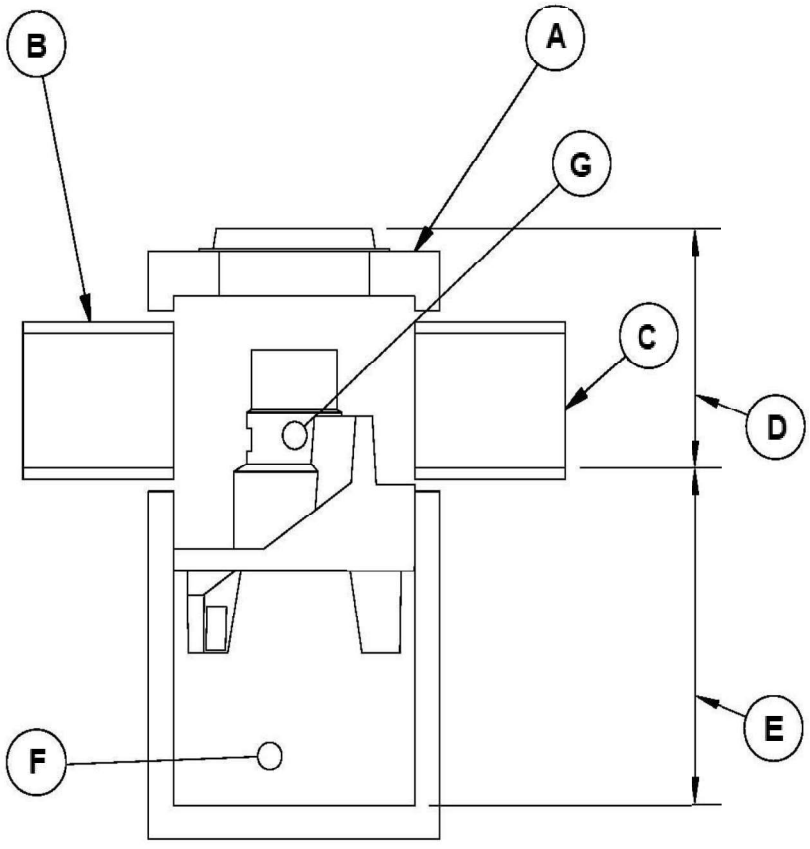
Sizing Completed By: C. Neath **Email:** cody.neath@adspipe.com

Treatment Requirements		
Treatment Goal:	Normal (MOE)	
Selected Parameters:	70% TSS	90% Volume
Selected Unit:	**FD-4HC**	

Site Details	
Site Area:	1.37 ha
% Impervious:	90%
Rational C:	0.84
Rainfall Station:	Windsor, ONT
Particle Size Distribution:	Fine
Peak Flowrate:	---

Summary of Results		
Model	**TSS Removal**	**Volume Treated**
FD-4HC	75.0%	>90%
FD-5HC	78.0%	>90%
FD-6HC	81.0%	>90%
FD-8HC	85.0%	>90%
FD-10HC	89.0%	>90%

FD-4HC Specification	
Unit Diameter (A):	1,200 mm
Inlet Pipe Diameter (B):	300 mm
Outlet Pipe Diameter (C):	300 mm
Height, T/G to Outlet Invert (D):	2000 mm
Height, Outlet Invert to Sump (E):	1515 mm
Sediment Storage Capacity (F):	0.78 m³
Oil Storage Capacity (G):	723 L
Recommended Sediment Depth for Maintenance:	440 mm
Max. Pipe Diameter:	600 mm
Peak Flow Capacity:	510 L/s



Site Elevations:	
Rim Elevation:	100.00
Inlet Pipe Elevation:	98.00
Outlet Pipe Elevation:	98.00

Notes:

Removal efficiencies are based on NJDEP Test Protocols and independently verified.

All units supplied by ADS have numerous local, provincial, and international certifications (copies of which can be provided upon request). The design engineer is responsible for ensuring compliance with applicable regulations.

Project Name:	Heritage Road (165001284) IN-203
Consulting Engineer:	Stantec
Location:	Kingsville, ON

Net Annual Removal Efficiency Summary: FD-4HC

Rainfall Intensity[1]	Rational Equation Flowrate	Surface Loading Rate	Fraction of Rainfall[1]	FD-4HC Removal Efficiency	Weighted Net-Annual Removal Efficiency
mm/hr	L/s	L/min/m^2	%	%	%
3.00	9.6	509	13.2%	84%	11.1%
4.00	12.8	678	9.6%	82%	7.9%
5.00	16.0	848	7.5%	80%	6.0%
6.00	19.2	1018	6.0%	79%	4.7%
7.00	22.4	1187	4.8%	78%	3.7%
8.00	25.6	1357	4.1%	77%	3.2%
9.00	28.8	1526	3.6%	76%	2.7%
10.00	32.0	1696	3.2%	75%	2.4%
11.00	35.2	1865	2.8%	75%	2.1%
12.00	38.4	2035	2.5%	74%	1.9%
15.00	48.0	2544	6.6%	73%	4.8%
20.00	63.9	3392	8.3%	71%	5.9%
25.00	79.9	4240	5.8%	69%	4.0%
30.00	95.9	5088	4.6%	68%	3.1%
35.00	111.9	5936	3.8%	67%	2.5%
40.00	127.9	6784	2.9%	66%	1.9%
45.00	143.9	7631	2.4%	66%	1.6%
50.00	159.8	8479	1.8%	65%	1.2%
65.00	207.8	11023	6.6%	63%	4.2%
Total Net Annual Removal Efficiency:					74.9%
Total Runoff Volume Treated:					>90%

Notes:

(1) Based on Windsor/Essex Region Stormwater Manual 2018, Table 3.4.1.5

(2) Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution

ADS OGS Sizing Summary

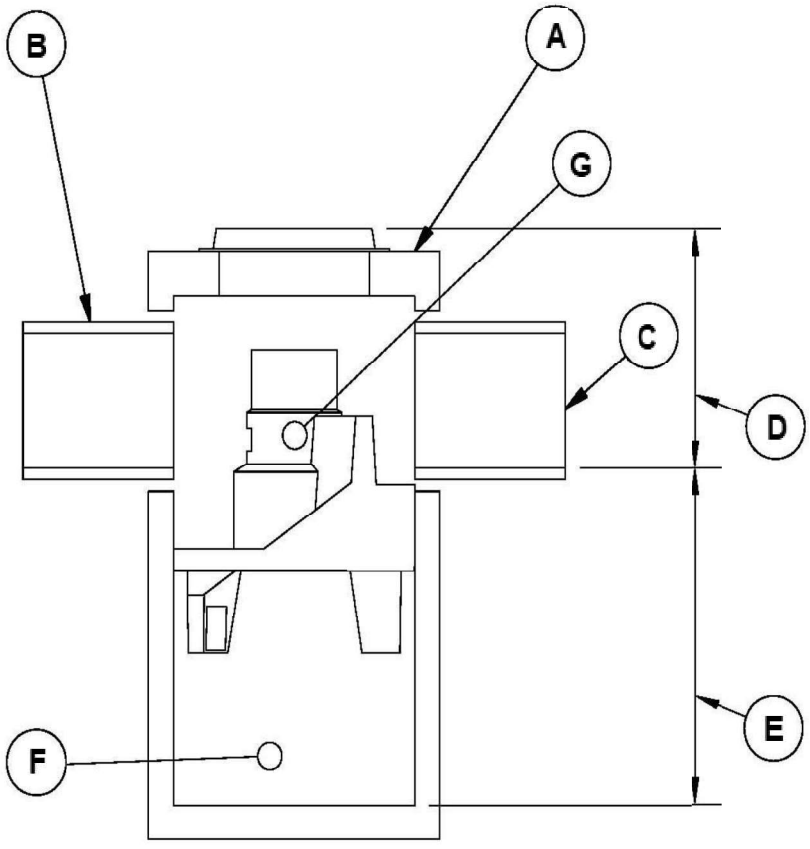
Project Name:	Heritage Road (165001284) IN-204
Consulting Engineer:	Stantec
Location:	Kingsville, ON
Sizing Completed By:	C. Neath
Email:	cody.neath@adspipe.com

Treatment Requirements		
Treatment Goal:	Normal (MOE)	
Selected Parameters:	70% TSS	90% Volume
Selected Unit:	**FD-5HC**	

Site Details	
Site Area:	2.34 ha
% Impervious:	90%
Rational C:	0.84
Rainfall Station:	Windsor, ONT
Particle Size Distribution:	Fine
Peak Flowrate:	---

Summary of Results		
Model	**TSS Removal**	**Volume Treated**
FD-4HC	71.0%	85.4%
FD-5HC	75.0%	>90%
FD-6HC	77.0%	>90%
FD-8HC	81.0%	>90%
FD-10HC	85.0%	>90%

FD-5HC Specification	
Unit Diameter (A):	1,500 mm
Inlet Pipe Diameter (B):	300 mm
Outlet Pipe Diameter (C):	300 mm
Height, T/G to Outlet Invert (D):	2000 mm
Height, Outlet Invert to Sump (E):	1780 mm
Sediment Storage Capacity (F):	1.29 m³
Oil Storage Capacity (G):	1,135 L
Recommended Sediment Depth for Maintenance:	475 mm
Max. Pipe Diameter:	600 mm
Peak Flow Capacity:	566 L/s



Site Elevations:	
Rim Elevation:	100.00
Inlet Pipe Elevation:	98.00
Outlet Pipe Elevation:	98.00

Notes:

Removal efficiencies are based on NJDEP Test Protocols and independently verified.

All units supplied by ADS have numerous local, provincial, and international certifications (copies of which can be provided upon request). The design engineer is responsible for ensuring compliance with applicable regulations.

Project Name:	Heritage Road (165001284) IN-204
Consulting Engineer:	Stantec
Location:	Kingsville, ON

Net Annual Removal Efficiency Summary: FD-5HC

Rainfall Intensity[1]	Rational Equation Flowrate	Surface Loading Rate	Fraction of Rainfall[1]	FD-5HC Removal Efficiency	Weighted Net-Annual Removal Efficiency
mm/hr	L/s	L/min/m^2	%	%	%
3.00	16.4	556	13.2%	84%	11.1%
4.00	21.8	742	9.6%	82%	7.8%
5.00	27.3	927	7.5%	80%	6.0%
6.00	32.8	1112	6.0%	79%	4.7%
7.00	38.2	1298	4.8%	78%	3.7%
8.00	43.7	1483	4.1%	77%	3.1%
9.00	49.1	1668	3.6%	76%	2.7%
10.00	54.6	1854	3.2%	75%	2.4%
11.00	60.1	2039	2.8%	74%	2.1%
12.00	65.5	2225	2.5%	74%	1.8%
15.00	81.9	2781	6.6%	72%	4.8%
20.00	109.2	3708	8.3%	70%	5.8%
25.00	136.5	4635	5.8%	69%	4.0%
30.00	163.8	5562	4.6%	68%	3.1%
35.00	191.1	6488	3.8%	67%	2.5%
40.00	218.4	7415	2.9%	66%	1.9%
45.00	245.7	8342	2.4%	65%	1.6%
50.00	273.0	9269	1.8%	65%	1.2%
65.00	354.9	12050	6.6%	63%	4.2%
				Total Net Annual Removal Efficiency:	74.7%
				Total Runoff Volume Treated:	>90%

Notes:

(1) Based on Windsor/Essex Region Stormwater Manual 2018, Table 3.4.1.5

(2) Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution

ADS OGS Sizing Summary

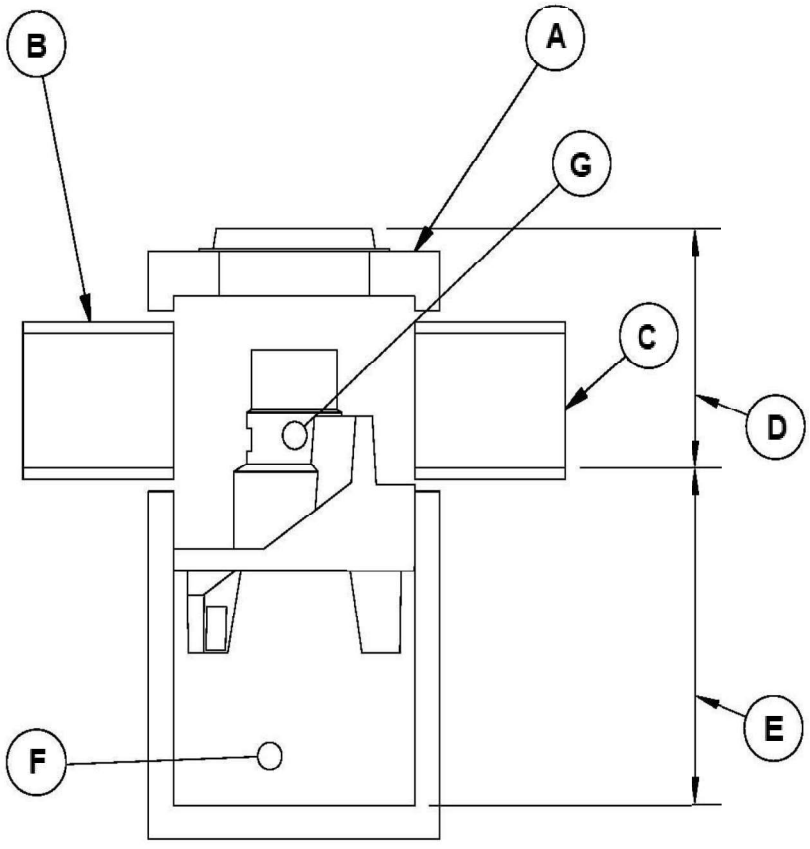
Project Name:	Heritage Road (165001284) IN-205
Consulting Engineer:	Stantec
Location:	Kingsville, ON
Sizing Completed By:	C. Neath
Email:	cody.neath@adspipe.com

Treatment Requirements		
Treatment Goal:	Normal (MOE)	
Selected Parameters:	70% TSS	90% Volume
Selected Unit:	**FD-4HC**	

Site Details	
Site Area:	0.74 ha
% Impervious:	90%
Rational C:	0.84
Rainfall Station:	Windsor, ONT
Particle Size Distribution:	Fine
Peak Flowrate:	---

Summary of Results		
Model	**TSS Removal**	**Volume Treated**
FD-4HC	79.0%	>90%
FD-5HC	83.0%	>90%
FD-6HC	86.0%	>90%
FD-8HC	90.0%	>90%
FD-10HC	93.0%	>90%

FD-4HC Specification	
Unit Diameter (A):	1,200 mm
Inlet Pipe Diameter (B):	300 mm
Outlet Pipe Diameter (C):	300 mm
Height, T/G to Outlet Invert (D):	2000 mm
Height, Outlet Invert to Sump (E):	1515 mm
Sediment Storage Capacity (F):	0.78 m³
Oil Storage Capacity (G):	723 L
Recommended Sediment Depth for Maintenance:	440 mm
Max. Pipe Diameter:	600 mm
Peak Flow Capacity:	510 L/s



Site Elevations:	
Rim Elevation:	100.00
Inlet Pipe Elevation:	98.00
Outlet Pipe Elevation:	98.00

Notes:

Removal efficiencies are based on NJDEP Test Protocols and independently verified.

All units supplied by ADS have numerous local, provincial, and international certifications (copies of which can be provided upon request). The design engineer is responsible for ensuring compliance with applicable regulations.

Project Name: Heritage Road (165001284) IN-205
Consulting Engineer: Stantec
Location: Kingsville, ON

Net Annual Removal Efficiency Summary: FD-4HC

Rainfall Intensity[(1)]	Rational Equation Flowrate	Surface Loading Rate	Fraction of Rainfall[(1)]	FD-4HC Removal Efficiency	Weighted Net-Annual Removal Efficiency
mm/hr	L/s	L/min/m^2	%	%	%
3.00	5.2	275	13.2%	89%	11.8%
4.00	6.9	366	9.6%	87%	8.3%
5.00	8.6	458	7.5%	85%	6.4%
6.00	10.4	550	6.0%	84%	5.0%
7.00	12.1	641	4.8%	82%	4.0%
8.00	13.8	733	4.1%	81%	3.3%
9.00	15.5	824	3.6%	81%	2.9%
10.00	17.3	916	3.2%	80%	2.6%
11.00	19.0	1008	2.8%	79%	2.2%
12.00	20.7	1099	2.5%	78%	2.0%
15.00	25.9	1374	6.6%	77%	5.1%
20.00	34.5	1832	8.3%	75%	6.2%
25.00	43.2	2290	5.8%	73%	4.2%
30.00	51.8	2748	4.6%	72%	3.3%
35.00	60.4	3206	3.8%	71%	2.7%
40.00	69.1	3664	2.9%	70%	2.0%
45.00	77.7	4122	2.4%	69%	1.7%
50.00	86.3	4580	1.8%	69%	1.2%
65.00	112.2	5954	6.6%	67%	4.4%
Total Net Annual Removal Efficiency:					79.4%
Total Runoff Volume Treated:					>90%

Notes:

(1) Based on Windsor/Essex Region Stormwater Manual 2018, Table 3.4.1.5

(2) Based on third party verified data and appoximating the removal of a PSD similar to the STC Fine distribution

Appendix G - Traffic Study

Municipal Class Environmental Assessment - Construction of West Side Collector Road

Traffic Study

March 30, 2023

Prepared for:

Town of Kingsville

Prepared by:

Stantec Consulting Ltd.

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT - CONSTRUCTION OF WEST SIDE COLLECTOR ROAD

Revision	Description	Author		Quality Check		Independent Review	
01	Draft	A. Bagheri		A. Mirhoseini		K. Erickson	

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT - CONSTRUCTION OF WEST SIDE COLLECTOR ROAD

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1.0 INTRODUCTION

Stantec Consulting Ltd. (“Stantec”) was retained by the Town of Kingsville to complete a Traffic Study for Heritage Road Extension from Main Street W to Road 2 West to analyze existing and future traffic operations at one existing intersection and two future intersections along the segment.

1.1 STUDY GOAL AND SCOPE

The objectives of this traffic study are to review the existing and future traffic operation conditions and to identify the problems, needs and requirements for the existing and future intersections along the corridor.

The scope of work for this traffic study includes:

- Reviewed background documents,
- Carried out intersection capacity analysis to identify any existing traffic issues,
- Forecasted traffic volumes in the selected future horizon year using an annual growth rate and adding expected rerouted traffic and trips generated by future developments through future local roads,
- Reviewed signal warrant and auxiliary left-turn lane warrant at the study intersections,
- Carried out intersection capacity analysis to identify any potential future traffic issues, and
- Proposed mitigation measures.

1.2 STUDY AREA

The study area and the selected study intersections are presented in **Figure 1.1**.

The study intersections include:

- Country Road 20/Main Street West and Heritage Road (Unsignalized)
- Heritage Road Extension and Street L (Future intersection), and
- Heritage Road Extension and Street O (Future intersection).

Two horizon years were analyzed as follows:

- Existing Traffic Conditions (2022)
- Future Horizon Year (2042)

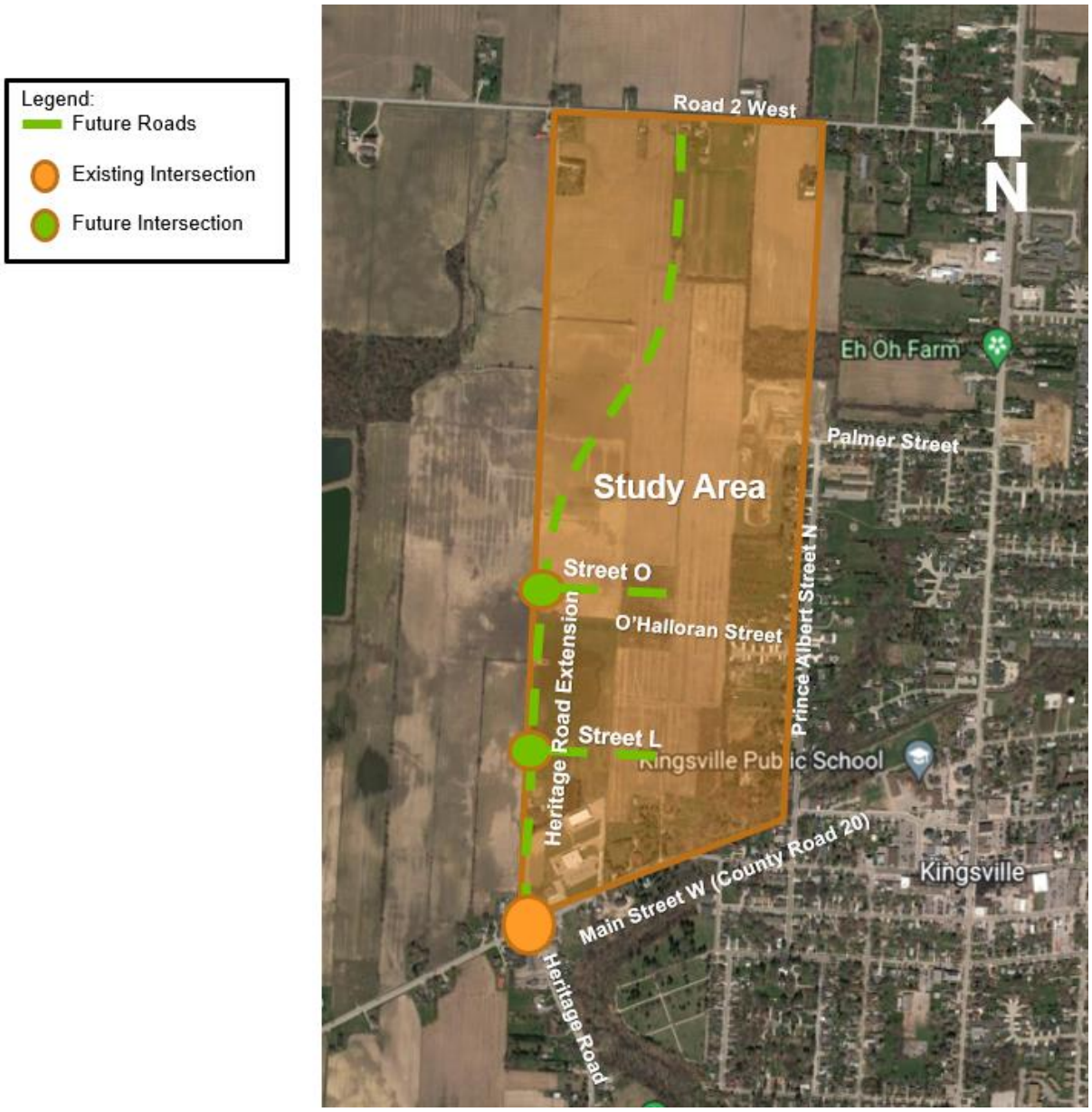


Figure 1.1- Study Area and Study Intersections

2.0 BACKGROUND DOCUMENTS REVIEW

➢ **Town of Kingsville Comprehensive Transportation Master Plan (CTMP), 2022**

This study reviewed future active transportation network and roadway network for the Town of Kingsville. A summary is provided as follows:

Future Developments of Active Transportation Network

The proposed active transportation network is illustrated in **Figure 2.1**. As shown in this figure, the following has been proposed in the study area:

- Signed route along Heritage Road, south of Main Street intersection,
- Paved shoulder along Main Street, west of Heritage intersection,
- Multi-use path (MUP) along Main Street, east of Heritage intersection, and
- Cycle track along Street A (Heritage Road extension).

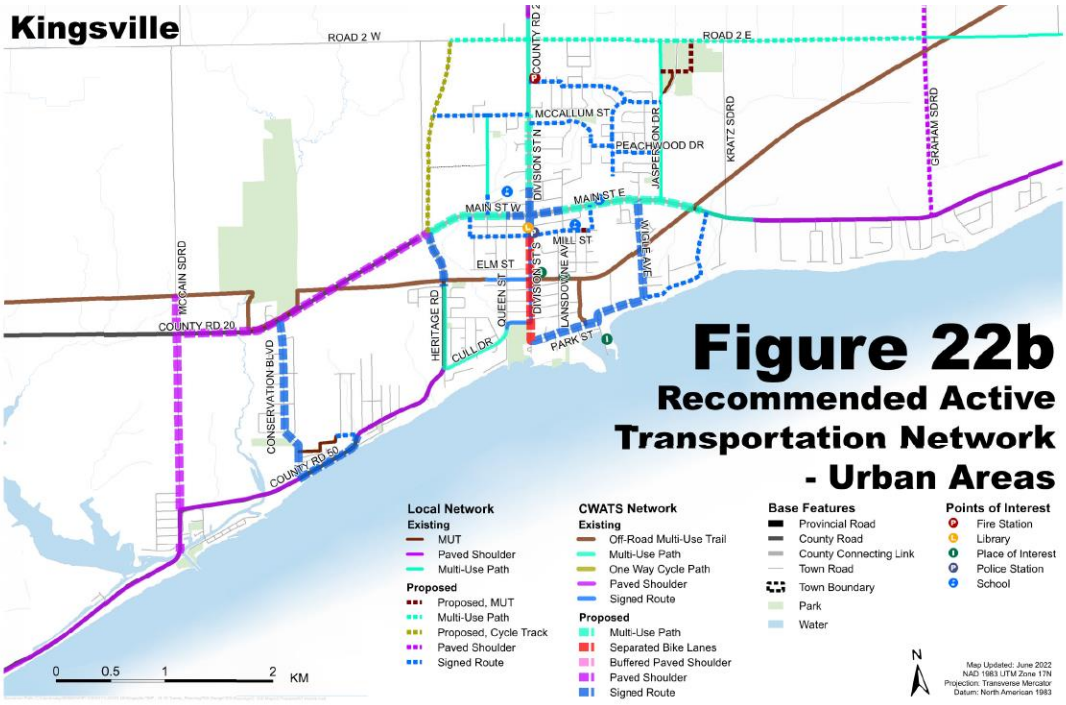


Figure 2.1- Proposed Active Transportation Network[1]

[1] Town of Kingsville Comprehensive Transportation Master Plan (CTMP), 2022

Proposed Roadway Network

Recommended road network improvements are illustrated in

Figure 2.2. As shown in this figure, following improvements have been recommended:

- New roadway link (Heritage Road extension) connecting Main Street W and Road 2 W which runs parallel to Division Road and provides alternative to the northbound and eastbound from Main Street W and Heritage Road intersection traffic and Main Street E and Kratz Road intersection traffic to bypass Mains Street and Division Road downtown traffic,
- Signalization of Main Street W and Heritage Road intersection, and
- Extending Palmer Drive and O' Halloran Street to the proposed extension of Heritage Road.

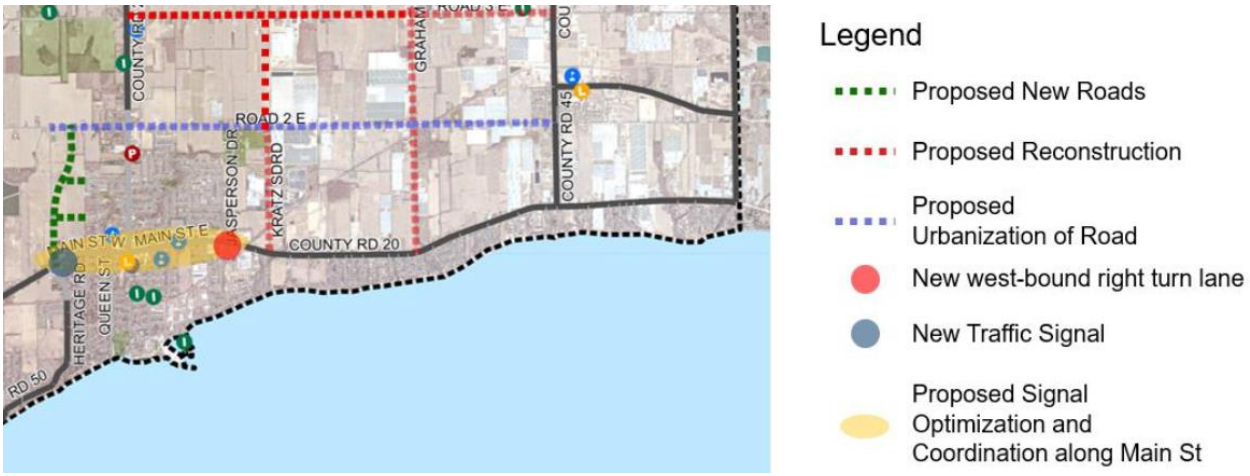


Figure 2.2- Preferred Alternative Recommended Road Network Improvements

3.0 EXISTING CONDITION

3.1 EXISTING ROAD NETWORK

The existing roadway network in the study area includes:[1]

Main Street West is an east-west two-lane cross-section arterial road (County Road 20) with a posted speed limit of 50 km/h within the study area. Although Main Street is signed as County Road 20, the section within the study area (starting 120 meters west of Heritage Road and extending easterly through the urban section of Kingsville) is designated as a connecting link and is under the jurisdiction of the Town of Kingsville.

Heritage Road (County Road 50) is a north-south minor collector that extends southerly from Main Street toward Lake Erie, where it turns to the west and extends along the Lake Erie shoreline. Although Heritage Road is signed as County Road 50, the section within the study area (the first 500 meters south of Main Street) is designated as a connecting link and is under the jurisdiction of the Town of Kingsville. Within the study area, the road has a posted speed limit of 50 km/h and a two-lane cross-section, 1-metre paved shoulders and concrete curbs.

Road 2 is the first east-west concession road north of Main Street. It is classified as a secondary road west of Division Street and as a minor arterial road east of Division Street. It traverses a predominantly rural area, other than a small residential cluster near Division Street. Within the study area, the road has a posted speed limit of 60 km/h and a two-lane cross-section.

O'Halloran Street is an east-west local road that is currently a residential cul-de-sac extending westerly 125 meters from Prince Albert Street; under the proposed plan of subdivision for the Conklin site, this road will be extended farther west and will serve as an easterly access to the Conklin site. It has an unmarked two-lane cross-section and a statutory speed limit of 50 km/h. There are residential driveways on both sides of the road.

Palmer Drive is an east-west local road that extends westerly from Division Street to 150 meters west of Prince Albert Street; under the proposed plan of subdivision for the Conklin site, this road will extend farther west and will serve as an easterly access to the subject site. It has an unmarked two-lane cross-section and a statutory speed limit of 50 km/h.

[1] Conklin Subdivision TIS, Town of Kingsville, 2020

existing Condition

Figure 3.1 illustrates the existing traffic control and lane configuration at Heritage Road and Main Street West intersection.

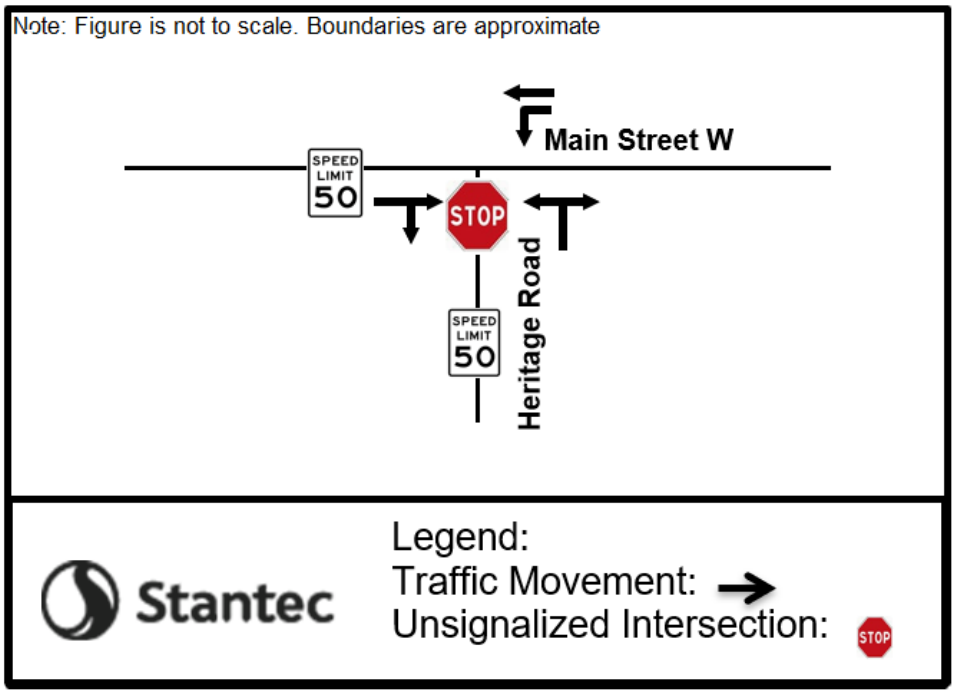


Figure 3.1- Existing Traffic Control and Lane Configuration

3.2 DATA COLLECTION

Stantec collected Turning Movement Counts ("TMCs") data at Heritage Road and Main Street W intersection in August 25, 2022 (See **Appendix A**).

3.3 EXISTING TRAFFIC VOLUME

The existing 2022 traffic volumes for the AM and PM peak hours are illustrated in **Figure 3.2.**

existing Condition

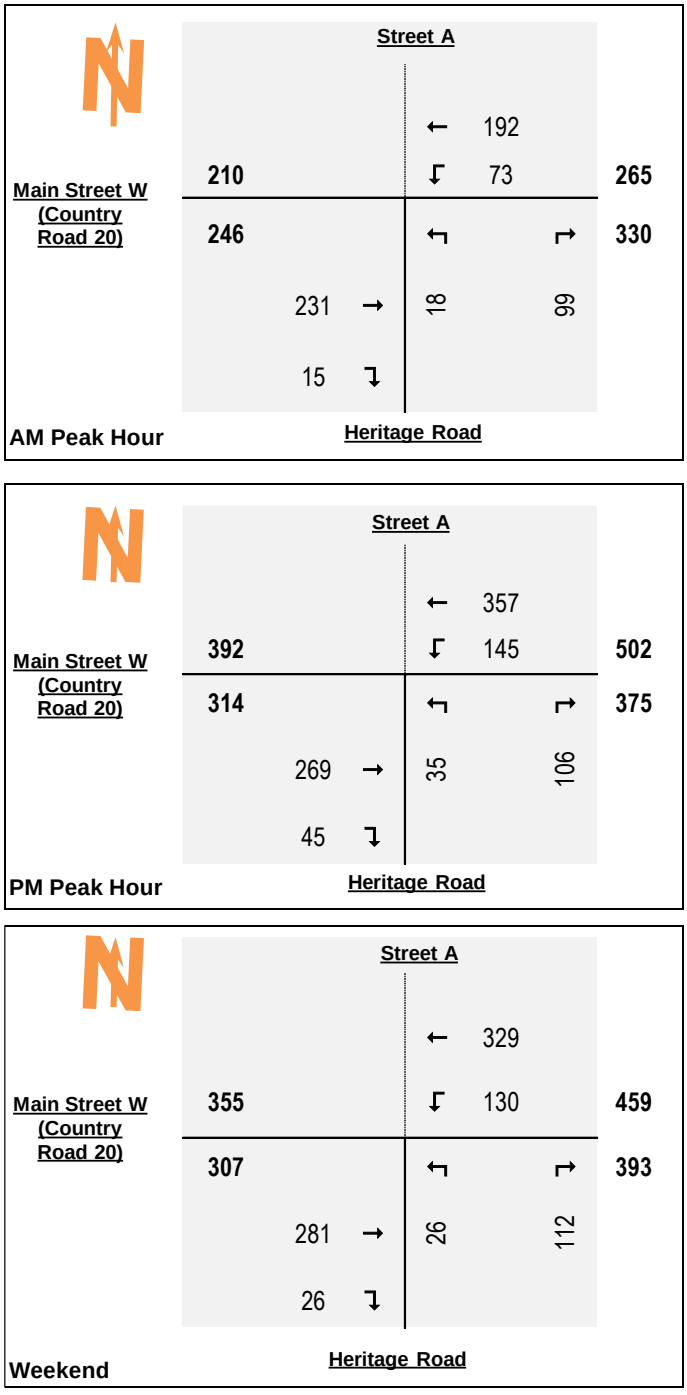


Figure 3.2- The Existing 2022 Traffic Volumes

4.0 FUTURE TRAFFIC VOLUME

Traffic volumes were forecasted based on the summation of below components:

- Existing conditions traffic volumes were projected to 2042 by applying a fixed 1% as growth rate, similar to TMP and Conklin subdivisions TIS.
- The difference between forecasted future traffic volumes and existing traffic volumes for Street A were extracted from the TMP and were added to the future traffic volumes. Where the forecasted future traffic for a movement was less than the existing traffic volume based on TMP, we conservatively did not apply traffic reductions. As TMP is a forecast for 2037, a 5-year growth was applied to the results. Forecasted and existing traffic volumes from TMP are presented in **Appendix B** for reference.
- The Conklin Subdivisions trips were re-distributed to the updated road network. Assigned site trips to Main Street West and Heritage Road/Street A intersection and Heritage Road/Street A and Road 2 West intersection from TIS report were applied to redistribute Conklin Subdivision trips to the intersection of Street A with Collector Road L and Collector Road O.

Forecasted traffic volumes are shown in **Figure 4.1** to **Figure 4.3**.

Future traffic volume

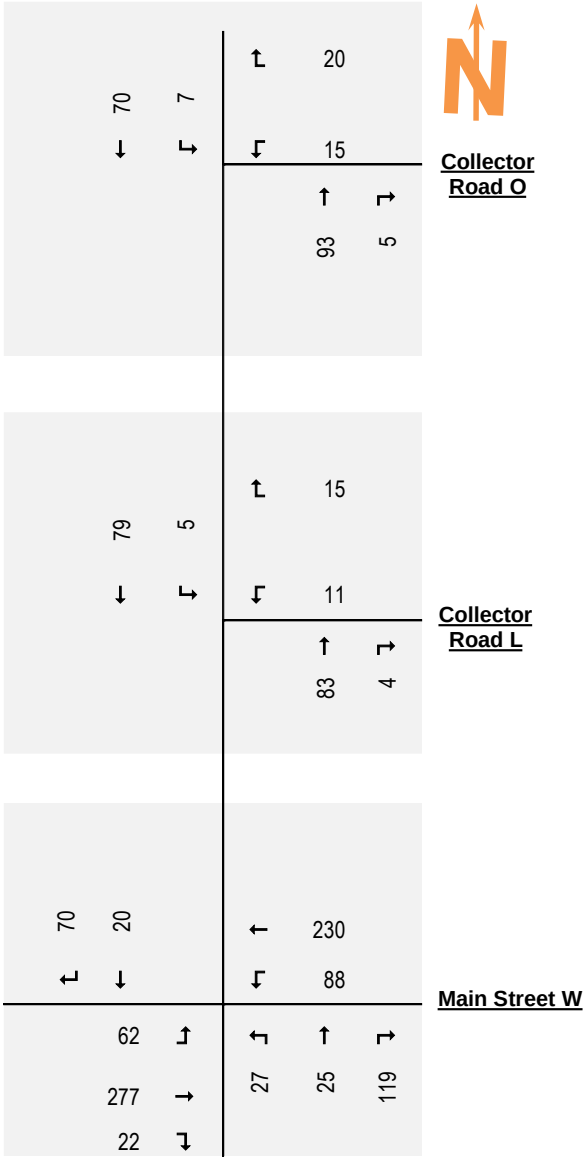


Figure 4.1- 2042 Traffic Volumes – AM Peak Hour

Future traffic volume

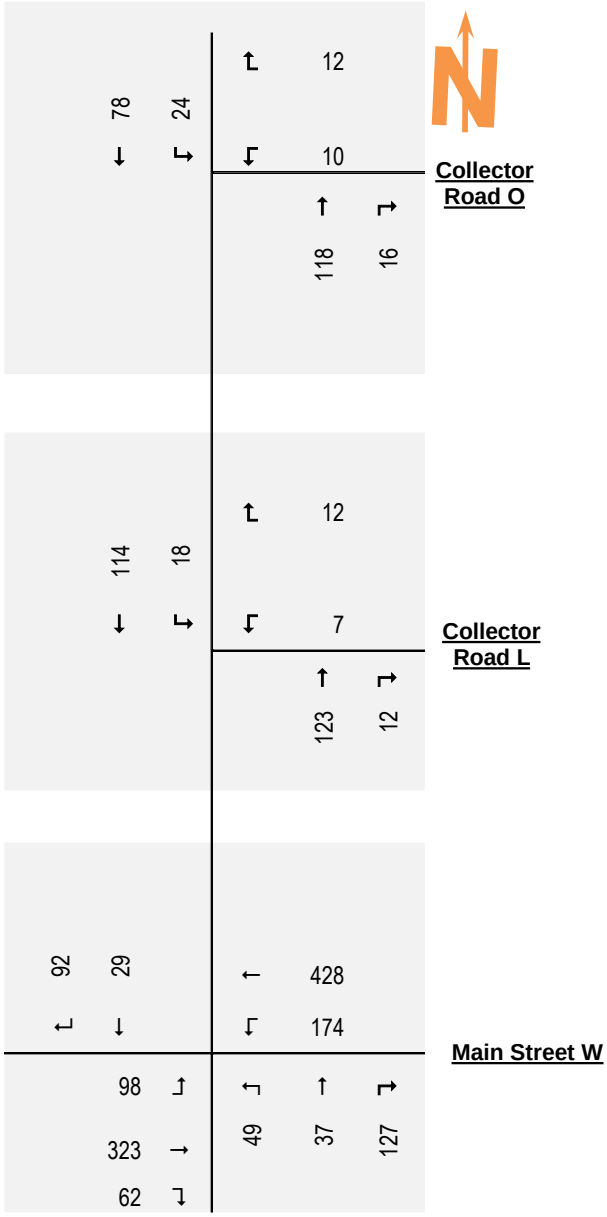


Figure 4.2- 2042 Traffic Volumes – PM Peak Hour

Future traffic volume

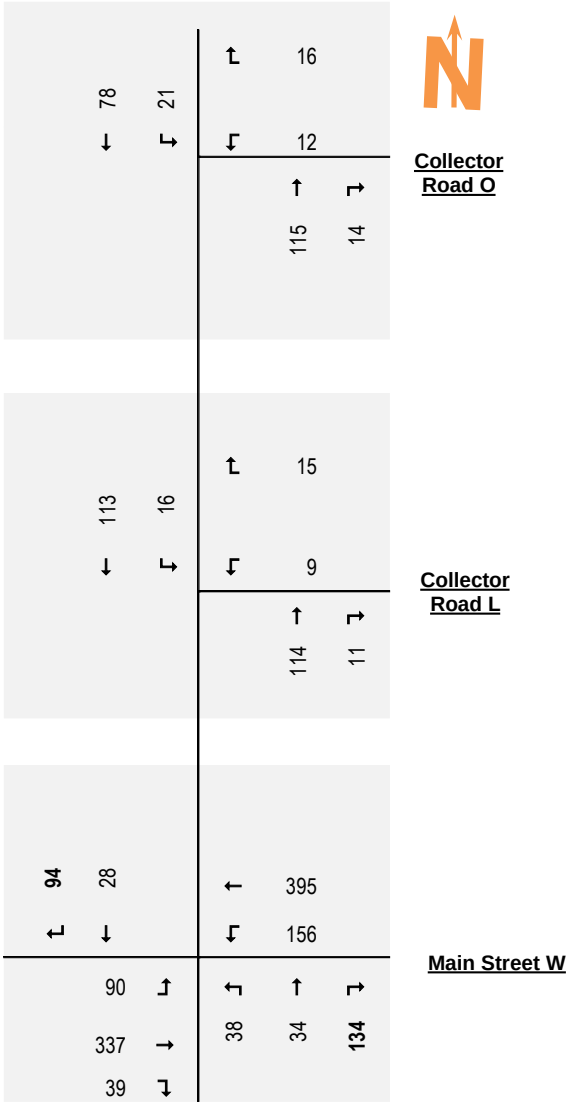


Figure 4.3- 2042 Traffic Volumes – Saturday Peak Hour

5.0 EXISTING OPERATION ANALYSIS

5.1 INTERSECTION CAPACITY ANALYSIS ASSUMPTIONS

The quality of intersection operations at the intersections in this study is evaluated in terms of level of service ("LOS") and volume to capacity ("v/c") as defined by the Highway Capacity Manual ("HCM"). LOS for the intersection is based on the computed delays on each of the traffic movements. LOS 'A' represents minimal delays and LOS 'F' represents a scenario with significant vehicular delays. Capacity is evaluated in terms of the ratio of demand flow to capacity with an at-capacity condition represented by a v/c ratio of 1.00 (i.e., volume demand equals capacity).

The intersection capacity analysis ("ICA") was conducted by using the HCM 2000 methodology and Synchro Studio 11 software.

5.2 EXISTING CONDITIONS (2022) OPERATIONAL ANALYSIS RESULTS

The Synchro analysis for the study intersection was conducted for the 2022 existing conditions, and the results of the analysis are summarized in **Table 5.1** below. Synchro outputs are included in **Appendix C.**

Based on the results shown in **Table 5.1,** all the movements are currently operating at LOS C or better.

Table 5.1 – Intersection Capacity Analysis Results – Existing 2022 Horizon

Intersection	Movement	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		LOS	Delay (s)	v/c	Queue (m) 95th	LOS	Delay (s)	v/c	Queue (m) 95th	LOS	Delay (s)	v/c	Queue (m) 95th
Heritage Road & Main Street	WBL	A	8.0	0.06	1.5	A	8.4	0.13	3.4	A	8.3	0.11	3.0
	NBLR	B	11.4	0.19	11.4	C	16.3	0.33	10.6	B	14.3	0.28	8.7

6.0 FUTURE TOTAL OPERATION ANALYSIS

A signal warrant was conducted for the intersection of Main Street West and Heritage Road/Street A by using the methodology outlined in the Ontario Traffic Manual (OTM) Book 12, Justification 7. The future total 2042 traffic volumes do not warrant the installation of a traffic signal at this intersection. The results of the signal warrant are attached for reference in **Appendix D**.

Left-turn lane warrants analysis for the intersection of Main Street West and Heritage Road/Street A was reviewed based on Geometric Design Standards for Ontario Highways. Results showed that an auxiliary eastbound left-turn lane at this intersection will be warranted in 2042 horizon year (see **Appendix E**).

The Synchro analysis for three study intersections was conducted for the 2042 total traffic horizon. The results of the analysis are summarized in **Table 6.1**. Synchro outputs are included in **Appendix F.**

Based on the analysis results**,** all movements at the intersection of Street A with Collector Road L and Collector Road O are expected to operate with LOS A, with minor road to be controlled with a stop sign, during all peak hours in 2042 horizon year. No auxiliary left turn lane is warranted for these intersections.

At the intersection of Main Street West and Heritage Road/Street A (unsignalized), northbound approach is anticipated to operate with LOS F, v/c>1, and 428 seconds and 196 seconds delay during PM peak hour and Saturday peak hour, respectively.

Table 6.1 – Intersection Capacity Analysis Results – Future 2042 Horizon

Intersection	Movement	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		Delay (s)	LOS	v/c	Queue (m) 95th	Delay (s)	LOS	v/c	Queue (m) 95th	Delay (s)	LOS	v/c	Queue (m) 95th
Heritage Road / Street A & Main Street W (Unsignalized)	EB L	7.9	A	0.05	1.2	8.6	A	0.1	2.5	8.5	A	0.09	2.2
	WB L	8.2	A	0.08	1.9	8.8	A	0.17	4.5	8.7	A	0.15	3.9
	NB LTR	20.8	C	0.45	17.4	427.6	F	1.76	132.3	195.3	F	1.24	92.8
	SB LTR	13.4	B	0.19	5.2	31.9	D	0.5	19.9	25.1	D	0.43	15.6
Collector Road L & Street A (Unsignalized)	WB LR	9.2	A	0.03	0.7	9.6	A	0.03	0.6	9.5	A	0.03	0.7
	SB LTR	0.4	A	0	0.1	1.1	A	0.01	0.3	1	A	0.01	0.3
Collector Road O & Street A (Unsignalized)	WB LR	9.3	A	0.04	1	9.6	A	0.03	0.7	9.6	A	0.04	0.9
	SB LTR	0.7	A	0.01	0.1	1.9	A	0.02	0.4	1.7	A	0.02	0.4

7.0 MITIGATION MEASURES

Following mitigation measures were evaluated for the intersection of Main Street West and Heritage Road/Street A.

Adding Northbound and Southbound Auxiliary Right Turn Lane

Adding northbound and southbound auxiliary right-turn lane will reduce the delay to 251 seconds, but LOS will still be F. Analysis results, done for PM peak hour as the worst peak hour, are shown in **Table 7.1**. Synchro outputs are included in **Appendix F**.

Table 7.1 – Intersection Capacity Analysis Results – Adding NBR and SBR Lane- 2042 Horizon- Worst Peak (PM Peak Hour)

Intersection	Movement	Delay (s)	LOS	v/c	Queue (m)- 95th
Heritage Road & Main Street W (Unsignalized)	EB L	8.6	A	0.1	2.5
	EB TR	0	A	0.25	0
	WB L	8.8	A	0.17	4.5
	WB TR	0	A	0.27	0
	NB LTR	250.9	F	1.37	106.2
	SB LTR	24	C	0.34	11.1

Signalization of the Intersection

Both Kingsville TMP (2022) and Conklin Subdivision TIS considered the intersection as a signalized intersection. Although the signal is not warranted for this intersection, signalization of this intersection was reviewed as a mitigation measure considering its operational analysis results. Analysis results for signalized intersection are presented in **Table 7.2**. With a signal, all the movements will operate with LOS A or B. Synchro outputs are included in **Appendix F**.



Table 7.2 – Intersection Capacity Analysis Results – Signalized Intersection- 2042 Horizon- Worst Peak (PM Peak Hour)

Intersection	Movement	Delay (s)	LOS	v/c	Queue (m) - 95th
Heritage Road & Main Street W (Signalized)	EBL	11.3	B	0.42	15.2
	EBT	11	B	0.48	34.4
	EBR	8.7	A	0.04	4.4
	WBL	12.5	B	0.54	24.2
	WBT	13.2	B	0.64	48.1
	NBT	8.7	A	0.14	14.6
	NBR	8.3	A	0.09	8.9
	SBT	8	A	0.04	6.5
	SBR	8.1	A	0.06	7.6
	Overall Intersection	**11.1**	**B**	**0.38**	

Roundabout

A one-lane roundabout at Main Street West and Heritage Road/Street A intersection was evaluated. Arcady was applied to conduct capacity analysis for the proposed roundabout. Analysis results for roundabout are presented in **Table 7.3**. Results show that a one-lane roundabout will work well with LOS A at this intersection. Arcady outputs are included in **Appendix G**.

Table 7.3 – Intersection Capacity Analysis Results – One-lane Roundabout – 2042Horizon

Intersection	Movement	AM Peak Hour				PM Peak Hour				SAT Peak Hour			
		Delay (s)	LOS	v/c	Queue (veh) 95th	Delay (s)	LOS	v/c	Queue (veh) 95th	Delay (s)	LOS	v/c	Queue (veh) 95th
Heritage Road / Street A & Main Street W (Roundabout)	EB	3.8	A	0.3	0.4	4.6	A	0.4	0.7	4.4	A	0.39	
	NB	3.6	A	0.16	0.2	3.8	A	0.2	0.2	3.8	A	0.19	
	WB	3.6	A	0.26	0.4	5.3	A	0.49	1	5.0	A	0.45	
	SB	3.2	A	0.08	0.1	4	A	0.13	0.1	3.9	A	0.13	
	Overall Intersection	**3.7**	**A**			**4.7**	**A**			**4.5**	**A**		

Ultimate layout

As roundabout requires more property than signalized intersection and based on the analysis results for signalized intersection and roundabout, and respecting that Main Street West and Heritage Road/Street A intersection was considered as a signalized intersection in TMP, signalization of Main Street West and Heritage Road/Street A intersection is proposed. The proposed layout is included in **Appendix H**.

8.0 CONCLUSION

A traffic study for Heritage Road Extension from Main Street W to Road 2 West was conducted to analyze existing and future traffic operations at one existing intersection and two future intersections along the segment. Findings were as below:

- In the existing conditions (2022), all movements at Main Street West and Heritage Road intersection are operating at LOS C or better.
- The future total 2042 traffic volumes do not warrant the installation of a traffic signal at Main Street West and Heritage Road/Street A intersection.
- An auxiliary eastbound left-turn lane at Main Street West and Heritage Road/Street A intersection will be warranted in 2042 horizon.
- At Main Street West and Heritage Road/Street A intersection (unsignalized), northbound approach is anticipated to operate with LOS F and more than 7 minutes delay during PM peak hour in 2042 horizon.
- All movements at the intersection of Street A with Collector Road L and Collector Road O are expected to operate with LOS A, with minor road to be controlled with a stop sign, in 2042 horizon.
- Adding northbound and southbound auxiliary right-turn lane at Main Street West and Heritage Road/Street A intersection was evaluated, and the results showed that the LOS will still be F in 2042 horizon.
- Signalization of Main Street West and Heritage Road/Street A intersection was examined, and the results showed that all movements will operate with LOS A or B in 2042 horizon. It is noted that signalization of this intersection is not warranted for 2042 traffic volumes.
- A one-lane roundabout at Main Street West and Heritage Road/Street A intersection was evaluated, and the analysis results showed the roundabout will work well with LOS A.
- Based on the above analyses and considerations a signalized intersection is recommended to be built at Main Street West and Heritage Road.



APPENDIX A

Traffic Movement Count (TMC)

CR 20 / Main Street West & Heritage Road

Morning Peak Diagram

Specified Period
From: 6:30:00
To: 10:30:00

One Hour Peak
From: 9:30:00
To: 10:30:00

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 25-Aug-2022

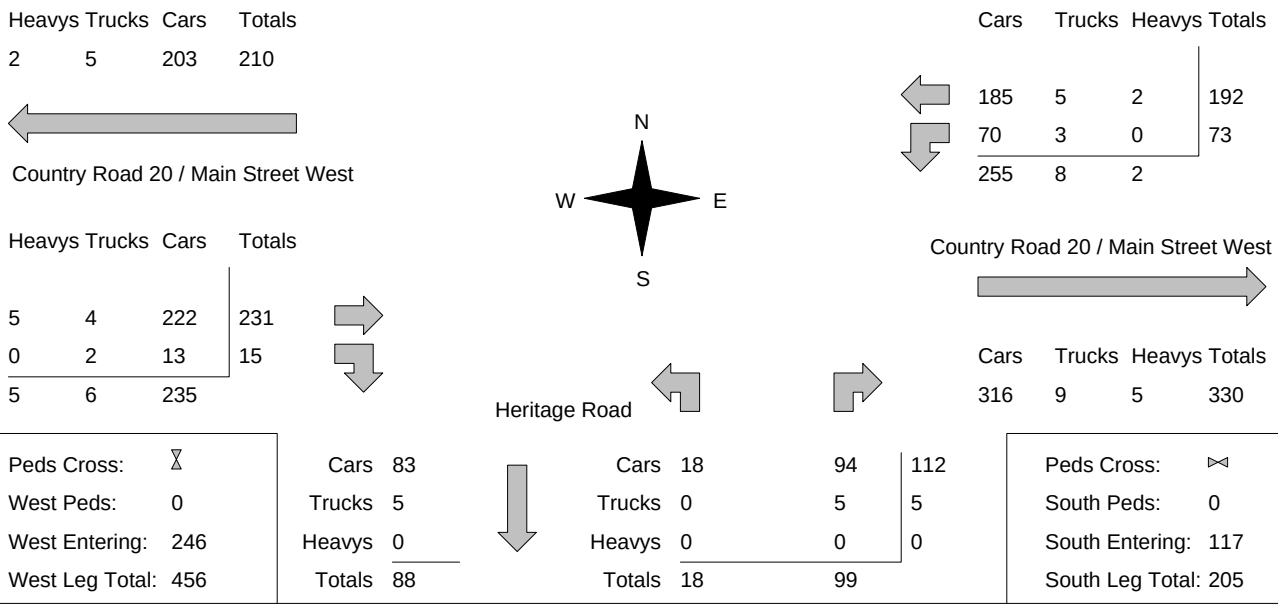
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 595
East Entering: 265
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 246
West Leg Total: 456

Cars 83
Trucks 5
Heavys 0
Totals 88

Cars 18 94 112
Trucks 0 5 5
Heavys 0 0 0
Totals 18 99

Peds Cross: ⋈
South Peds: 0
South Entering: 117
South Leg Total: 205

Comments

CR 20 / Main Street West & Heritage Road

Afternoon Peak Diagram

Specified Period
From: 14:30:00
To: 18:30:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 25-Aug-2022

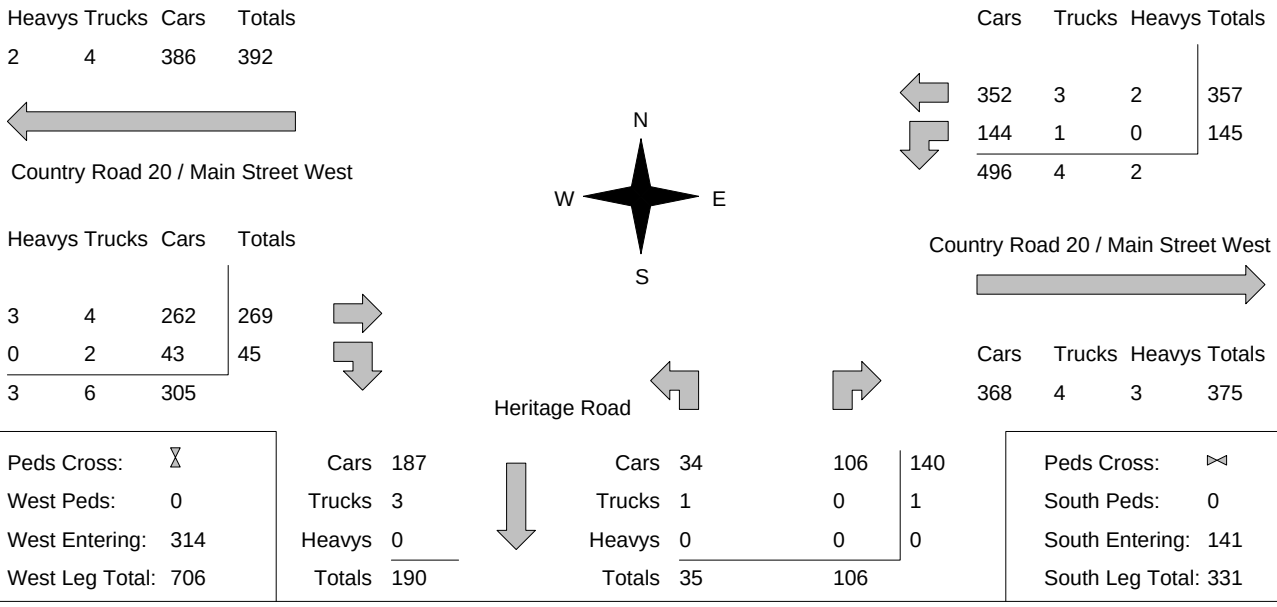
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 877
East Entering: 502
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 314
West Leg Total: 706

Cars 187
Trucks 3
Heavys 0
Totals 190

Cars 34 106 140
Trucks 1 0 1
Heavys 0 0 0
Totals 35 106

Peds Cross:
South Peds: 0
South Entering: 141
South Leg Total: 331

Comments

CR 20 / Main Street West & Heritage Road

Total Count Diagram

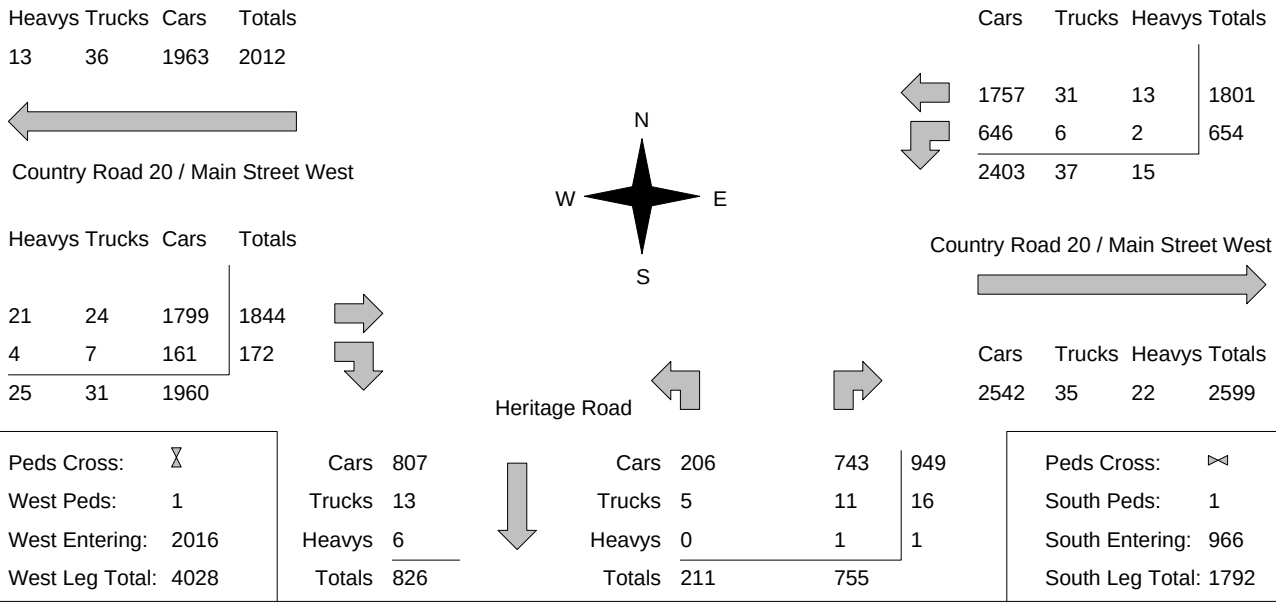
Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 25-Aug-2022

Weather conditions:
Clear
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 5054
East Entering: 2455
East Peds: 5
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 2016
West Leg Total: 4028

Cars 807
Trucks 13
Heavys 6
Totals 826

Cars 206 743 949
Trucks 5 11 16
Heavys 0 1 1
Totals 211 755

Peds Cross: ⋈
South Peds: 1
South Entering: 966
South Leg Total: 1792

Comments

CR 20 / Main Street West & Heritage Road
Traffic Count Summary

Intersection: Country Road 20 / Main Street We | **Count Date:** 25-Aug-2022 | **Municipality:** Kingsville

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	41
8:00:00	0	0	0	0	0	125
9:00:00	0	0	0	0	0	122
10:00:00	0	0	0	0	0	92
15:00:00	0	0	0	0	0	133
16:00:00	0	0	0	0	0	138
17:00:00	0	0	0	0	0	133
18:00:00	0	0	0	0	0	141
Totals:	0	0	0	0	0	925

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	12	0	29	41	0
8:00:00	28	0	97	125	0
9:00:00	22	0	100	122	0
10:00:00	12	0	80	92	0
15:00:00	31	0	102	133	0
16:00:00	32	0	106	138	1
17:00:00	32	0	101	133	0
18:00:00	33	0	108	141	0
Totals:	202	0	723	925	1

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	11	50	0	61	0	142
8:00:00	24	130	0	154	0	351
9:00:00	54	155	0	209	0	473
10:00:00	54	167	0	221	4	471
15:00:00	80	231	0	311	1	552
16:00:00	105	312	0	417	0	687
17:00:00	119	311	0	430	0	738
18:00:00	156	338	0	494	0	778
Totals:	603	1694	0	2297	5	4192

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	75	6	81	0
8:00:00	0	183	14	197	0
9:00:00	0	251	13	264	0
10:00:00	0	236	14	250	1
15:00:00	0	216	25	241	0
16:00:00	0	246	24	270	0
17:00:00	0	278	30	308	0
18:00:00	0	248	36	284	0
Totals:	0	1733	162	1895	1

Calculated Values for Traffic Crossing Major Street

Hours Ending:	7:00	8:00	9:00	10:00	15:00	16:00	17:00	18:00
Crossing Values:	12	28	22	17	32	32	32	33

CR 20 / Main Street West & Heritage Road

Morning Peak Diagram

Specified Period
From: 10:30:00
To: 12:30:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 27-Aug-2022

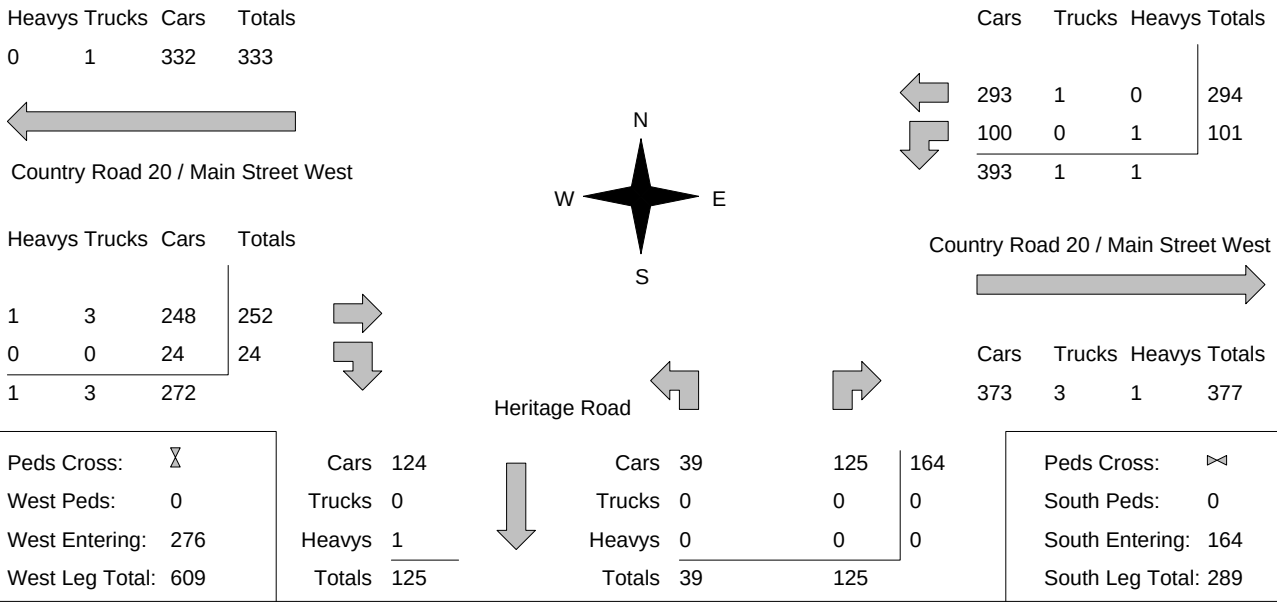
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 772
East Entering: 395
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 276
West Leg Total: 609

Cars 124
Trucks 0
Heavys 1
Totals 125

Cars 39 125 164
Trucks 0 0 0
Heavys 0 0 0
Totals 39 125

Peds Cross:
South Peds: 0
South Entering: 164
South Leg Total: 289

Comments

CR 20 / Main Street West & Heritage Road

Mid-day Peak Diagram

Specified Period
From: 12:30:00
To: 15:30:00

One Hour Peak
From: 13:30:00
To: 14:30:00

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 27-Aug-2022

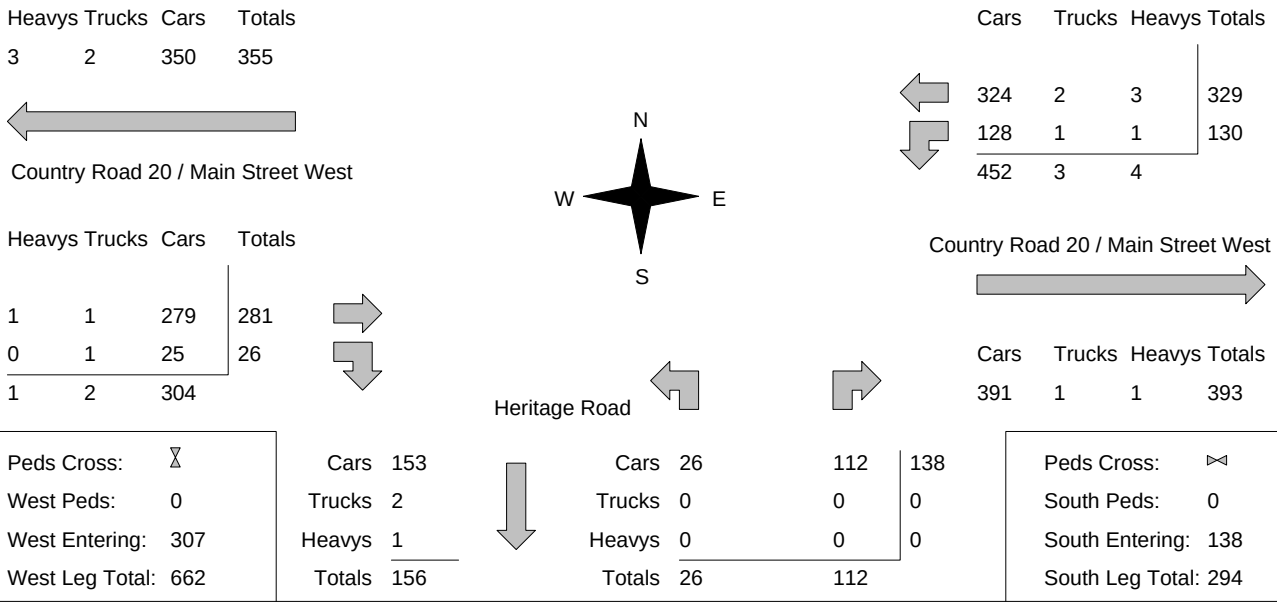
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 852
East Entering: 459
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 307
West Leg Total: 662

Cars 153
Trucks 2
Heavys 1
Totals 156

Cars 26 112 138
Trucks 0 0 0
Heavys 0 0 0
Totals 26 112

Peds Cross:
South Peds: 0
South Entering: 138
South Leg Total: 294

Comments

CR 20 / Main Street West & Heritage Road

Afternoon Peak Diagram

Specified Period
From: 15:30:00
To: 18:30:00

One Hour Peak
From: 15:45:00
To: 16:45:00

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 27-Aug-2022

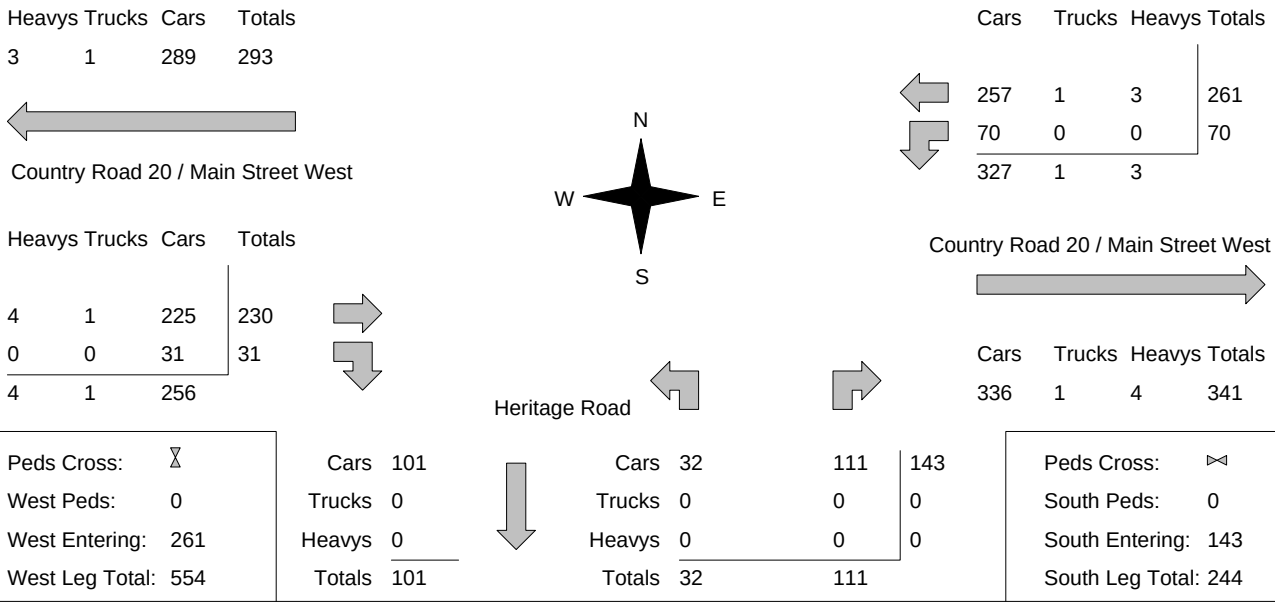
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 672
East Entering: 331
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 261
West Leg Total: 554

Cars 101
Trucks 0
Heavys 0
Totals 101

Cars 32 111 143
Trucks 0 0 0
Heavys 0 0 0
Totals 32 111

Peds Cross:
South Peds: 0
South Entering: 143
South Leg Total: 244

Comments

CR 20 / Main Street West & Heritage Road

Total Count Diagram

Municipality: Kingsville
Site #: 0000004200
Intersection: Country Road 20 / Main Street Wes
TFR File #: 1
Count date: 27-Aug-2022

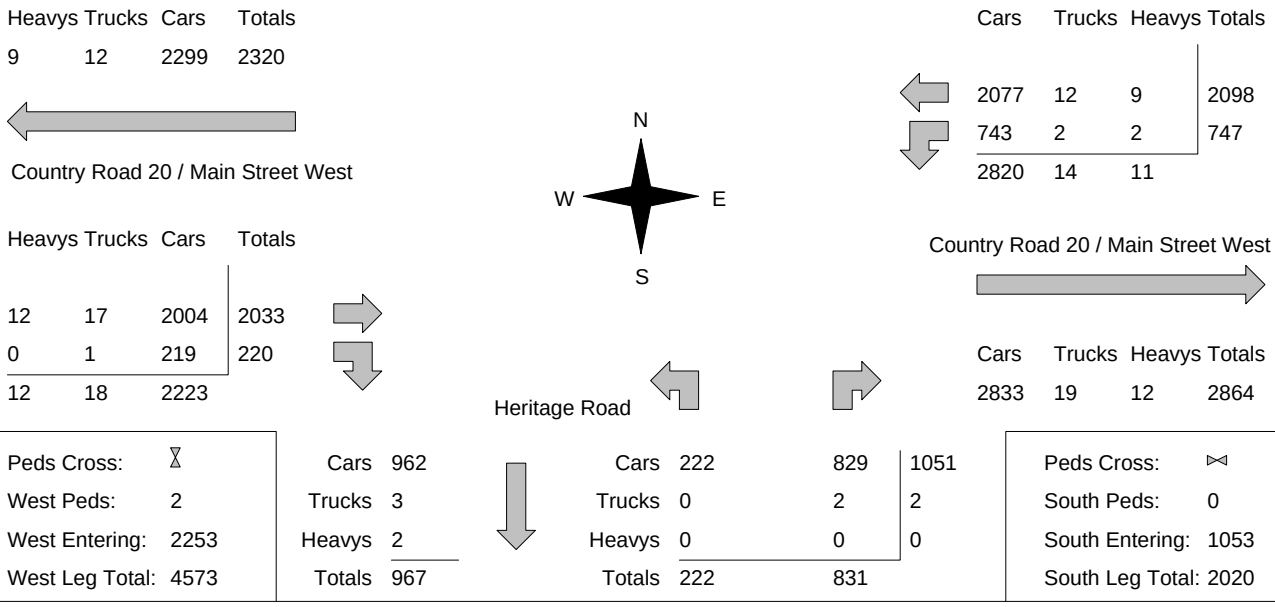
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Country Road 20 / Main Street Wes

East Leg Total: 5709
East Entering: 2845
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 2
West Entering: 2253
West Leg Total: 4573

Cars 962
Trucks 3
Heavys 2
Totals 967

Cars 222 829 1051
Trucks 0 2 2
Heavys 0 0 0
Totals 222 831

Peds Cross: ⋈
South Peds: 0
South Entering: 1053
South Leg Total: 2020

Comments

CR 20 / Main Street West & Heritage Road
Traffic Count Summary

Intersection: Country Road 20 / Main Street We | **Count Date:** 27-Aug-2022 | **Municipality:** Kingsville

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
11:00:00	0	0	0	0	0	60
12:00:00	0	0	0	0	0	138
13:00:00	0	0	0	0	0	141
14:00:00	0	0	0	0	0	142
15:00:00	0	0	0	0	0	155
16:00:00	0	0	0	0	0	157
17:00:00	0	0	0	0	0	136
18:00:00	0	0	0	0	0	89
Totals:	0	0	0	0	0	1018

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
11:00:00	11	0	49	60	0
12:00:00	35	0	103	138	0
13:00:00	30	0	111	141	0
14:00:00	23	0	119	142	0
15:00:00	31	0	124	155	0
16:00:00	39	0	118	157	0
17:00:00	23	0	113	136	0
18:00:00	22	0	67	89	0
Totals:	214	0	804	1018	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
11:00:00	55	123	0	178	0	330
12:00:00	100	275	0	375	0	686
13:00:00	122	263	0	385	0	681
14:00:00	125	315	0	440	0	717
15:00:00	96	315	0	411	0	730
16:00:00	89	256	0	345	0	636
17:00:00	75	259	0	334	0	599
18:00:00	56	204	0	260	0	482
Totals:	718	2010	0	2728	0	4861

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
11:00:00	0	145	7	152	0
12:00:00	0	283	28	311	0
13:00:00	0	267	29	296	0
14:00:00	0	256	21	277	0
15:00:00	0	289	30	319	1
16:00:00	0	257	34	291	0
17:00:00	0	233	32	265	0
18:00:00	0	191	31	222	1
Totals:	0	1921	212	2133	2

Calculated Values for Traffic Crossing Major Street

Hours Ending:	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
Crossing Values:	11	35	30	23	32	39	23	23

APPENDIX B

Forecasted and Existing Traffic Volumes from TMP

TRAFFIC VOLUME DEVELOPMENT

A growth rate of 1 percent per year was applied to the respective year counts to represent year 2022 traffic volumes. **Figure 18** shows the existing traffic volumes at the study intersections.

Figure 18. Existing Traffic Volumes

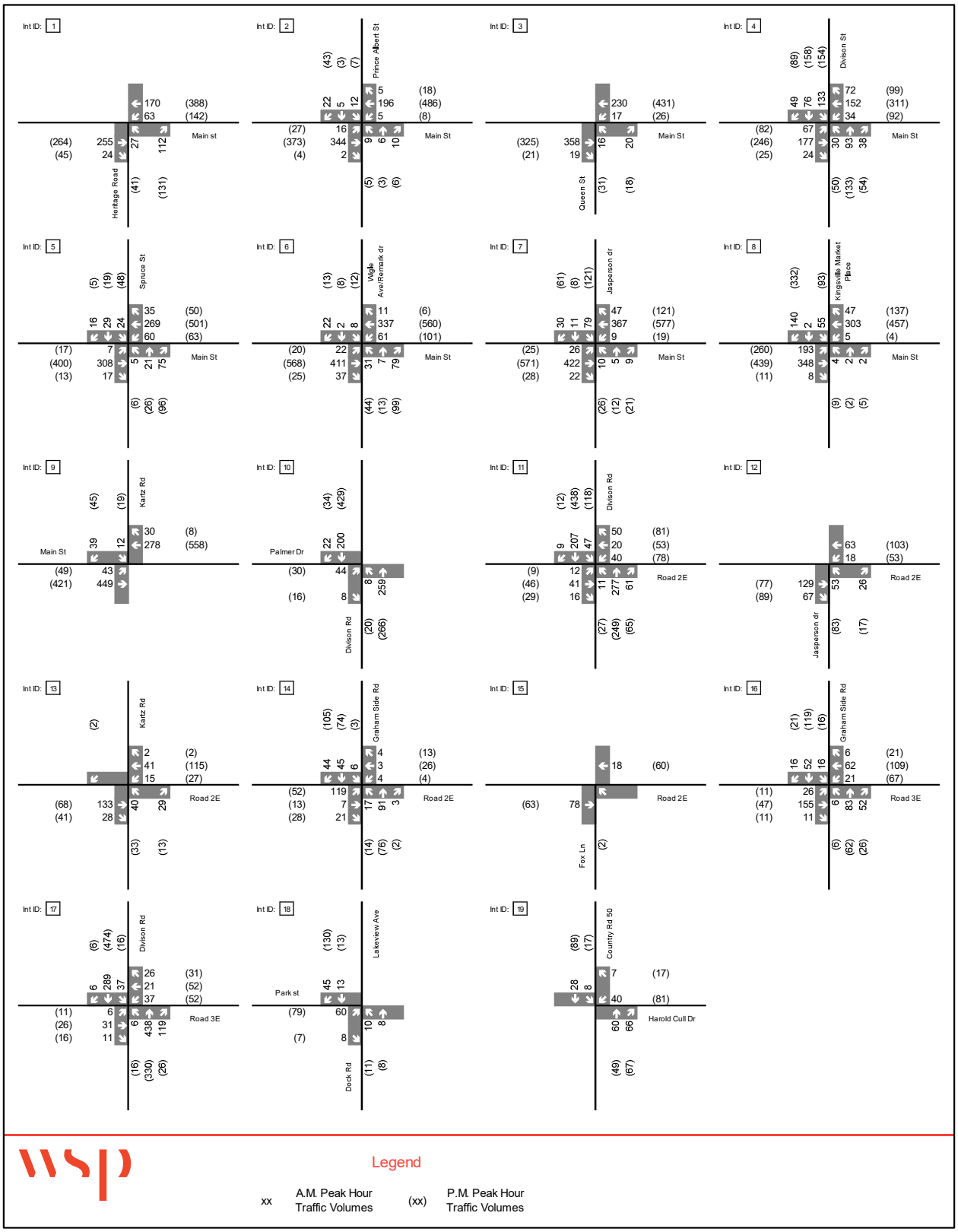
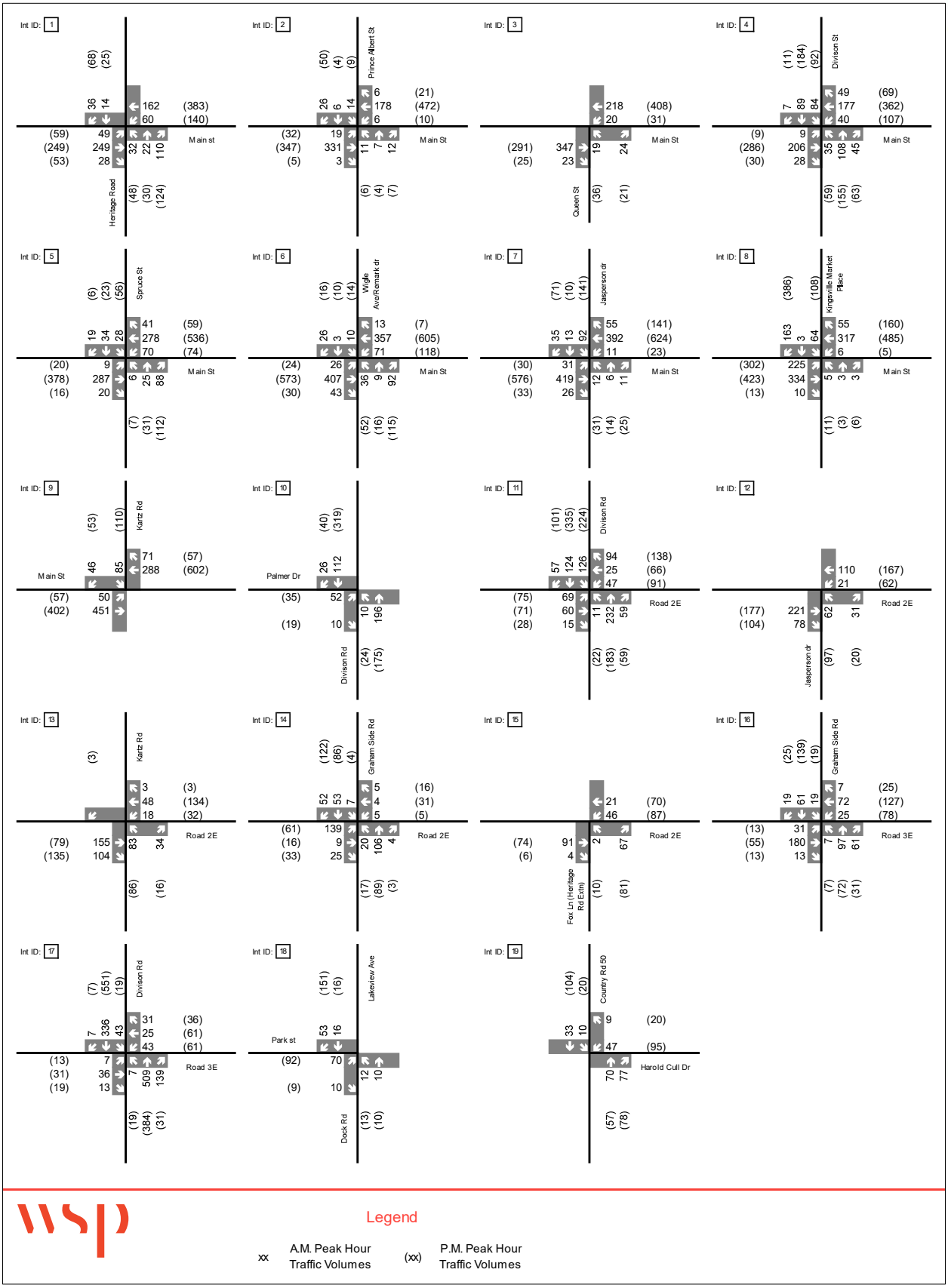


Figure 27. Alternative 3 - Year 2037 Traffic Volumes



APPENDIX C

Synchro Output – Existing 2022



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	231	15	73	192	18	99
Future Volume (Veh/h)	231	15	73	192	18	99
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	251	16	79	209	20	108
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			267		626	259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			267		626	259
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		95	86
cM capacity (veh/h)			1297		421	780

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	267	79	209	128
Volume Left	0	79	0	20
Volume Right	16	0	0	108
cSH	1700	1297	1700	688
Volume to Capacity	0.16	0.06	0.12	0.19
Queue Length 95th (m)	0.0	1.5	0.0	5.2
Control Delay (s)	0.0	8.0	0.0	11.4
Lane LOS		A		B
Approach Delay (s)	0.0	2.2		11.4
Approach LOS				B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	269	45	145	357	35	106
Future Volume (Veh/h)	269	45	145	357	35	106
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	292	49	158	388	38	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			341		1020	316
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			341		1020	316
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		83	84
cM capacity (veh/h)			1218		228	724

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	341	158	388	153
Volume Left	0	158	0	38
Volume Right	49	0	0	115
cSH	1700	1218	1700	470
Volume to Capacity	0.20	0.13	0.23	0.33
Queue Length 95th (m)	0.0	3.4	0.0	10.6
Control Delay (s)	0.0	8.4	0.0	16.3
Lane LOS		A		C
Approach Delay (s)	0.0	2.4		16.3
Approach LOS				C

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	281	26	130	329	26	112
Future Volume (Veh/h)	281	26	130	329	26	112
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	305	28	141	358	28	122
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			333		959	319
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			333		959	319
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		89	83
cM capacity (veh/h)			1226		252	722

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	333	141	358	150
Volume Left	0	141	0	28
Volume Right	28	0	0	122
cSH	1700	1226	1700	536
Volume to Capacity	0.20	0.11	0.21	0.28
Queue Length 95th (m)	0.0	3.0	0.0	8.7
Control Delay (s)	0.0	8.3	0.0	14.3
Lane LOS		A		B
Approach Delay (s)	0.0	2.3		14.3
Approach LOS				B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

Signal Warrant

Signal Warrant Calculation

MAJOR STREET: Country Road 20/Main Street West

MINOR STREET: Heritage Road / Street A

COMMENT Total Traffic - 2042

NUMBER OF APPROACH LANES: 1 [x] 2 [ ]

TEE INTERSECTION CONFIGURATION YES [ ] NO [X]

FLOW CONDITIONS: FREE FLOW (RURAL) [ ]
RESTRICTED FLOW (URBAN) [X]

VOLUME	AM	PM	FACTOR *	
1A - All	940	1,419	n/a	590
1B - Minor	261	334	50%	149
2A - Major	679	1,085	50%	441
2B - Cross	52	86	50%	35

* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% SATISFIED:	YES [ ]	NO [X]	Warrant for new intersection with forecast traffic
120% SATISFIED:	YES [ ]	NO [X]	Warrant for existing intersection with forecast traffic
100% SATISFIED:	YES [ ]	NO [X]	Warrant for existing intersection with existing traffic *
COMBO 80% SATISFIED:	YES [ ]	NO [X]	Warrant for existing intersection with existing traffic
80% SATISFIED:	YES [ ]	NO [X]	

* Consider full underground provisions if 100% for forecast traffic

WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
		X			
ALL APPROACHES	480	720	600	900	590
	% FULFILLED				82%

150% SATISFIED:	YES [ ]	NO [X]
120% SATISFIED:	YES [ ]	NO [X]
100% SATISFIED:	YES [ ]	NO [X]
80% SATISFIED:	YES [ ]	NO [X]

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
		X			
MINOR STREET APPROACHES	120	170	120	170	149
	% FULFILLED				88%

WARRANT 2 - DELAY TO CROSS TRAFFIC

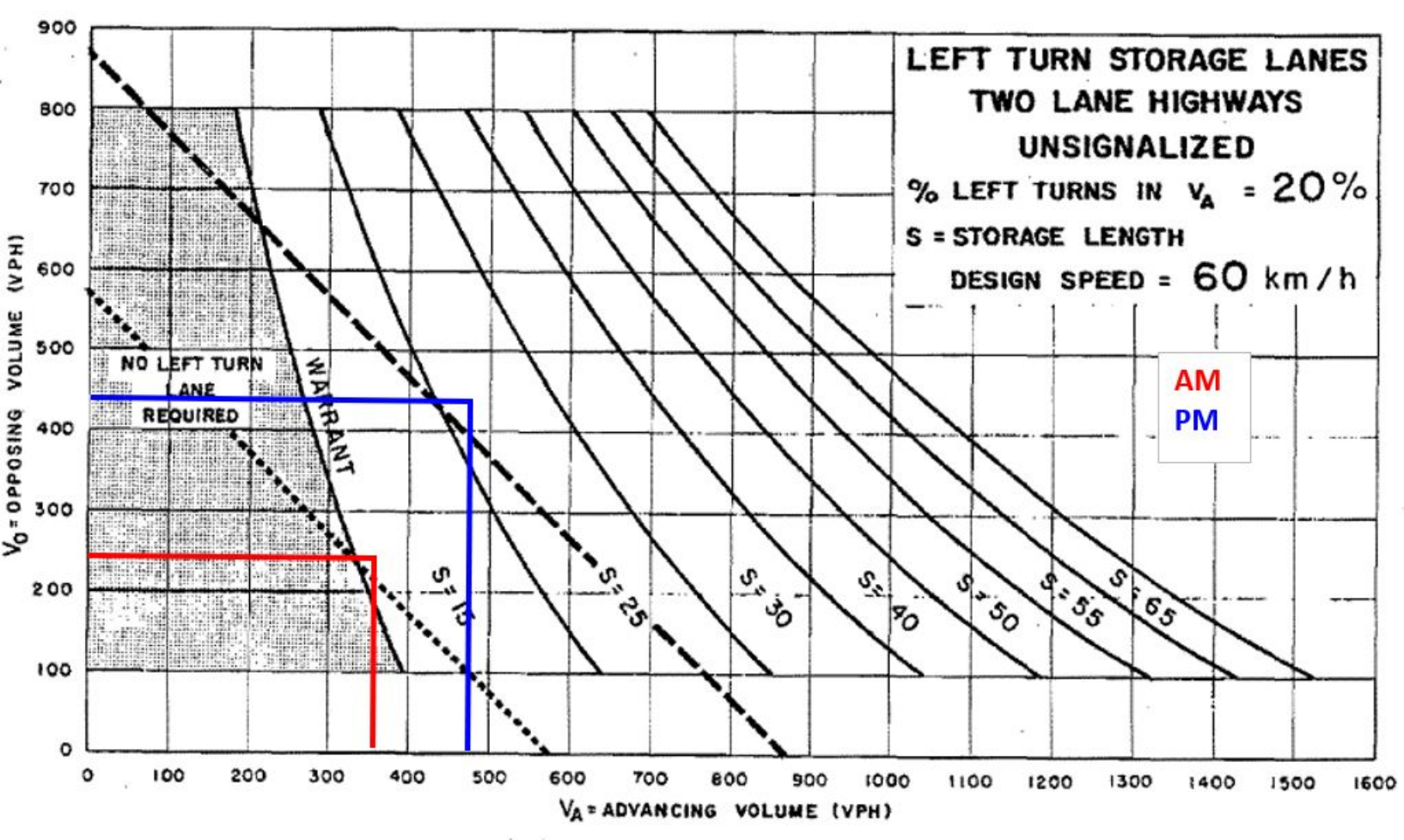
APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
		X			
MAJOR STREET APPROACHES	480	720	600	900	441
	% FULFILLED				61%

150% SATISFIED:	YES [ ]	NO [X]
120% SATISFIED:	YES [ ]	NO [X]
100% SATISFIED:	YES [ ]	NO [X]
80% SATISFIED:	YES [ ]	NO [X]

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
		X			
TRAFFIC CROSSING MAJOR STREET	50	75	120	170	35
	% FULFILLED				46%

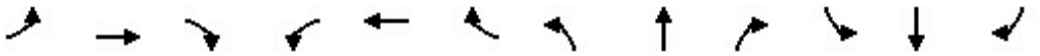
APPENDIX E

Auxiliary Left-turn Lane Warrant


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 20%
S = STORAGE LENGTH
DESIGN SPEED = 60 km/h
AM
PM
NO LEFT TURN LANE REQUIRED
WARRANT
S=15
S=25
S=30
S=40
S=50
S=55
S=65
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

APPENDIX F

Synchro Output - 2042



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	277	22	88	230	0	27	25	119	0	20	70
Future Volume (Veh/h)	62	277	22	88	230	0	27	25	119	0	20	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	301	24	96	250	0	29	27	129	0	22	76
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	250			325			976	889	313	1020	901	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	250			325			976	889	313	1020	901	250
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			92			83	89	82	100	91	90
cM capacity (veh/h)	1316			1235			176	247	727	147	243	789

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	67	325	96	250	185	98
Volume Left	67	0	96	0	29	0
Volume Right	0	24	0	0	129	76
cSH	1316	1700	1235	1700	409	525
Volume to Capacity	0.05	0.19	0.08	0.15	0.45	0.19
Queue Length 95th (m)	1.2	0.0	1.9	0.0	17.4	5.2
Control Delay (s)	7.9	0.0	8.2	0.0	20.8	13.4
Lane LOS	A		A		C	B
Approach Delay (s)	1.3		2.3		20.8	13.4
Approach LOS					C	B

Intersection Summary				
Average Delay	6.3			
Intersection Capacity Utilization	47.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	15	83	4	5	79
Future Volume (Veh/h)	11	15	83	4	5	79
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	16	90	4	5	86
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	188	92			94	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188	92			94	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			100	
cM capacity (veh/h)	798	965			1500	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	28	94	91
Volume Left	12	0	5
Volume Right	16	4	0
cSH	886	1700	1500
Volume to Capacity	0.03	0.06	0.00
Queue Length 95th (m)	0.7	0.0	0.1
Control Delay (s)	9.2	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	0.4
Approach LOS	A		

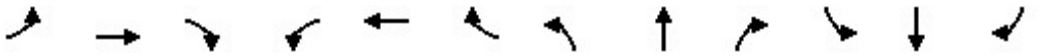
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	20	93	5	7	70
Future Volume (Veh/h)	15	20	93	5	7	70
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	22	101	5	8	76
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	196	104			106	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	104			106	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			99	
cM capacity (veh/h)	789	951			1485	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	38	106	84
Volume Left	16	0	8
Volume Right	22	5	0
cSH	875	1700	1485
Volume to Capacity	0.04	0.06	0.01
Queue Length 95th (m)	1.0	0.0	0.1
Control Delay (s)	9.3	0.0	0.7
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	0.7
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	323	62	174	428	0	49	37	127	0	29	92
Future Volume (Veh/h)	98	323	62	174	428	0	49	37	127	0	29	92
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	351	67	189	465	0	53	40	138	0	32	100
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	465			418			1558	1442	384	1566	1475	465
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	465			418			1558	1442	384	1566	1475	465
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			83			0	60	79	100	66	83
cM capacity (veh/h)	1096			1141			46	100	663	40	95	597

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	107	418	189	465	231	132
Volume Left	107	0	189	0	53	0
Volume Right	0	67	0	0	138	100
cSH	1096	1700	1141	1700	132	262
Volume to Capacity	0.10	0.25	0.17	0.27	1.76	0.50
Queue Length 95th (m)	2.5	0.0	4.5	0.0	132.3	19.9
Control Delay (s)	8.6	0.0	8.8	0.0	427.6	31.9
Lane LOS	A		A		F	D
Approach Delay (s)	1.8		2.5		427.6	31.9
Approach LOS					F	D

Intersection Summary				
Average Delay	68.5			
Intersection Capacity Utilization	63.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	12	123	12	18	114
Future Volume (Veh/h)	7	12	123	12	18	114
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	13	134	13	20	124
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	304	140			147	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	140			147	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	678	907			1435	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	21	147	144
Volume Left	8	0	20
Volume Right	13	13	0
cSH	804	1700	1435
Volume to Capacity	0.03	0.09	0.01
Queue Length 95th (m)	0.6	0.0	0.3
Control Delay (s)	9.6	0.0	1.1
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	1.1
Approach LOS	A		

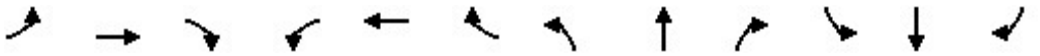
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	12	118	16	24	78
Future Volume (Veh/h)	10	12	118	16	24	78
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	13	128	17	26	85
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	274	136			145	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274	136			145	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			98	
cM capacity (veh/h)	703	912			1437	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	145	111
Volume Left	11	0	26
Volume Right	13	17	0
cSH	803	1700	1437
Volume to Capacity	0.03	0.09	0.02
Queue Length 95th (m)	0.7	0.0	0.4
Control Delay (s)	9.6	0.0	1.9
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	1.9
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	25.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	337	39	156	395	0	38	34	134	0	28	94
Future Volume (Veh/h)	90	337	39	156	395	0	38	34	134	0	28	94
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	366	42	170	429	0	41	37	146	0	30	102
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	429			408			1469	1352	387	1496	1373	429
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	429			408			1469	1352	387	1496	1373	429
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			85			30	68	78	100	74	84
cM capacity (veh/h)	1130			1151			59	117	661	50	113	626

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	98	408	170	429	224	132
Volume Left	98	0	170	0	41	0
Volume Right	0	42	0	0	146	102
cSH	1130	1700	1151	1700	181	309
Volume to Capacity	0.09	0.24	0.15	0.25	1.24	0.43
Queue Length 95th (m)	2.2	0.0	3.9	0.0	92.8	15.6
Control Delay (s)	8.5	0.0	8.7	0.0	195.3	25.1
Lane LOS	A		A		F	D
Approach Delay (s)	1.6		2.5		195.3	25.1
Approach LOS					F	D

Intersection Summary				
Average Delay	33.8			
Intersection Capacity Utilization	61.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	15	114	11	16	113
Future Volume (Veh/h)	9	15	114	11	16	113
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	16	124	12	17	123
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	287	130			136	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	287	130			136	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	98			99	
cM capacity (veh/h)	695	920			1448	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	136	140
Volume Left	10	0	17
Volume Right	16	12	0
cSH	818	1700	1448
Volume to Capacity	0.03	0.08	0.01
Queue Length 95th (m)	0.7	0.0	0.3
Control Delay (s)	9.5	0.0	1.0
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	1.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

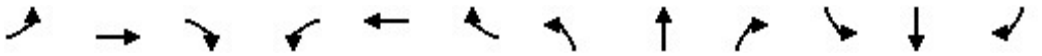


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	16	115	14	21	78
Future Volume (Veh/h)	12	16	115	14	21	78
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	17	125	15	23	85
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	264	132			140	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264	132			140	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			98	
cM capacity (veh/h)	714	917			1443	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	30	140	108
Volume Left	13	0	23
Volume Right	17	15	0
cSH	816	1700	1443
Volume to Capacity	0.04	0.08	0.02
Queue Length 95th (m)	0.9	0.0	0.4
Control Delay (s)	9.6	0.0	1.7
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	1.7
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
101: Heritage Road & Main Street W

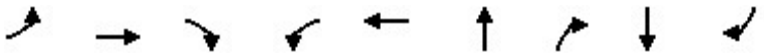


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	323	62	174	428	0	49	37	127	0	29	92
Future Volume (Veh/h)	98	323	62	174	428	0	49	37	127	0	29	92
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	351	67	189	465	0	53	40	138	0	32	100
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)									7			7
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	465			418			1508	1442	384	1497	1475	465
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	465			418			1508	1442	384	1497	1475	465
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			83			0	60	79	100	66	83
cM capacity (veh/h)	1096			1141			50	100	663	45	95	597

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	107	418	189	465	231	132
Volume Left	107	0	189	0	53	0
Volume Right	0	67	0	0	138	100
cSH	1096	1700	1141	1700	169	392
Volume to Capacity	0.10	0.25	0.17	0.27	1.37	0.34
Queue Length 95th (m)	2.5	0.0	4.5	0.0	106.2	11.1
Control Delay (s)	8.6	0.0	8.8	0.0	250.9	24.0
Lane LOS	A		A		F	C
Approach Delay (s)	1.8		2.5		250.9	24.0
Approach LOS					F	C

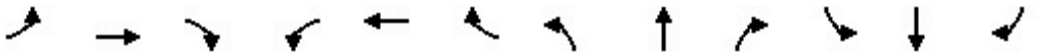
Intersection Summary				
Average Delay	41.3			
Intersection Capacity Utilization	51.7%	ICU Level of Service		A
Analysis Period (min)	15			

Queues
101: Heritage Road & Main Street W



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	107	351	67	189	465	93	138	32	100
v/c Ratio	0.42	0.49	0.10	0.54	0.64	0.14	0.19	0.04	0.14
Control Delay	15.3	12.5	2.9	16.8	15.4	11.3	3.7	10.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	12.5	2.9	16.8	15.4	11.3	3.7	10.9	4.0
Queue Length 50th (m)	5.8	19.6	0.0	10.9	28.1	4.2	0.0	1.4	0.0
Queue Length 95th (m)	15.2	34.4	4.4	24.2	48.1	14.6	8.9	6.5	7.6
Internal Link Dist (m)		725.9			587.1	768.5		609.6	
Turn Bay Length (m)	40.0		20.0	105.0			20.0		20.0
Base Capacity (vph)	404	1159	1011	556	1159	670	744	780	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.07	0.34	0.40	0.14	0.19	0.04	0.14

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	323	62	174	428	0	49	37	127	0	29	92
Future Volume (vph)	98	323	62	174	428	0	49	37	127	0	29	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97	1.00		1.00	1.00
Satd. Flow (prot)	1789	1883	1601	1789	1883			1831	1601		1883	1601
Flt Permitted	0.35	1.00	1.00	0.48	1.00			0.86	1.00		1.00	1.00
Satd. Flow (perm)	657	1883	1601	905	1883			1618	1601		1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	351	67	189	465	0	53	40	138	0	32	100
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	81	0	0	58
Lane Group Flow (vph)	107	351	26	189	465	0	0	93	57	0	32	42
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Actuated Green, G (s)	17.5	17.5	17.5	17.5	17.5			18.8	18.8		18.8	18.8
Effective Green, g (s)	17.5	17.5	17.5	17.5	17.5			18.8	18.8		18.8	18.8
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39			0.42	0.42		0.42	0.42
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	253	727	618	349	727			671	664		781	664
v/s Ratio Prot		0.19			c0.25						0.02	
v/s Ratio Perm	0.16		0.02	0.21				c0.06	0.04			0.03
v/c Ratio	0.42	0.48	0.04	0.54	0.64			0.14	0.09		0.04	0.06
Uniform Delay, d1	10.2	10.5	8.7	10.8	11.3			8.2	8.0		7.9	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	0.5	0.0	1.7	1.9			0.4	0.3		0.1	0.2
Delay (s)	11.3	11.0	8.7	12.5	13.2			8.7	8.3		8.0	8.1
Level of Service	B	B	A	B	B			A	A		A	A
Approach Delay (s)		10.8			13.0			8.4			8.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX G

Arcady Output

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: F_2042_AM.j9
Path: C:\Users\abagherichimeh\Desktop\Kingsville
Report generation date: 3/28/2023 2:18:04 AM

«2042, AM
»Intersection Network
»Legs
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of intersection performance

	AM						
	Queue (Veh)	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
	2042						
Leg 1	0.4	1.7	3.80	0.30	A	3.65	A
Leg 2	0.2	0.5	3.59	0.16	A		
Leg 3	0.4	1.5	3.63	0.26	A		
Leg 4	0.1	0.5	3.19	0.08	A		

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

File summary

File Description

Title	
Location	
Site number	
Date	11/21/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	CORP\abagherichimeh
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
5.75	✓			0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2042	AM	ONE HOUR	08:00	09:30	15	✓

2042, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Intersection Network

Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	3.65	A

Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

Legs

Legs

Leg	Name	Description
1	Main St	
2	Heritage Rd	
3	Main St	
4	Heritage Rd	

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	4.50	30.0	20.0	40.0	0.0	
2	3.50	4.50	30.0	20.0	40.0	0.0	
3	3.50	4.50	30.0	20.0	40.0	0.0	
4	3.50	4.50	30.0	20.0	40.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1	0.628	1473
2	0.628	1473
3	0.628	1473
4	0.628	1473

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCE Factor for a Truck (PCE)
✓	✓	Truck Percentages	2.00

Demand overview (Traffic)

Leg	Linked leg	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	361	100.000
2		ONE HOUR	✓	171	100.000
3		ONE HOUR	✓	318	100.000
4		ONE HOUR	✓	90	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	22	277	62
	2	27	0	119	25
	3	230	88	0	0
	4	70	20	0	0

Vehicle Mix

Truck Percentages

		To			
		1	2	3	4
From	1	0	13	4	0
	2	0	0	5	0
	3	4	4	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Intersection Arrivals (Veh)
1	0.30	3.80	0.4	1.7	A	331	497
2	0.16	3.59	0.2	0.5	A	157	235
3	0.26	3.63	0.4	1.5	A	292	438
4	0.08	3.19	0.1	0.5	A	83	124

Main Results for each time segment

08:00 - 08:15

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	272	68	81	1368	0.199	271	245	0.0	0.2	3.278	A
2	129	32	254	1264	0.102	128	98	0.0	0.1	3.167	A
3	239	60	86	1365	0.175	239	297	0.0	0.2	3.195	A
4	68	17	259	1305	0.052	68	65	0.0	0.1	2.909	A

08:15 - 08:30

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	325	81	97	1358	0.239	324	294	0.2	0.3	3.483	A
2	154	38	305	1233	0.125	154	117	0.1	0.1	3.335	A
3	286	71	102	1355	0.211	286	356	0.2	0.3	3.367	A
4	81	20	310	1271	0.064	81	78	0.1	0.1	3.023	A

08:30 - 08:45

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	397	99	119	1344	0.296	397	360	0.3	0.4	3.798	A
2	188	47	373	1190	0.158	188	143	0.1	0.2	3.593	A
3	350	88	125	1341	0.261	350	436	0.3	0.4	3.632	A
4	99	25	379	1226	0.081	99	96	0.1	0.1	3.193	A

08:45 - 09:00

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	397	99	119	1344	0.296	397	360	0.4	0.4	3.801	A
2	188	47	373	1190	0.158	188	143	0.2	0.2	3.593	A
3	350	88	126	1341	0.261	350	436	0.4	0.4	3.633	A
4	99	25	380	1226	0.081	99	96	0.1	0.1	3.194	A

09:00 - 09:15

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	325	81	97	1358	0.239	325	294	0.4	0.3	3.489	A
2	154	38	305	1232	0.125	154	117	0.2	0.1	3.340	A
3	286	71	103	1355	0.211	286	356	0.4	0.3	3.369	A
4	81	20	311	1271	0.064	81	78	0.1	0.1	3.024	A

09:15 - 09:30

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	272	68	81	1368	0.199	272	246	0.3	0.2	3.286	A
2	129	32	255	1264	0.102	129	98	0.1	0.1	3.174	A
3	239	60	86	1365	0.175	240	298	0.3	0.2	3.202	A
4	68	17	260	1304	0.052	68	66	0.1	0.1	2.911	A

Queue Variation Results for each time segment

08:00 - 08:15

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.25	0.00	0.00	0.25	0.25			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.05	0.00	0.00	0.05	0.05			N/A	N/A

08:15 - 08:30

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2	0.14	0.00	0.00	0.14	0.14			N/A	N/A
3	0.27	0.00	0.00	0.27	0.27			N/A	N/A
4	0.07	0.03	0.25	0.45	0.48			N/A	N/A

08:30 - 08:45

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2	0.19	0.03	0.25	0.46	0.48			N/A	N/A
3	0.35	0.03	0.25	0.45	0.48			N/A	N/A
4	0.09	0.03	0.26	0.47	0.49			N/A	N/A

08:45 - 09:00

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.03	0.32	1.33	1.66			N/A	N/A
2	0.19	0.03	0.25	0.45	0.48			N/A	N/A
3	0.35	0.03	0.32	1.19	1.47			N/A	N/A
4	0.09	0.00	0.00	0.09	0.09			N/A	N/A

09:00 - 09:15

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2	0.14	0.00	0.00	0.14	0.14			N/A	N/A
3	0.27	0.00	0.00	0.27	0.27			N/A	N/A
4	0.07	0.00	0.00	0.07	0.07			N/A	N/A

09:15 - 09:30

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.25	0.00	0.00	0.25	0.25			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.06	0.00	0.00	0.06	0.06			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: F_2042_PM.j9
Path: C:\Users\abagherichimeh\Desktop\Kingsville
Report generation date: 3/28/2023 2:09:09 AM

«2042, PM
»Intersection Network
»Legs
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of intersection performance

	PM						
	Queue (Veh)	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
	2042						
Leg 1	0.7	1.7	4.64	0.40	A	4.74	A
Leg 2	0.2	1.0	3.83	0.20	A		
Leg 3	1.0	1.4	5.29	0.49	A		
Leg 4	0.1	0.5	4.03	0.13	A		

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

File summary

File Description

Title	
Location	
Site number	
Date	11/21/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	CORP\abagherichimeh
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
5.75	✓			0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2042	PM	PHF	17:00	18:00	15	✓

2042, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Intersection Network

Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.74	A

Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

Legs

Legs

Leg	Name	Description
1	Main St	
2	Heritage Rd	
3	Main St	
4	Heritage Rd	

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	4.50	30.0	20.0	40.0	0.0	
2	3.50	4.50	30.0	20.0	40.0	0.0	
3	3.50	4.50	30.0	20.0	40.0	0.0	
4	3.50	4.50	30.0	20.0	40.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1	0.628	1473
2	0.628	1473
3	0.628	1473
4	0.628	1473

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCE Factor for a Truck (PCE)
✓	✓	Truck Percentages	2.00

Demand overview (Traffic)

Leg	Linked leg	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		PHF	✓	483	100.000
2		PHF	✓	213	100.000
3		PHF	✓	602	100.000
4		PHF	✓	121	100.000

Peak Hour Factor Data (Traffic)

Leg	Hourly volume (Veh/hr)	Peak hour factor	Peak time segment
1	483	0.92	SecondQuarter
2	213	0.92	SecondQuarter
3	602	0.92	SecondQuarter
4	121	0.92	SecondQuarter

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	62	323	98
	2	49	0	127	37
	3	428	174	0	0
	4	92	29	0	0

Vehicle Mix

Truck Percentages

		To			
		1	2	3	4
From	1	0	4	3	0
	2	3	0	0	0
	3	1	1	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Intersection Arrivals (Veh)
1	0.40	4.64	0.7	1.7	A	483	483
2	0.20	3.83	0.2	1.0	A	213	213
3	0.49	5.29	1.0	1.4	A	602	602
4	0.13	4.03	0.1	0.5	A	121	121

Main Results for each time segment

17:00 - 17:15

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	190	1319	0.345	453	533	0.0	0.5	4.144	A
2	201	50	395	1211	0.166	200	248	0.0	0.2	3.560	A
3	567	142	173	1350	0.420	564	422	0.0	0.7	4.563	A
4	114	28	610	1086	0.105	114	127	0.0	0.1	3.701	A

17:15 - 17:30

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	525	131	220	1301	0.404	524	618	0.5	0.7	4.637	A
2	232	58	457	1171	0.198	231	288	0.2	0.2	3.829	A
3	654	164	200	1333	0.491	653	489	0.7	1.0	5.286	A
4	132	33	707	1024	0.128	131	147	0.1	0.1	4.032	A

17:30 - 17:45

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	497	124	209	1308	0.380	497	586	0.7	0.6	4.441	A
2	219	55	433	1187	0.185	219	273	0.2	0.2	3.724	A
3	619	155	189	1340	0.462	620	463	1.0	0.9	5.003	A
4	125	31	670	1047	0.119	125	139	0.1	0.1	3.902	A

17:45 - 18:00

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	191	1319	0.345	455	536	0.6	0.5	4.172	A
2	201	50	397	1210	0.166	201	250	0.2	0.2	3.567	A
3	567	142	173	1350	0.420	568	424	0.9	0.7	4.607	A
4	114	28	614	1083	0.105	114	127	0.1	0.1	3.713	A

Queue Variation Results for each time segment

17:00 - 17:15

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.52	0.52	1.00	1.40	1.45			N/A	N/A
2	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3	0.72	0.15	0.90	1.38	1.44			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

17:15 - 17:30

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.67	0.03	0.25	0.67	0.67			N/A	N/A
2	0.25	0.03	0.25	0.46	0.48			N/A	N/A
3	0.95	0.03	0.26	0.95	0.95			N/A	N/A
4	0.15	0.03	0.26	0.46	0.49			N/A	N/A

17:30 - 17:45

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.62	0.03	0.27	0.62	1.65			N/A	N/A
2	0.23	0.03	0.28	0.50	0.96			N/A	N/A
3	0.87	0.03	0.26	0.87	0.87			N/A	N/A
4	0.14	0.03	0.25	0.45	0.48			N/A	N/A

17:45 - 18:00

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.53	0.53	1.00	1.40	1.45			N/A	N/A
2	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3	0.73	0.49	0.97	1.39	1.45			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: F_2042_SAT.j9
Path: C:\Users\abagherichimeh\Desktop\Kingsville
Report generation date: 3/28/2023 2:27:17 AM

«2042, SAT
»Intersection Network
»Legs
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

Summary of intersection performance

	SAT						
	Queue (Veh)	95% Queue (Veh)	Delay (s)	V/C Ratio	LOS	Intersection Delay (s)	Intersection LOS
2042							
Leg 1	0.6	2.7	4.41	0.39	A	4.49	A
Leg 2	0.2	0.7	3.79	0.19	A		
Leg 3	0.8	2.1	4.95	0.45	A		
Leg 4	0.1	0.5	3.90	0.13	A		

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Intersection LOS and Intersection Delay are demand-weighted averages.

File summary

File Description

Title	
Location	
Site number	
Date	11/21/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Analyst	CORP\abagherichimeh
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	V/C Ratio Threshold	Average Delay threshold (s)	Queue threshold (PCE)
5.75	✓			0.85	36.00	20.00

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2042	SAT	ONE HOUR	16:00	17:30	15	✓

2042, SAT

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Intersection Network

Intersections

Intersection	Name	Intersection type	Use circulating lanes	Leg order	Intersection Delay (s)	Intersection LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.49	A

Intersection Network Options

Driving side	Lighting
Right	Normal/unknown

Legs

Legs

Leg	Name	Description
1	Main St	
2	Heritage Rd	
3	Main St	
4	Heritage Rd	

Roundabout Geometry

Leg	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	4.50	30.0	20.0	40.0	0.0	
2	3.50	4.50	30.0	20.0	40.0	0.0	
3	3.50	4.50	30.0	20.0	40.0	0.0	
4	3.50	4.50	30.0	20.0	40.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Leg	Final slope	Final intercept (PCE/hr)
1	0.628	1473
2	0.628	1473
3	0.628	1473
4	0.628	1473

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCE Factor for a Truck (PCE)
✓	✓	Truck Percentages	2.00

Demand overview (Traffic)

Leg	Linked leg	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	466	100.000
2		ONE HOUR	✓	206	100.000
3		ONE HOUR	✓	551	100.000
4		ONE HOUR	✓	122	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	39	337	90
	2	38	0	134	34
	3	395	156	0	0
	4	94	28	0	0

Vehicle Mix

Truck Percentages

		To			
		1	2	3	4
From	1	0	4	1	0
	2	0	0	0	0
	3	2	2	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Leg	Max V/C Ratio	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Intersection Arrivals (Veh)
1	0.39	4.41	0.6	2.7	A	428	641
2	0.19	3.79	0.2	0.7	A	189	284
3	0.45	4.95	0.8	2.1	A	506	758
4	0.13	3.90	0.1	0.5	A	112	168

Main Results for each time segment

16:00 - 16:15

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	351	88	138	1371	0.256	349	395	0.0	0.3	3.521	A
2	155	39	320	1270	0.122	155	167	0.0	0.1	3.224	A
3	415	104	122	1369	0.303	413	353	0.0	0.4	3.758	A
4	92	23	442	1191	0.077	92	93	0.0	0.1	3.275	A

16:15 - 16:30

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	419	105	165	1353	0.310	419	473	0.3	0.4	3.849	A
2	185	46	383	1230	0.151	185	200	0.1	0.2	3.443	A
3	495	124	146	1355	0.366	495	423	0.4	0.6	4.183	A
4	110	27	529	1135	0.097	110	111	0.1	0.1	3.511	A

16:30 - 16:45

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	513	128	202	1330	0.386	512	579	0.4	0.6	4.399	A
2	227	57	469	1176	0.193	227	245	0.2	0.2	3.791	A
3	607	152	178	1335	0.455	606	518	0.6	0.8	4.931	A
4	134	34	647	1059	0.127	134	136	0.1	0.1	3.893	A

16:45 - 17:00

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	513	128	203	1330	0.386	513	580	0.6	0.6	4.407	A
2	227	57	470	1176	0.193	227	246	0.2	0.2	3.793	A
3	607	152	178	1334	0.455	607	519	0.8	0.8	4.945	A
4	134	34	648	1058	0.127	134	137	0.1	0.1	3.896	A

17:00 - 17:15

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	419	105	166	1353	0.310	420	475	0.6	0.5	3.859	A
2	185	46	385	1230	0.151	185	201	0.2	0.2	3.449	A
3	495	124	146	1354	0.366	496	424	0.8	0.6	4.201	A
4	110	27	531	1134	0.097	110	112	0.1	0.1	3.515	A

17:15 - 17:30

Leg	Total Demand (Veh/hr)	Intersection Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	V/C Ratio	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	351	88	139	1370	0.256	351	397	0.5	0.3	3.534	A
2	155	39	322	1269	0.122	155	168	0.2	0.1	3.233	A
3	415	104	122	1369	0.303	415	355	0.6	0.4	3.775	A
4	92	23	444	1189	0.077	92	93	0.1	0.1	3.280	A

Queue Variation Results for each time segment

16:00 - 16:15

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2	0.14	0.00	0.00	0.14	0.14			N/A	N/A
3	0.43	0.00	0.00	0.43	0.43			N/A	N/A
4	0.08	0.00	0.00	0.08	0.08			N/A	N/A

16:15 - 16:30

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3	0.57	0.09	0.82	1.36	1.43			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

16:30 - 16:45

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2	0.24	0.03	0.25	0.46	0.48			N/A	N/A
3	0.83	0.03	0.25	0.83	0.83			N/A	N/A
4	0.14	0.03	0.26	0.46	0.49			N/A	N/A

16:45 - 17:00

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.63	0.03	0.29	1.07	2.68			N/A	N/A
2	0.24	0.03	0.27	0.48	0.69			N/A	N/A
3	0.83	0.03	0.27	0.83	2.09			N/A	N/A
4	0.15	0.03	0.25	0.45	0.48			N/A	N/A

17:00 - 17:15

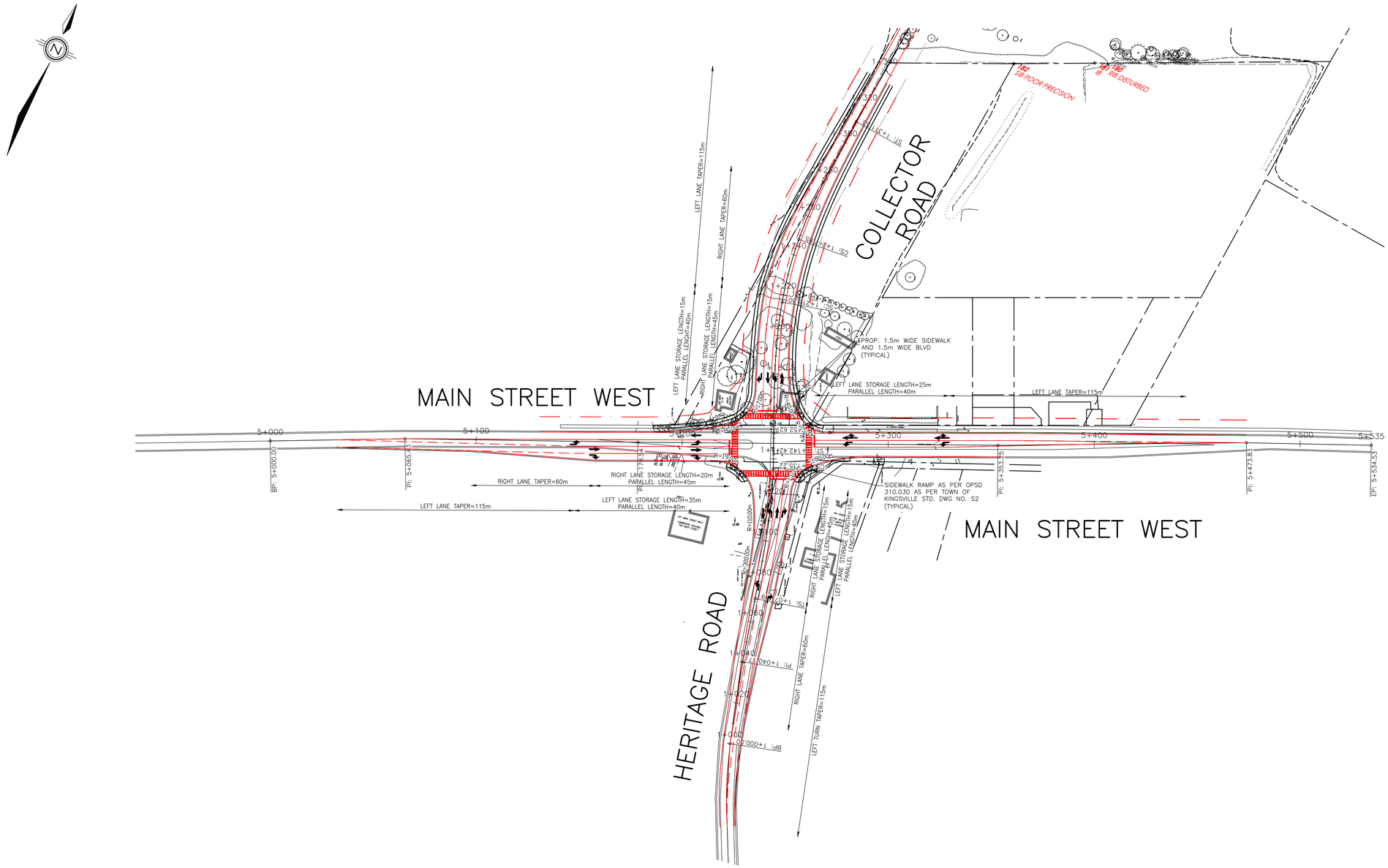
Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3	0.58	0.55	1.00	1.40	1.45			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

17:15 - 17:30

Leg	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2	0.14	0.00	0.00	0.14	0.14			N/A	N/A
3	0.44	0.00	0.00	0.44	0.44			N/A	N/A
4	0.08	0.00	0.00	0.08	0.08			N/A	N/A

APPENDIX H

Proposed Layout



HERITAGE ROAD AND MAIN STREET WEST SIGNALIZED INTERSECTION

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
165001284	

No.	REVISIONS	DATE	CONSULTANT
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SCALE
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HORIZONTAL

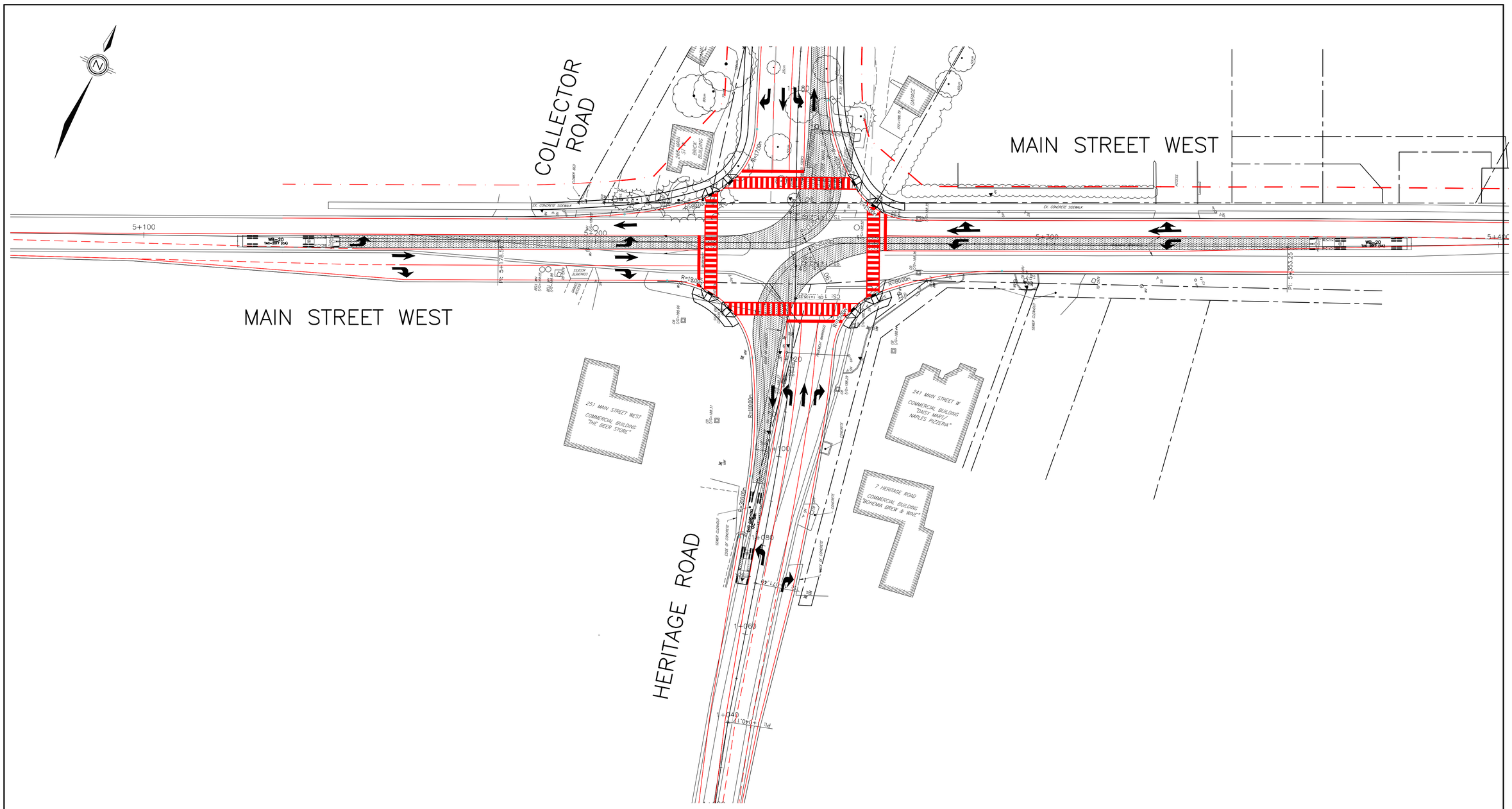
TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
PROPOSED CONDITIONS

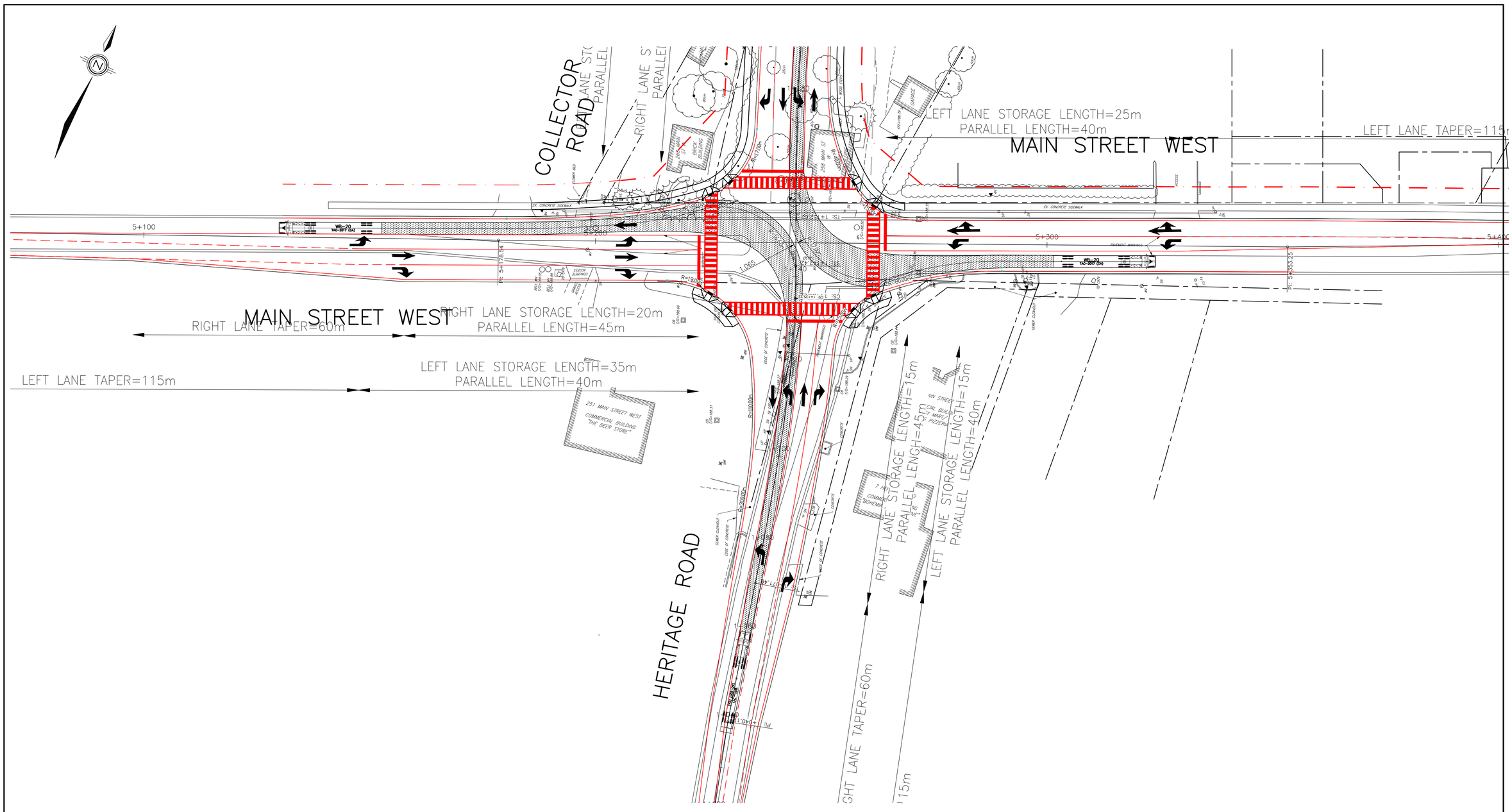
PROJECT No.

SHEET No.
3 OF 3

PLAN FILE No.

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3/27/2023 12:59:01 PM By:Moreau, Kel


COLLECTOR ROAD
MAIN STREET WEST
MAIN STREET WEST
HERITAGE ROAD
5+100
5+200
5+300
5+400
5+353.75
1+100
1+080
1+060
1+040
R=110.00m
R=190.00m
R=60.00m
251 MAIN STREET WEST
COMMERCIAL BUILDING
"THE BEER STORE"
741 MAIN STREET W
COMMERCIAL BUILDING
"DAISY MART /
NAPLES PIZZERIA"
7 HERITAGE ROAD
COMMERCIAL BUILDING
"BOHEMA BRICK & WINE"
2 STORY BRICK BUILDING
GARAGE
EX. CONCRETE SIDEWALK
SEWER CLEANOUT
EDGE OF CONCRETE
WEST EDGE OF CONCRETE
ACCESS
ACCESS BUILDING
PROPOSED CONCRETE
PROPOSED ASPHALT
PROPOSED CURB
PROPOSED SIDEWALK
PROPOSED ISLAND
PROPOSED PAVEMENT MARKING
PROPOSED SIGNAL POLE
PROPOSED PEDESTRIAN SIGNAL POLE
PROPOSED PEDESTRIAN CROSSOVER
PROPOSED PEDESTRIAN CROSSOVER SIGNAL POLE
PROPOSED PEDESTRIAN CROSSOVER SIGNAL HEAD
PROPOSED PEDESTRIAN CROSSOVER SIGN
PROPOSED PEDESTRIAN CROSSOVER PAVEMENT MARKING
PROPOSED PEDESTRIAN CROSSOVER CURB RAMP
PROPOSED PEDESTRIAN CROSSOVER CURB RAMP DETECTABLE WARNING SURFACE



HERITAGE ROAD AND MAIN STREET WEST SIGNALIZED INTERSECTION

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

No.	REVISIONS	DATE	CONSULTANT
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SCALE
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2.5m 0 5.0m
HORIZONTAL

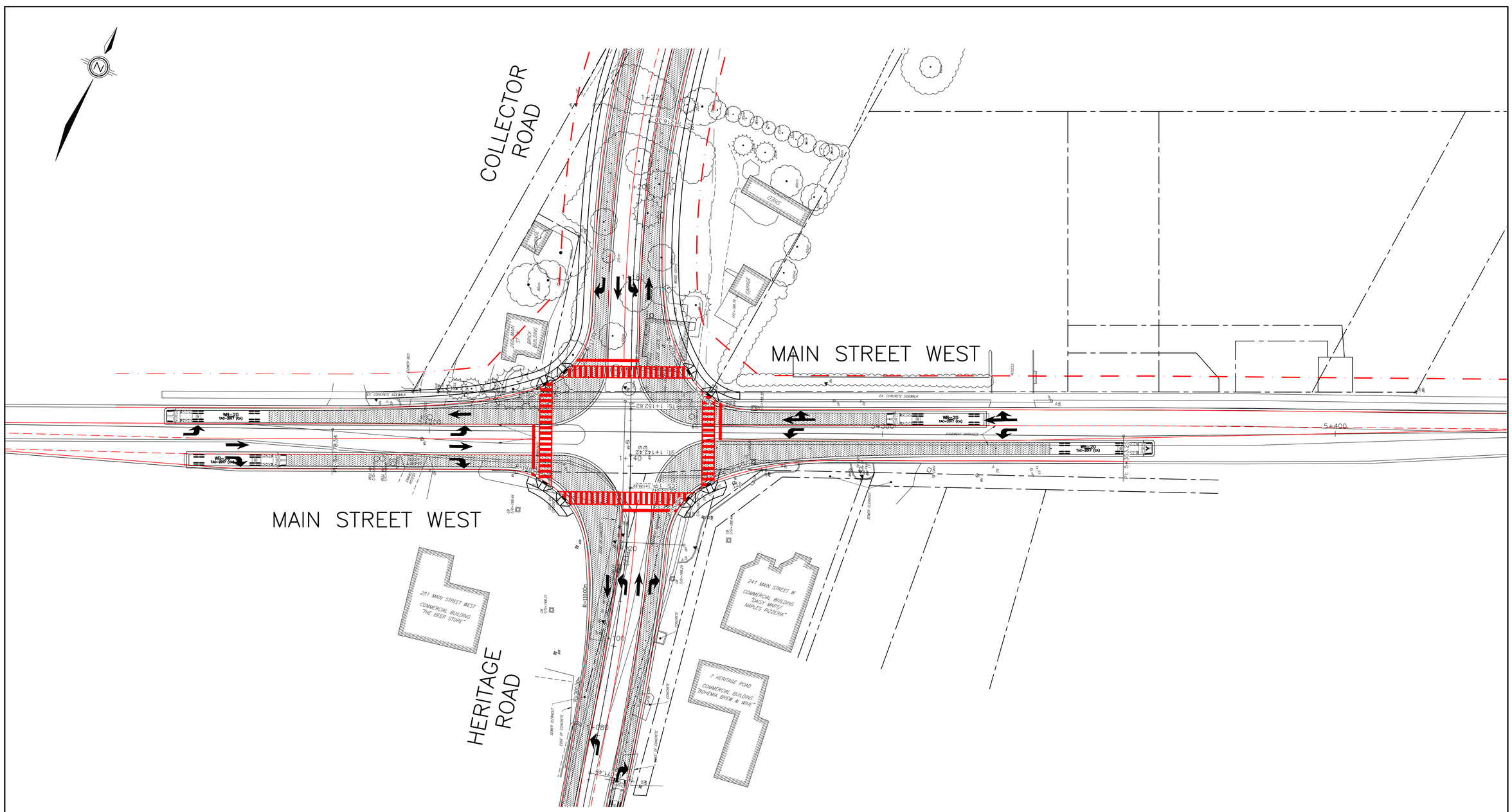
TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
PROPOSED CONDITIONS

PROJECT No.

SHEET No.
2 OF 3

PLAN FILE No.

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3/27/2023 12:38:08 PM by Mekenzie, Kel


COLLECTOR ROAD
MAIN STREET WEST
MAIN STREET WEST
HERITAGE ROAD
251 MAIN STREET WEST
COMMERCIAL BUILDING
"THE BEER STORE"
241 MAIN STREET W
COMMERCIAL BUILDING
"TASTY MART /
MAPLES PIZZERIA"
7 HERITAGE ROAD
COMMERCIAL BUILDING
"BOHEMIA BREW & WINE"
EX. CONCRETE SIDEWALK
EX. CONCRETE SIDEWALK
WB-20
TAC-2017 (GA)
WB-20
TAC-2017 (GA)
WB-20
TAC-2017 (GA)
WB-20
TAC-2017 (GA)
1+220
1+200
1+180
1+160
1+140
1+120
1+100
1+080
5+300
5+400
R=11000m
R=11000m
ST. 1+152.62
ST. 1+142.42
78.34
18.0
18.0
18.0

Appendix H - Preliminary Design Drawings

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Cycle Track
- Proposed Crosswalk
- Proposed SWM Improvements
- Existing ROW
- Existing Sanitary Forcemain
- Proposed New ROW Limit
- Proposed Storm Sewer
- Proposed Watermain
- Proposed Sanitary Sewer
- Proposed Ditching

Note: Existing underground servicing location and alignment to be confirmed during Detail Design

LIMIT OF CONSTRUCTION

Proposed Sanitary Sewer Limits

Proposed Storm Sewer Limits

Proposed Watermain Limits

WEST SIDE COLLECTOR ROAD

PROPOSED ADVANCED DRAINAGE SYSTEM CHAMBERS

HERITAGE ROAD

MAIN STREET WEST

PROPOSED CONNECTOR ROAD C

LIMIT OF CONSTRUCTION

LIMIT OF CONSTRUCTION

LIMIT OF FUTURE DEVELOPMENT

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	CB
CHECKED	KE
APPROVED	KE
DATE	NOV 2023
	165001284

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SCALE
HORZ. 1:1000

10.0m 0 20.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
PRELIMINARY DESIGN DRAWINGS

PROJECT No.

SHEET No.
1 OF 3

PLAN FILE No.

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11/28/2023 4:55:45 PM by:Bondarewsk, Cole

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Cycle Track
- Proposed Crosswalk
- Proposed SWM Improvements
- Existing ROW
- Existing Sanitary Forcemain
- Proposed New ROW Limit
- Proposed Storm Sewer
- Proposed Watermain
- Proposed Sanitary Sewer
- Proposed Ditching

Note: Existing underground servicing location and alignment to be confirmed during Detail Design

SWALES WEST TO SWM POND

Proposed Sanitary Sewer Limits

Proposed Storm Sewer Limits

Proposed Watermain Limits

WEST SIDE COLLECTOR ROAD

PROPOSED CONNECTOR ROAD B

LIMIT OF CONSTRUCTION

LIMIT OF FUTURE DEVELOPMENT

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	CB
CHECKED	KE
APPROVED	KE
DATE	NOV 2023
	165001284

No.	REVISIONS	DATE	CONSULTANT
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ENGINEER'S STAMP

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SCALE
HORZ. 1:1000
10.0m 0 20.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
PRELIMINARY DESIGN DRAWINGS

PROJECT No.

SHEET No.
2 OF 3

PLAN FILE No.

\\cd2217-pprfs01\work_group\01650\active\165001284\design\drawing\10-t_sheet_files\05_rev\165001284_NC-Prelim.dwg
11/29/2023 4:08:34 PM by Bondarowski, Cole

Supplemental Legend:

- Proposed Roadway Platform
- Proposed Sidewalk/Median/Curb
- Proposed Boulevard/Green Space
- Proposed Cycle Track
- Proposed Crosswalk
- Proposed SWM Improvements
- Existing ROW
- Existing Sanitary Forcemain
- Proposed New ROW Limit
- Proposed Storm Sewer
- Proposed Watermain
- Proposed Sanitary Sewer
- Proposed Ditching

Note: Existing underground servicing location and alignment to be confirmed during Detail Design

Proposed Sanitary Sewer Limits

Proposed Storm Sewer Limits

Proposed Watermain Limits

LIMIT OF CONSTRUCTION

LIMIT OF FUTURE DEVELOPMENT

WEST SIDE COLLECTOR ROAD

ROAD 2 WEST

PROPOSED CONNECTOR ROAD A

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	CB
CHECKED	KE
APPROVED	KE
DATE	NOV 2023

165001284

No.	REVISIONS	DATE	CONSULTANT
1.	ISSUED FOR PRELIMINARY DESIGN	NOV 28, 2023	STANTEC

CONSULTANT OR DIVISION

Stantec

600 - 171 Queens Avenue
London, ON, N6A 5J7
www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
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ENGINEER'S STAMP

Kingsville ONTARIO

SCALE
HORZ. 1:1000

10.0m 0 20.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
PRELIMINARY DESIGN DRAWINGS

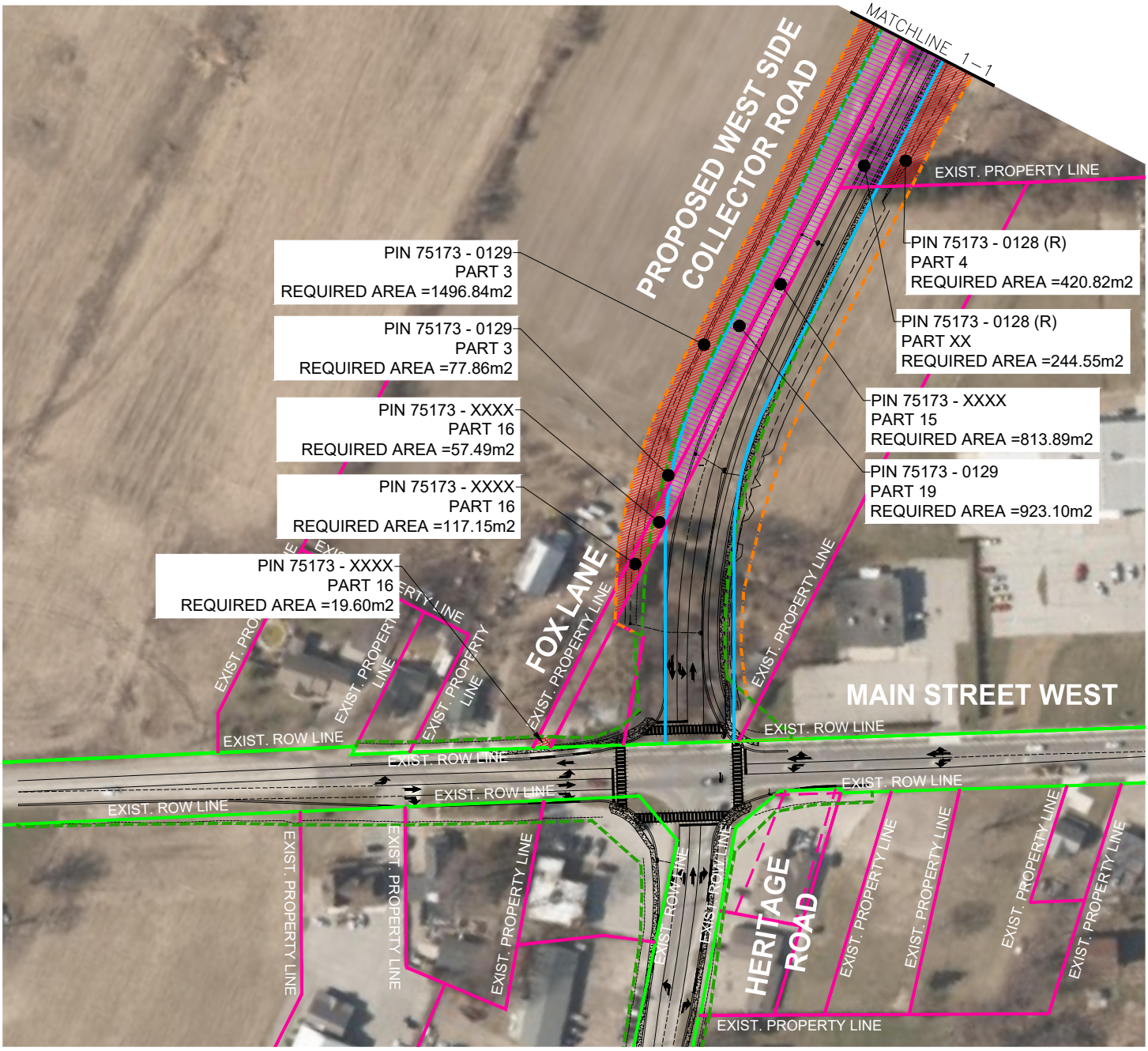
PROJECT No.

SHEET No.
3 OF 3

PLAN FILE No.

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11/28/2023 4:08:57 PM by:Bondarowski, Cole

Appendix I - Property Plans



LEGEND:

- EXISTING ROW LIMIT:
- PREVIOUS ROW LIMIT:
- PROPOSED ROW LIMIT:
- EXISTING PROPERTY/LOT LINE:
- PROPOSED TEMP. EASEMENT:
- PROPERTY UNDER AQUISITION:
- ADDITIONAL PROPETY REQUIRED:
- PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
is north of Hertage Road and Main Street West

Kingsville ONTARIO

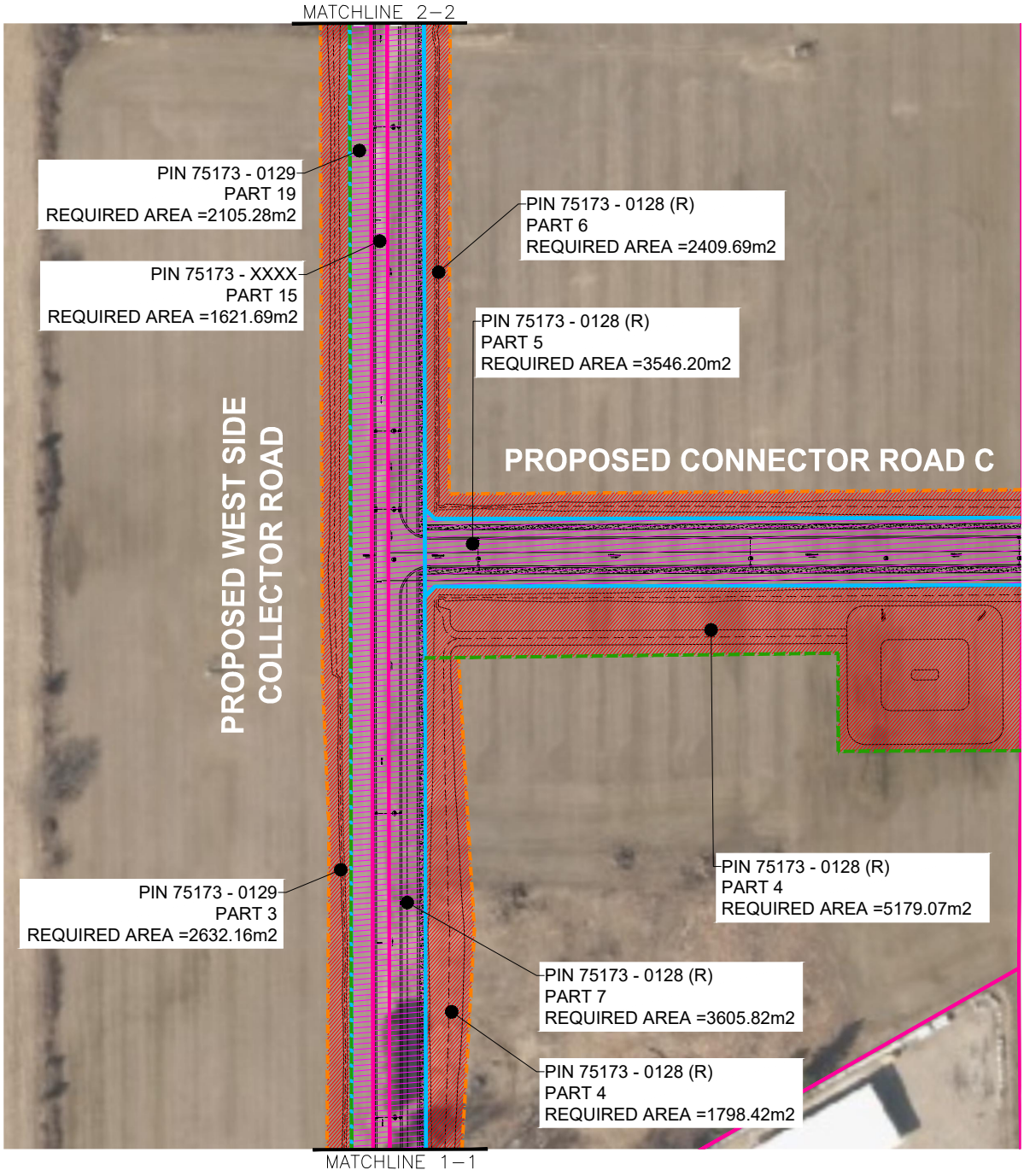
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
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Signature of acknowledgement:

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Kingsville ONTARIO

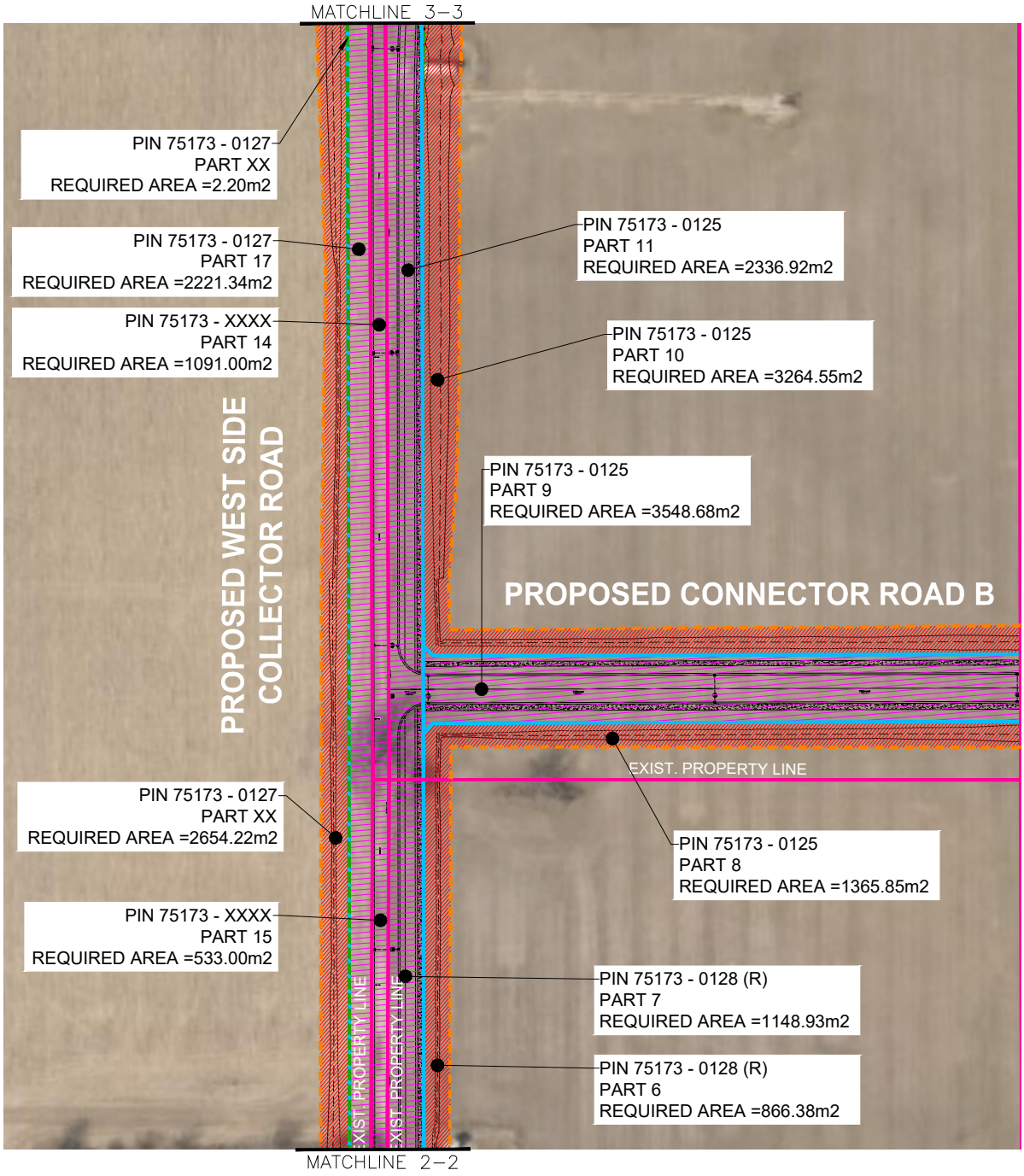
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

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Signature of acknowledgement:

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Kingsville ONTARIO

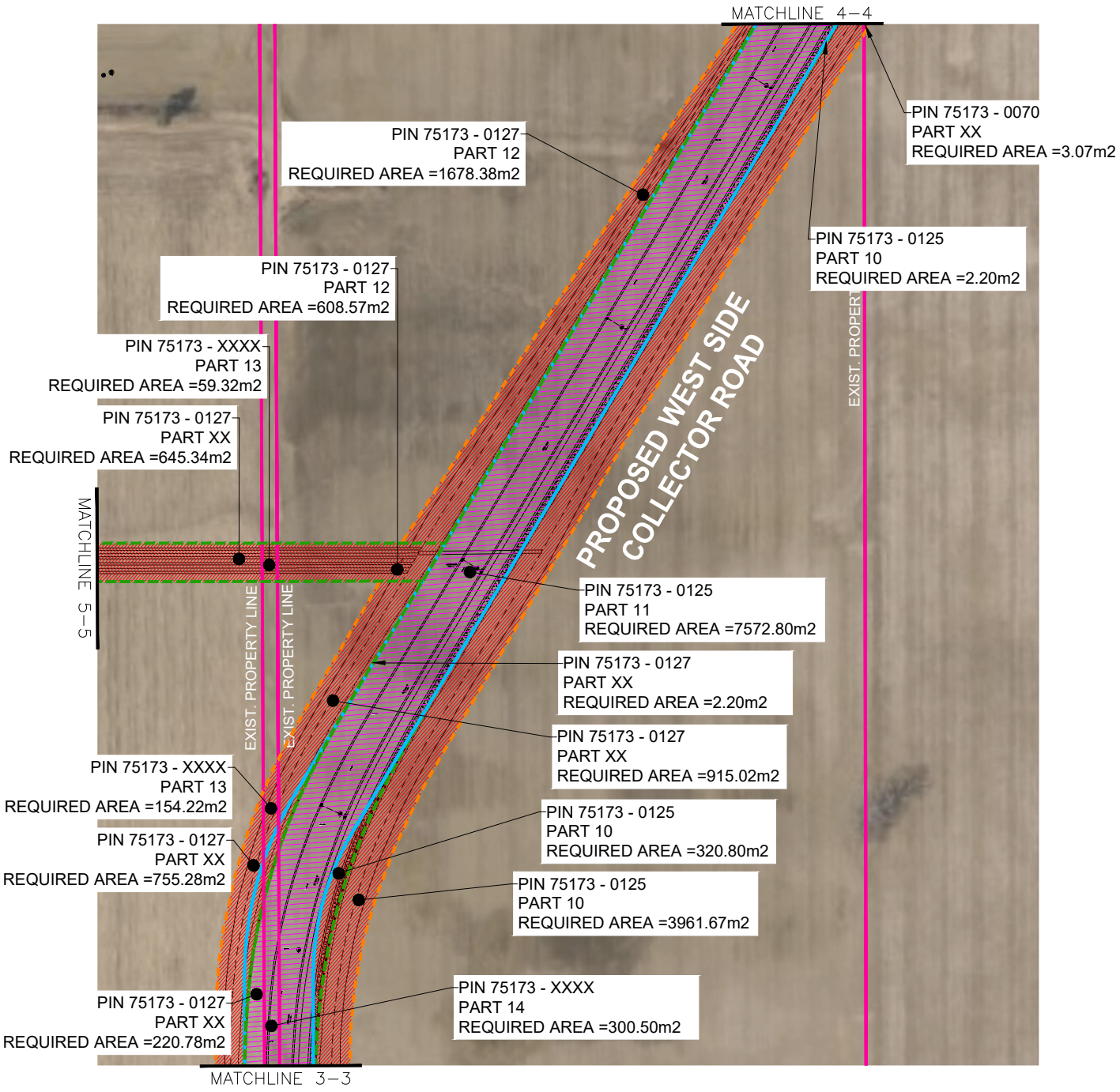
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
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Kingsville ONTARIO

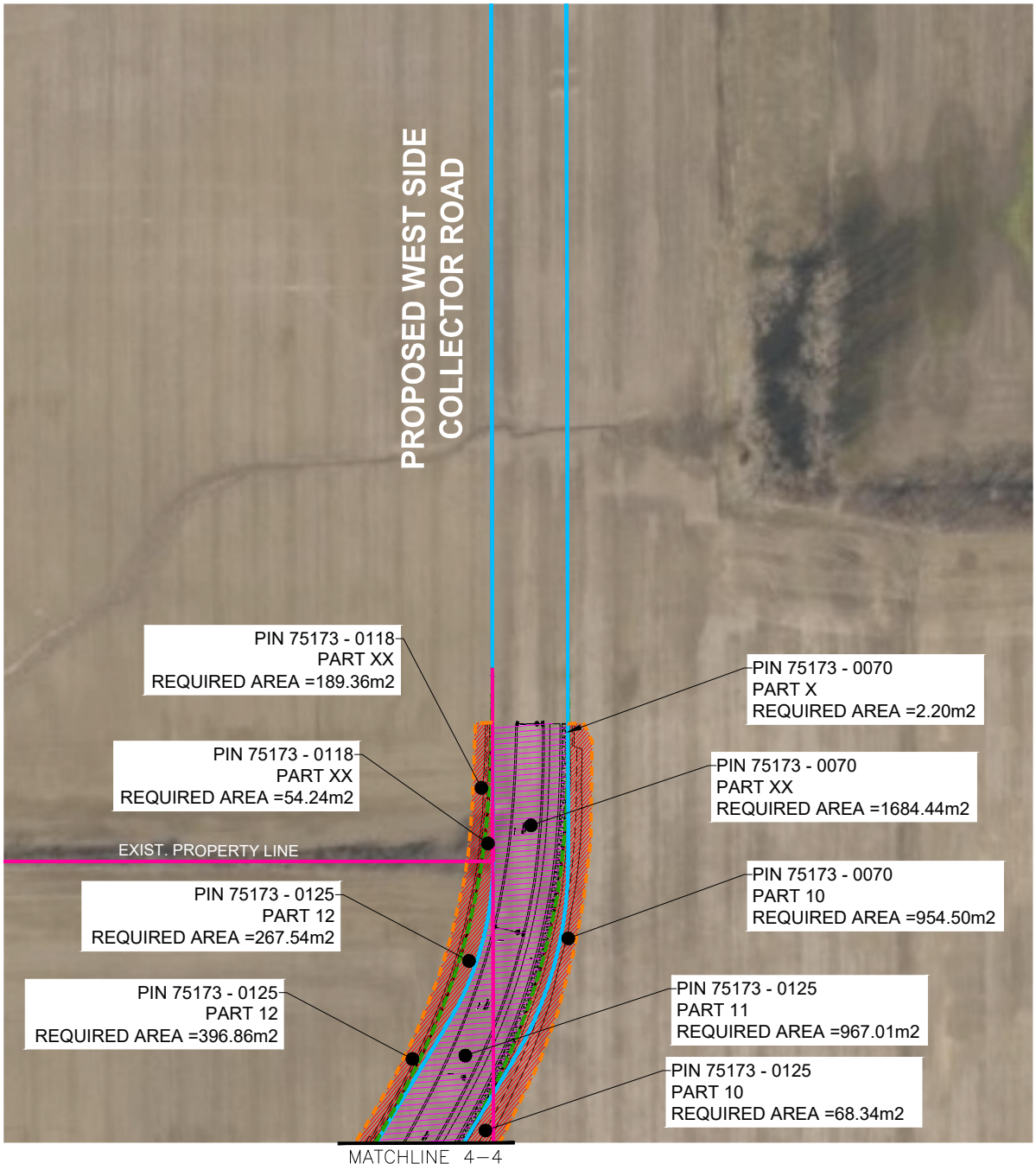
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

- EXISTING ROW LIMIT:
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Kingsville ONTARIO

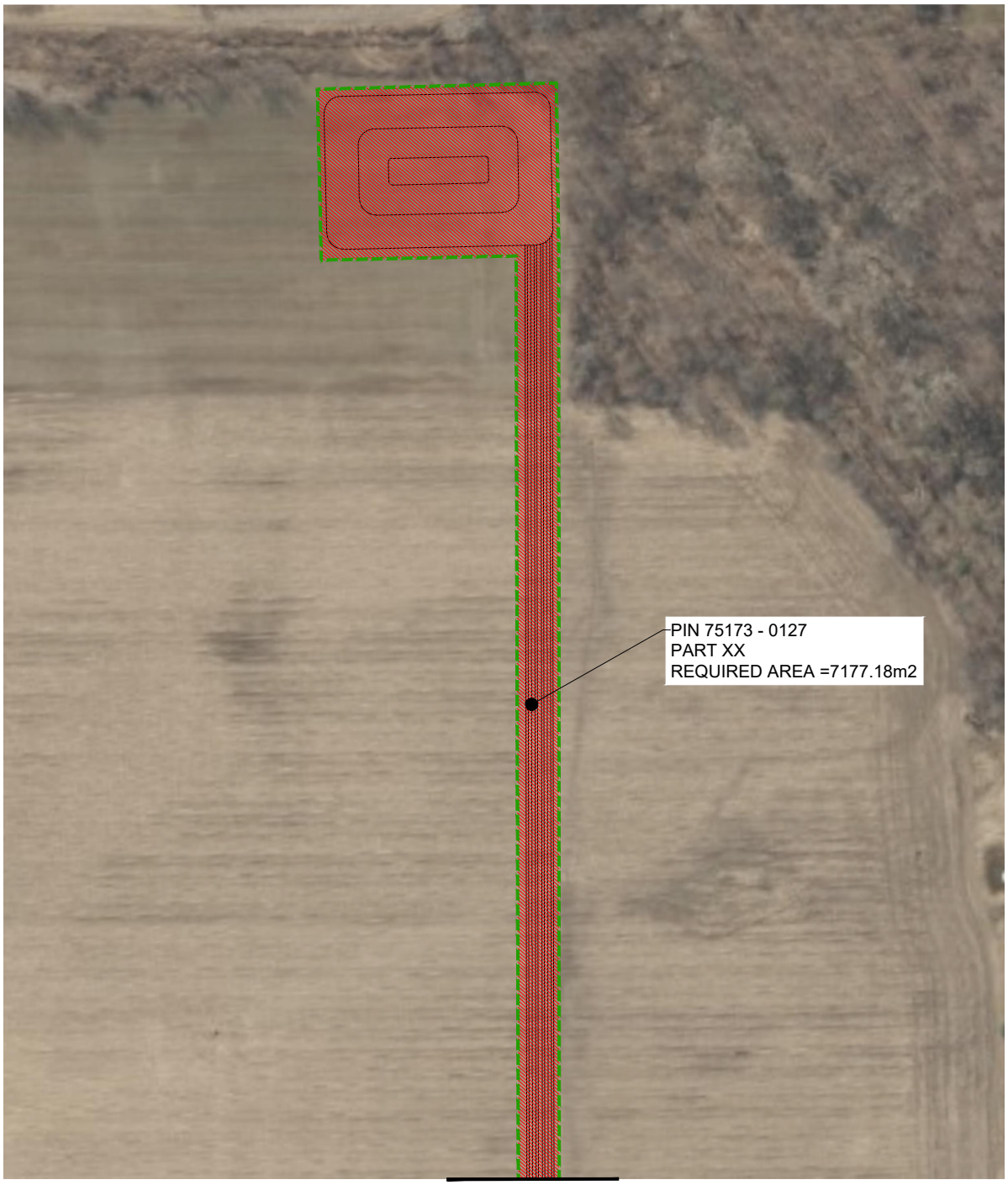
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

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Kingsville ONTARIO

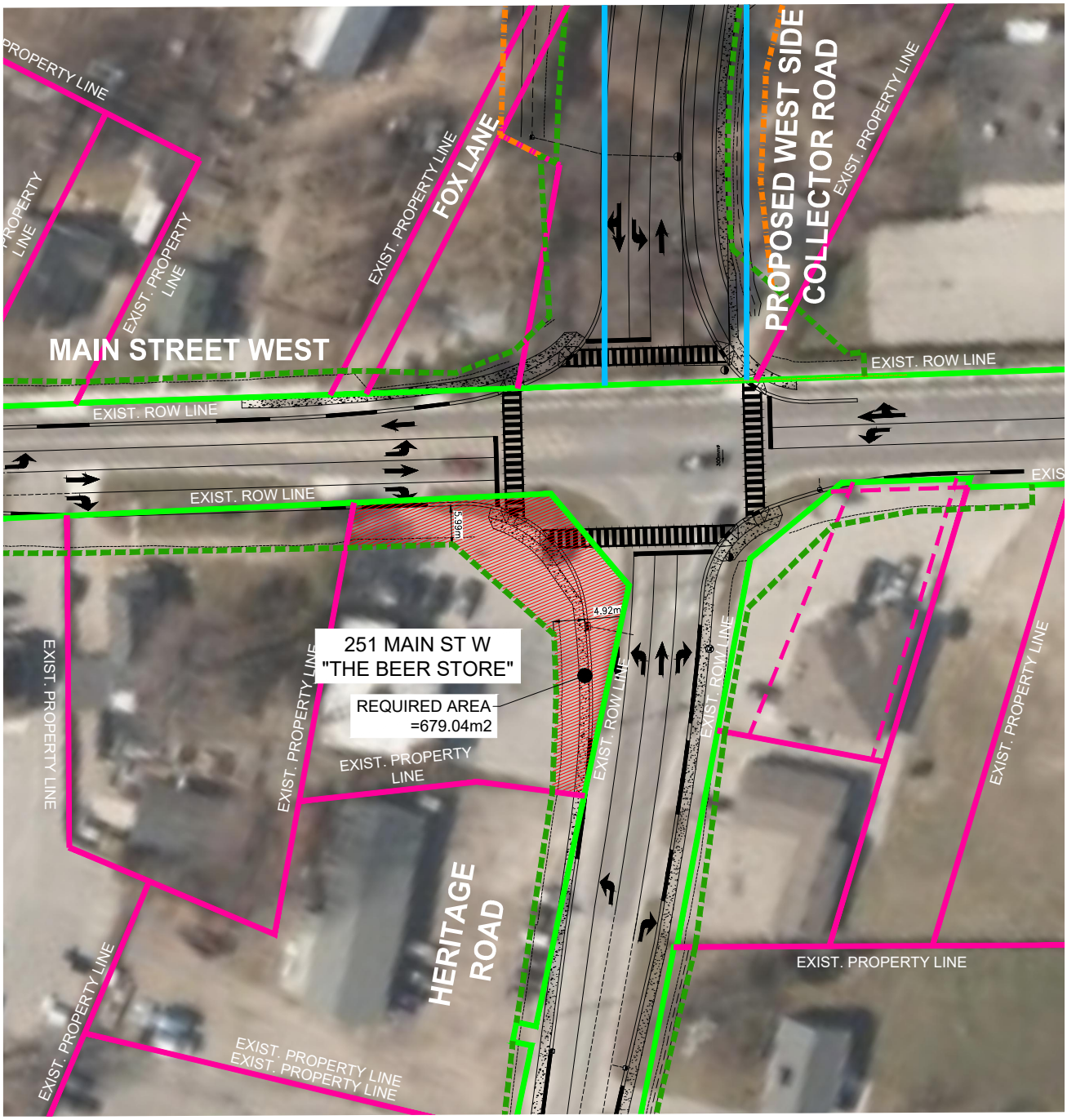
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

Collector Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
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EXISTING PROPERTY/LOT LINE:
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PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south west side Main Street West
at Heritage Road

Kingsville ONTARIO

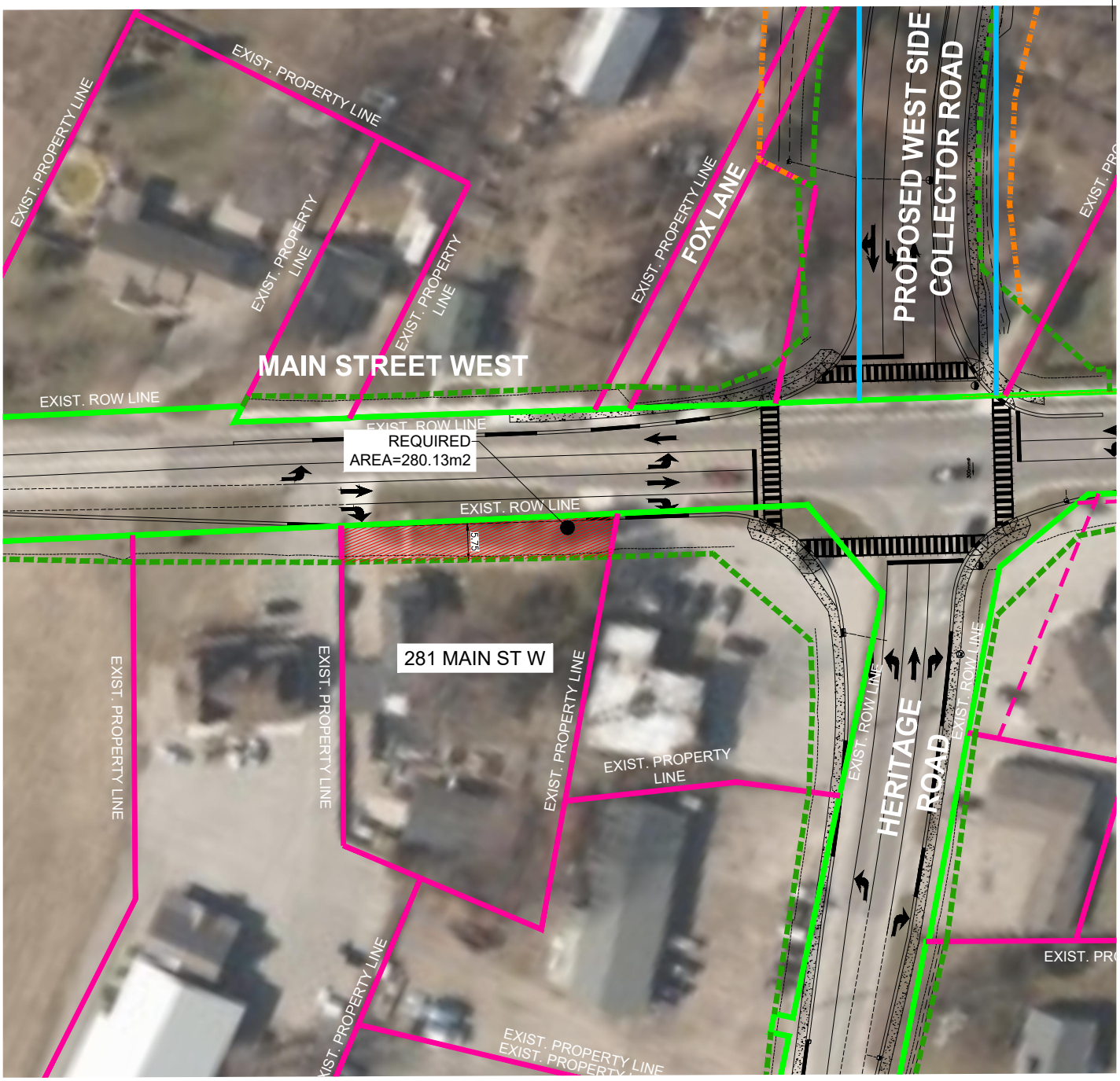
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

251 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south west side Main Street West
at Heritage Road

Kingsville ONTARIO

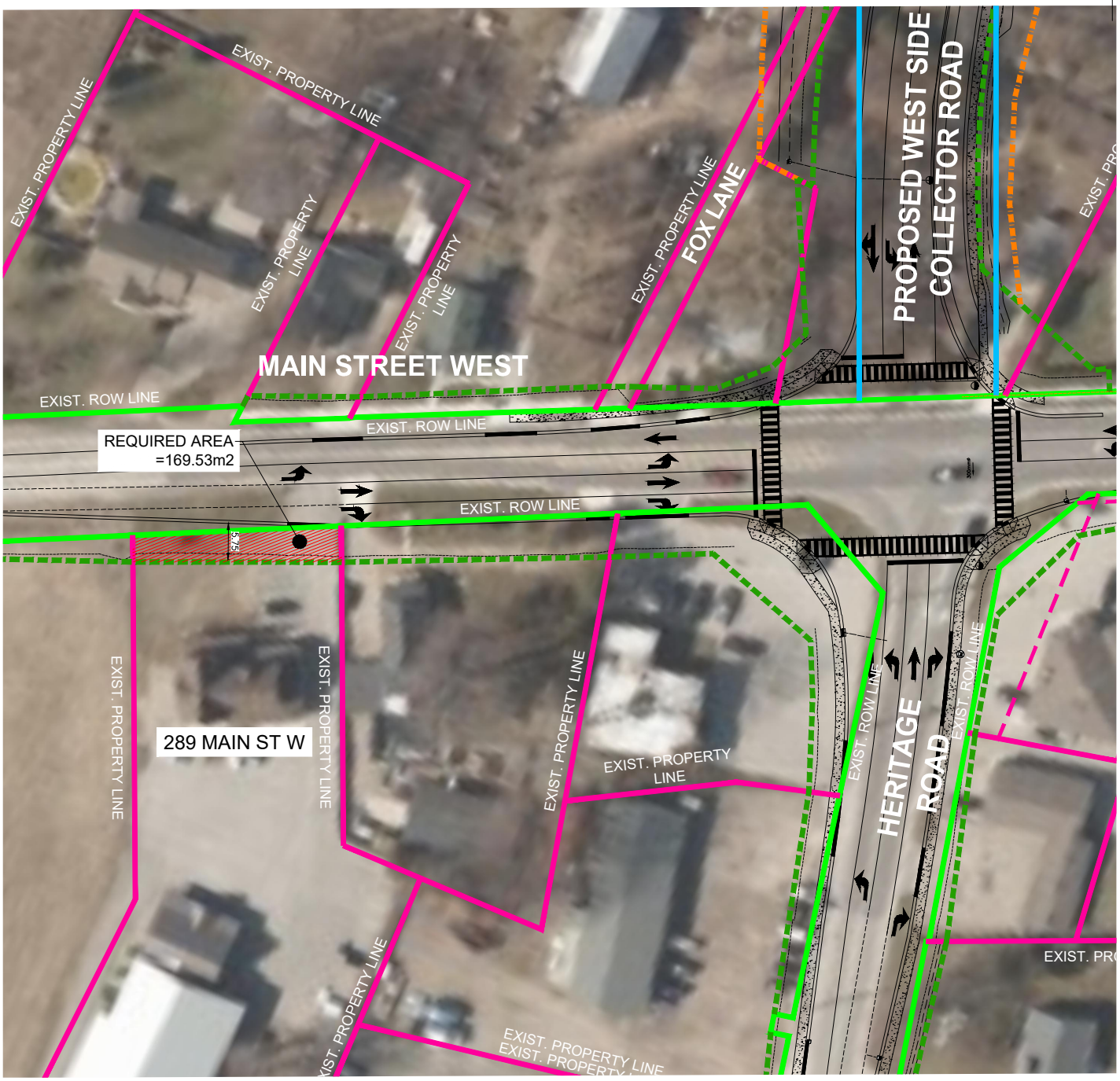
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

281 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south west side Main Street West
at Heritage Road

Kingsville ONTARIO

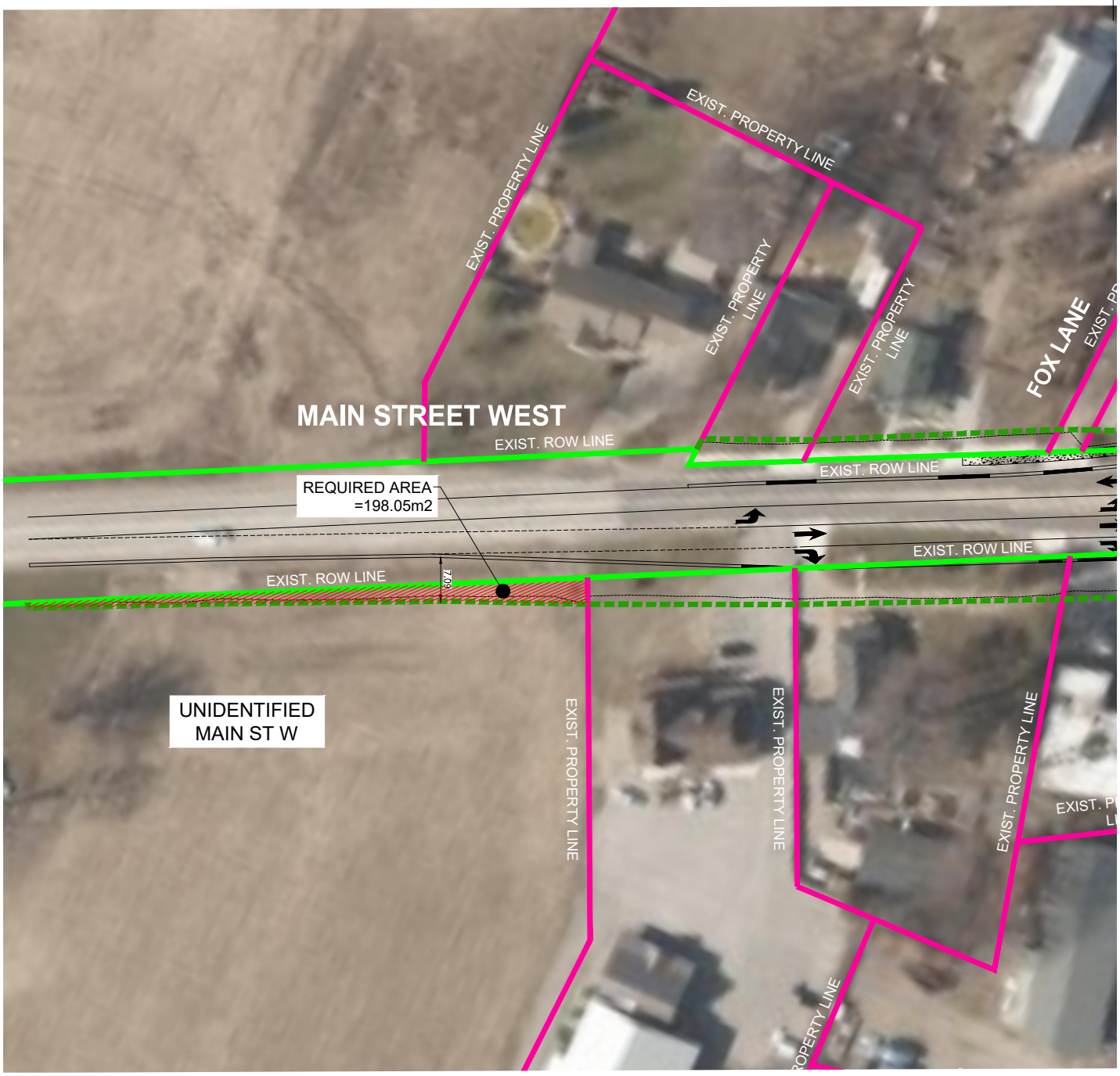
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

289 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south west side Main Street West
at Heritage Road

Kingsville ONTARIO

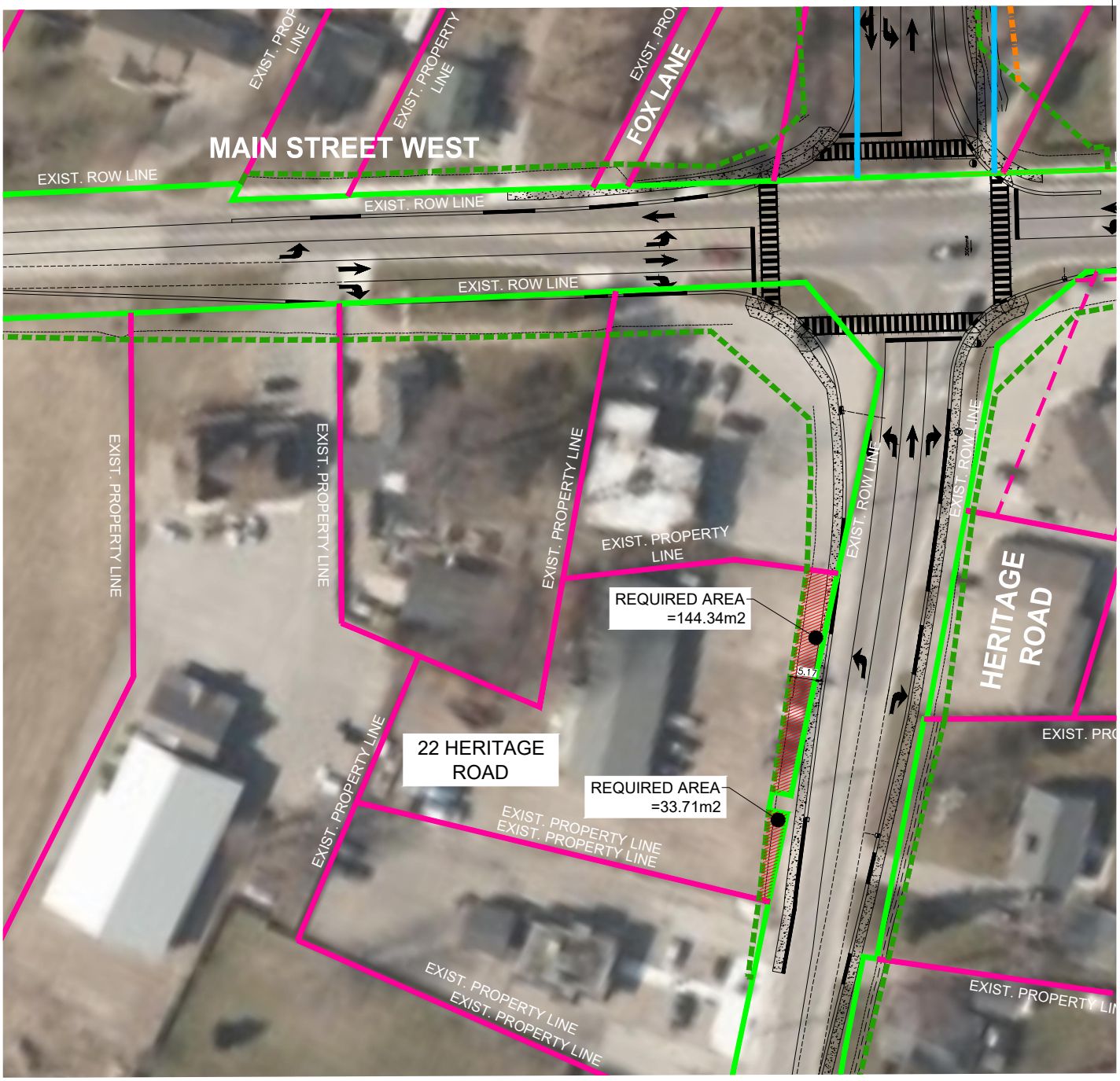
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

UNIDENTIFIED Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the west side of Heritage Road
south of Main Street West

Kingsville ONTARIO

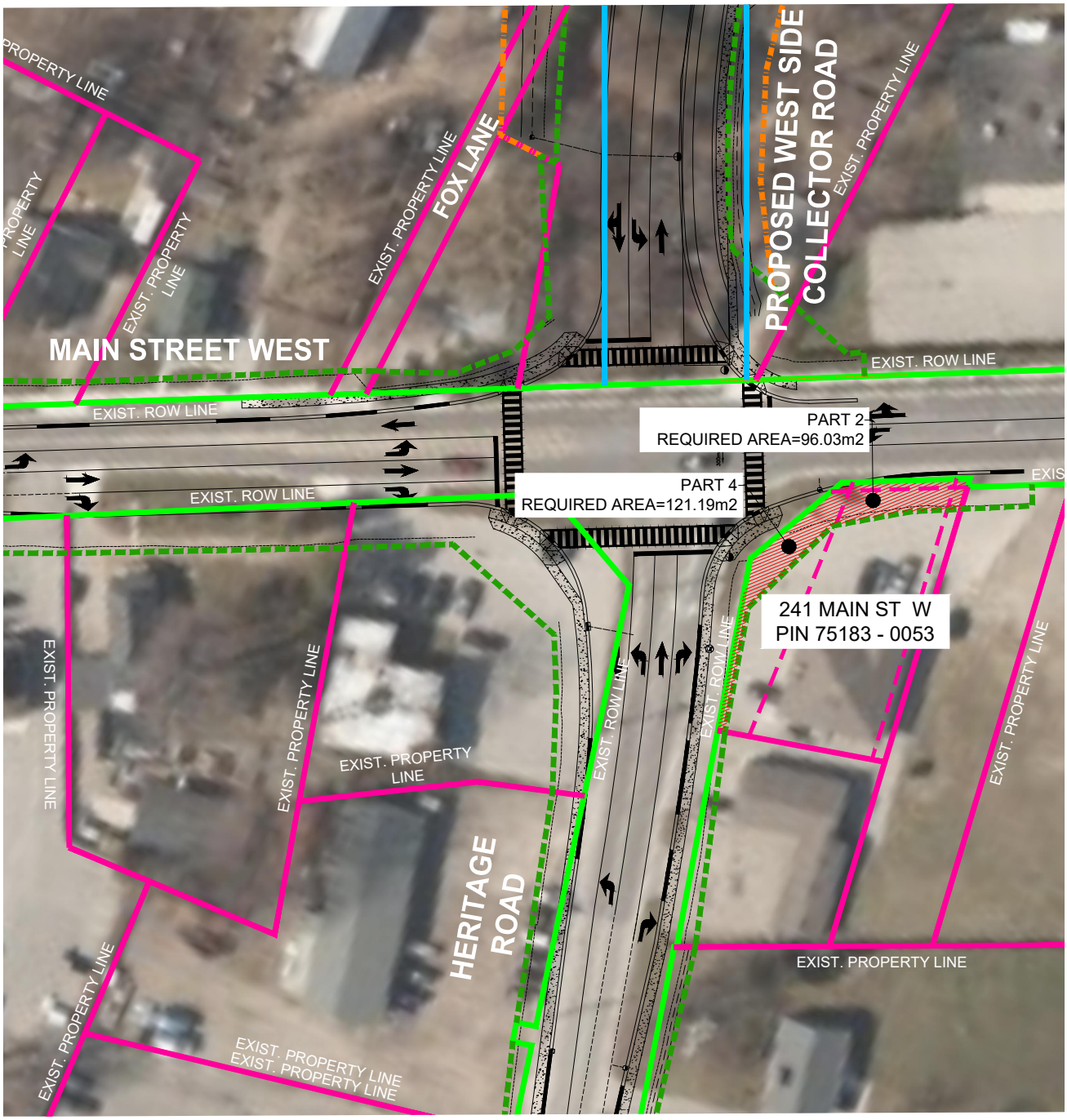
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

22 Heritage Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south east side of Main Street West
at Heritage Road

Kingsville ONTARIO

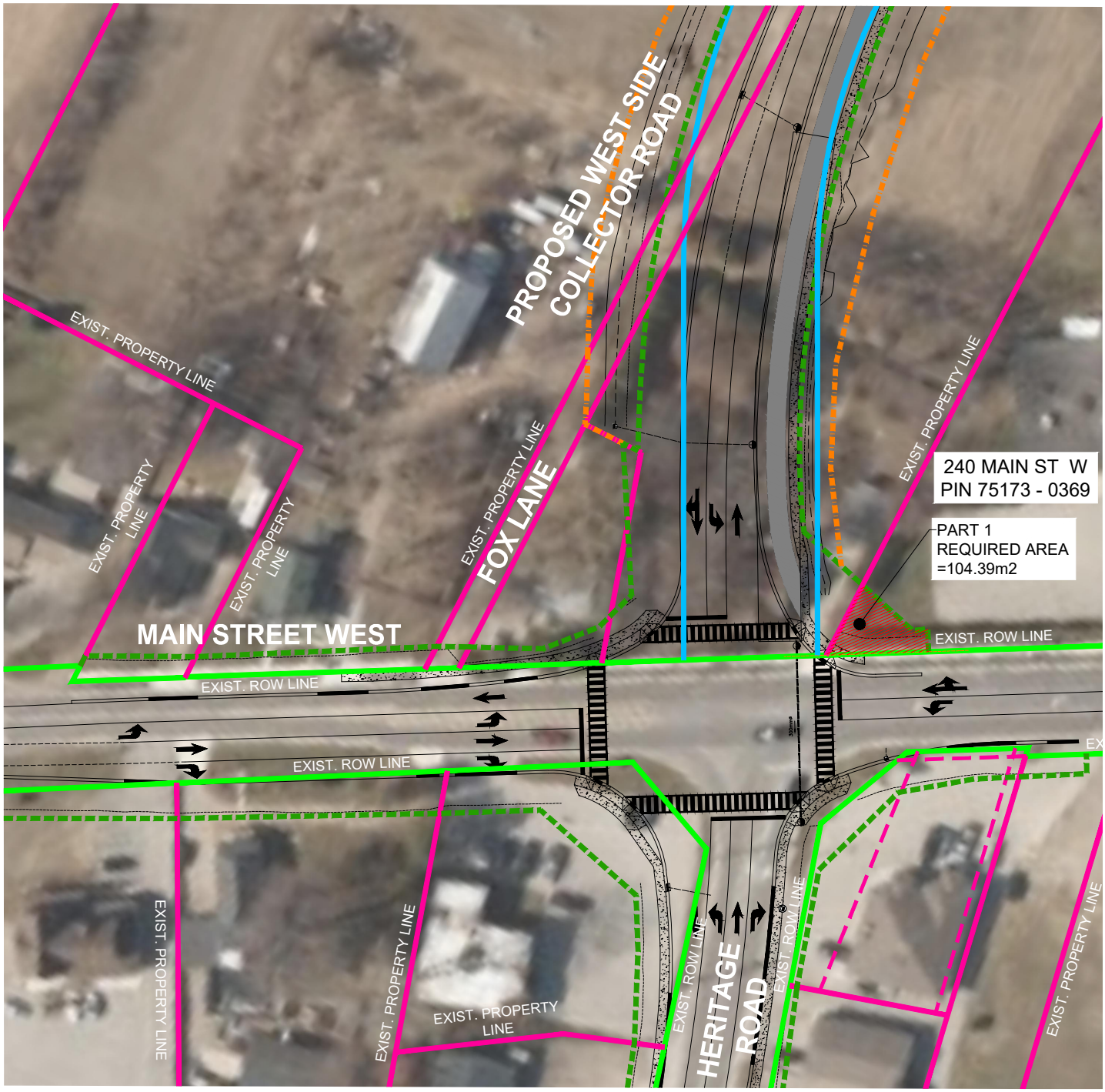
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

241 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

240 Main Street West
General location of Property
is north of Hertage Road and Main Street West

Kingsville ONTARIO

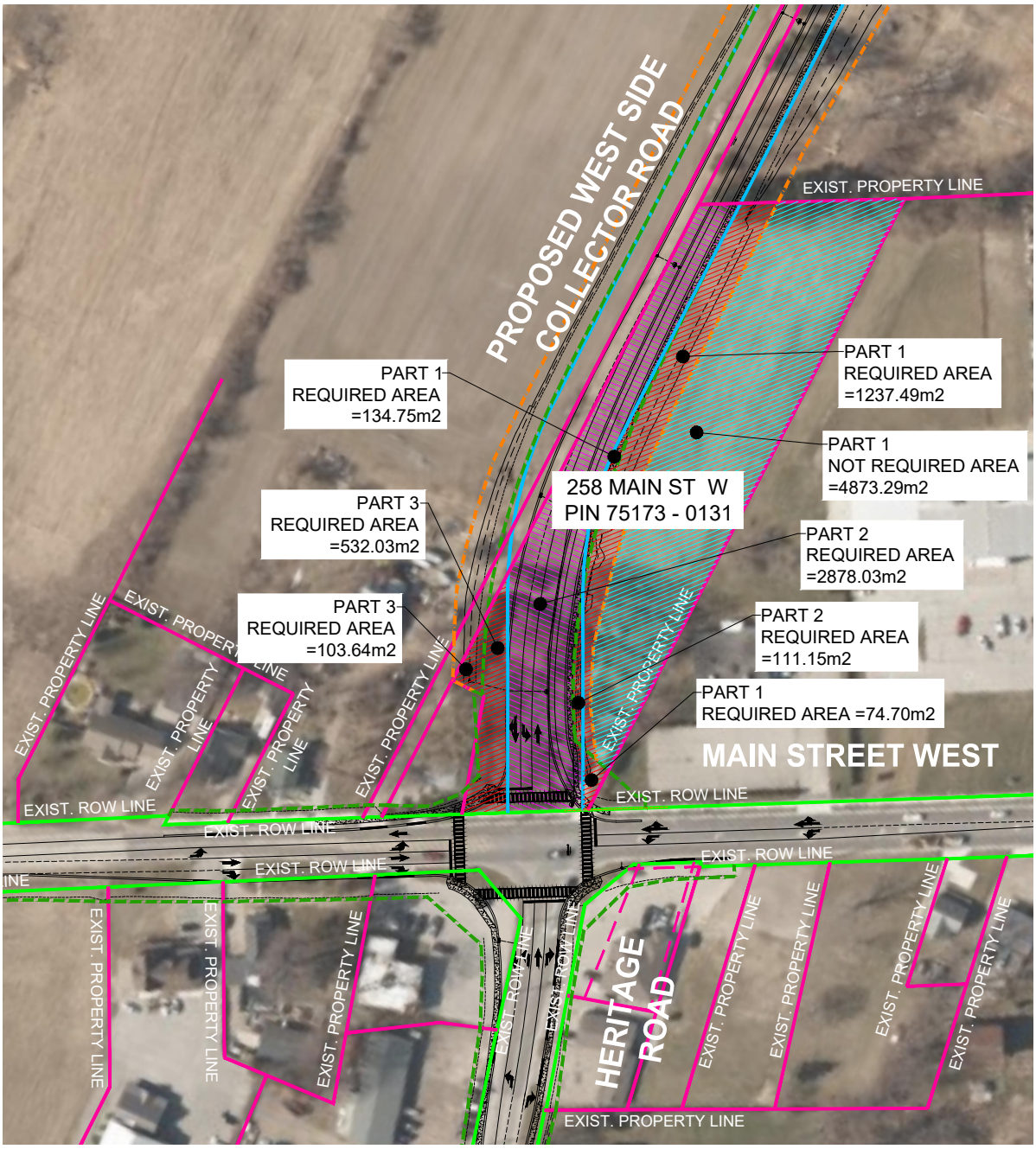
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

240 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

258 Main Street West
General location of Property
is north of Hertage Road and Main Street West

Kingsville ONTARIO

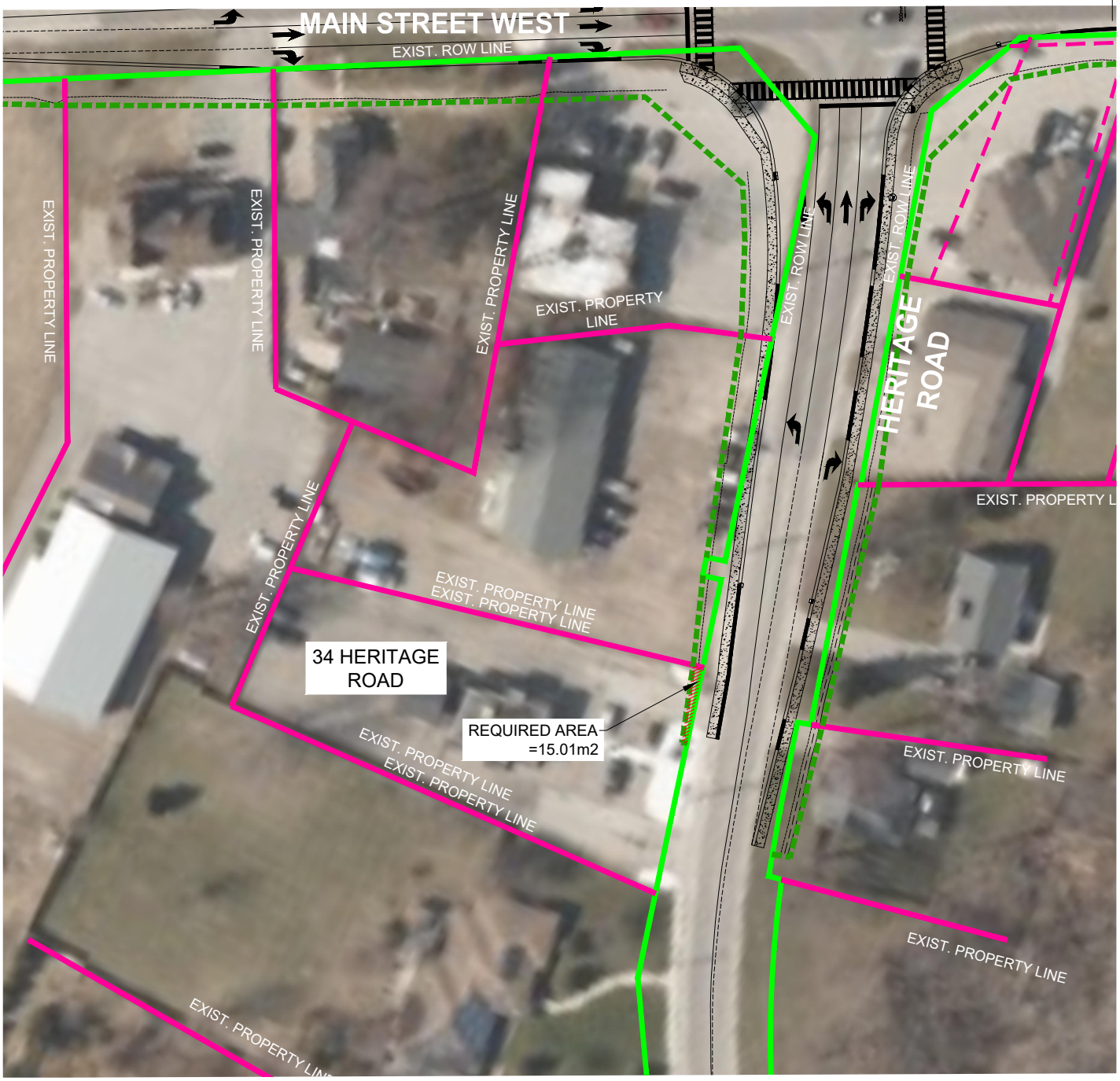
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

258 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
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PROPERTY UNDER AQUISITION:
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REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the west side of Heritage Road
south of Main Street West

Kingsville ONTARIO

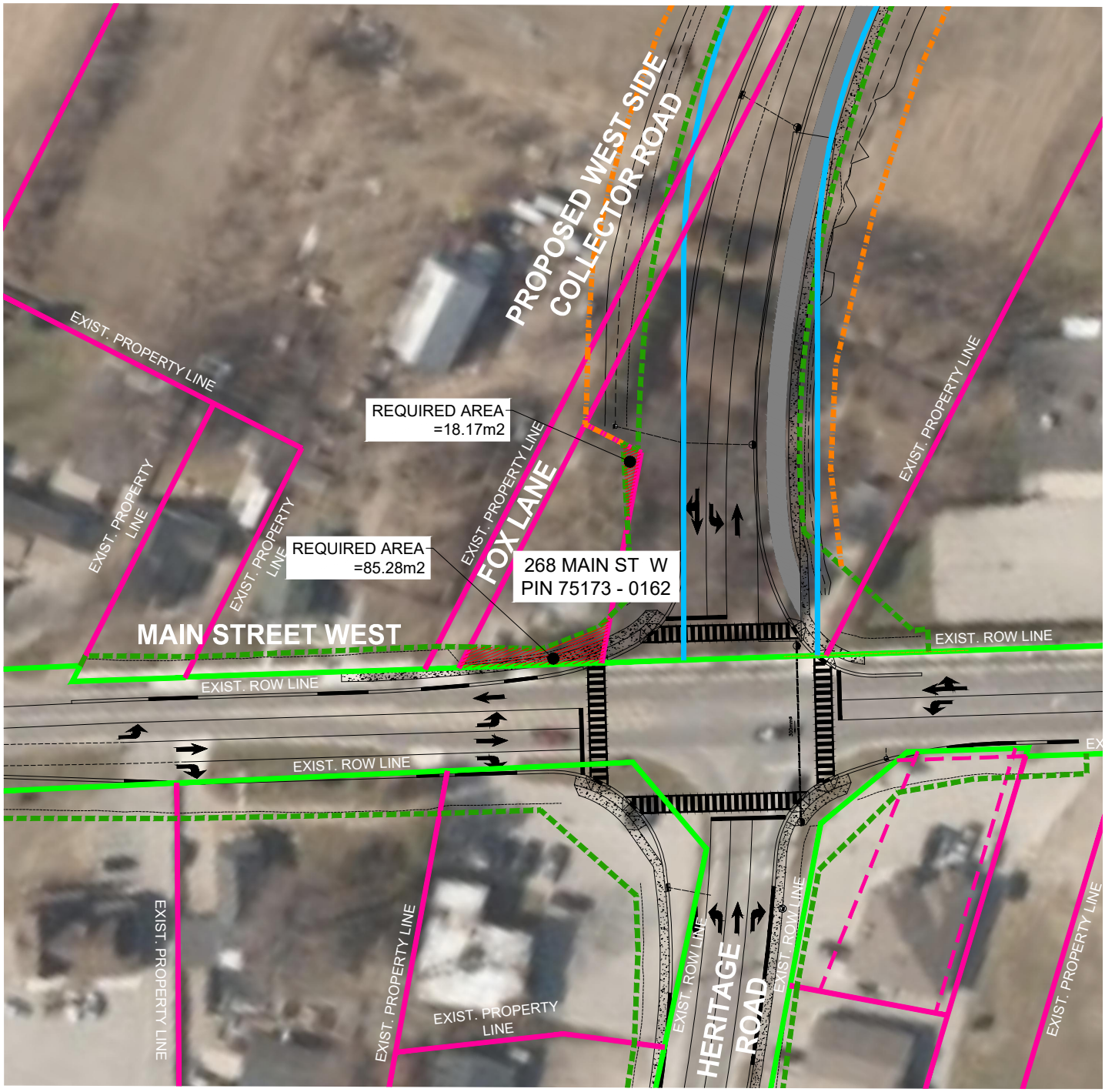
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

34 Heritage Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

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PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

268 Main Street West
General location of Property
is north of Hertage Road and Main Street West

Kingsville ONTARIO

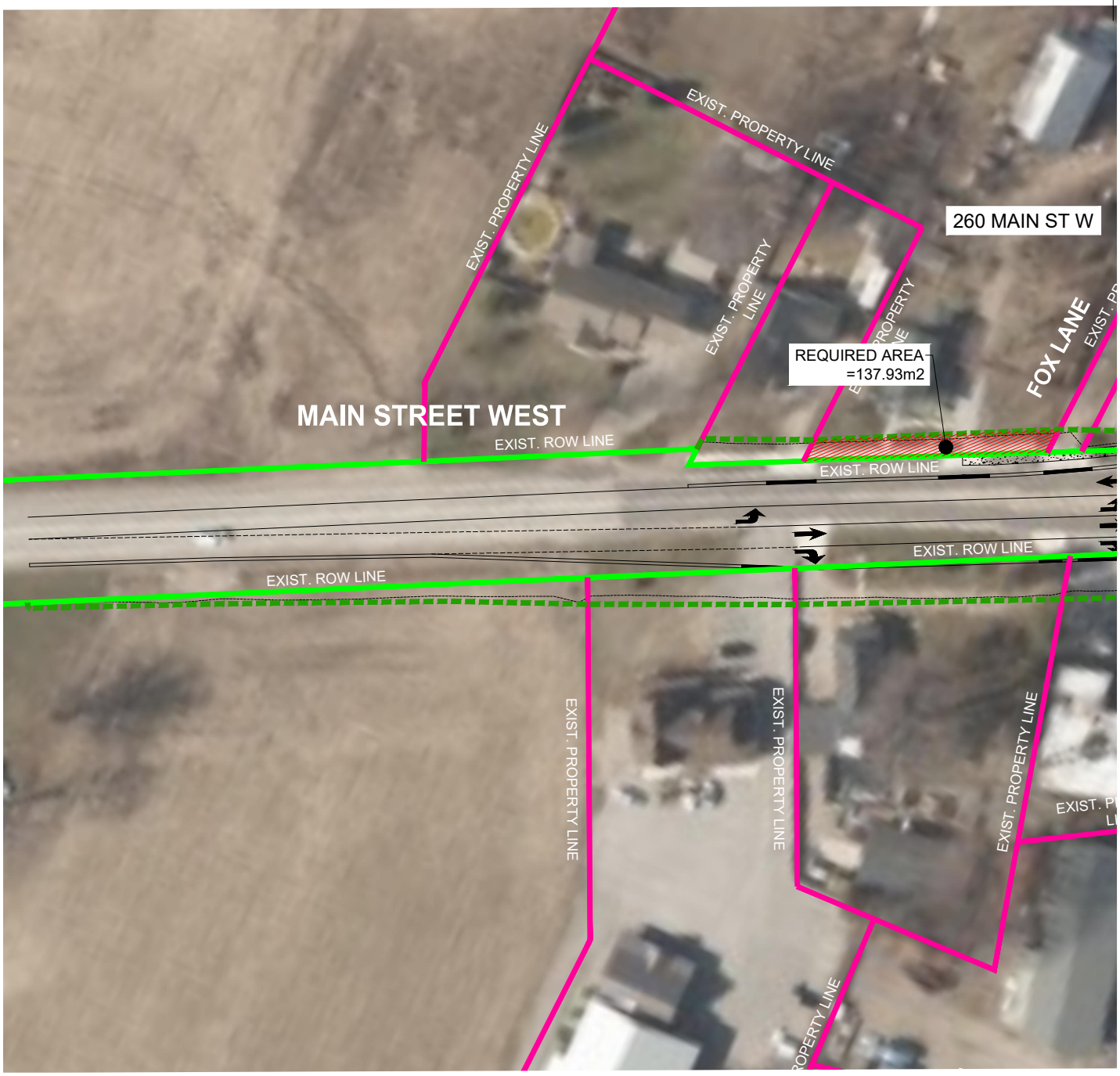
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

268 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
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ADDITIONAL PROPETY REQUIRED:
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REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south west side Main Street West
at Heritage Road

Kingsville ONTARIO

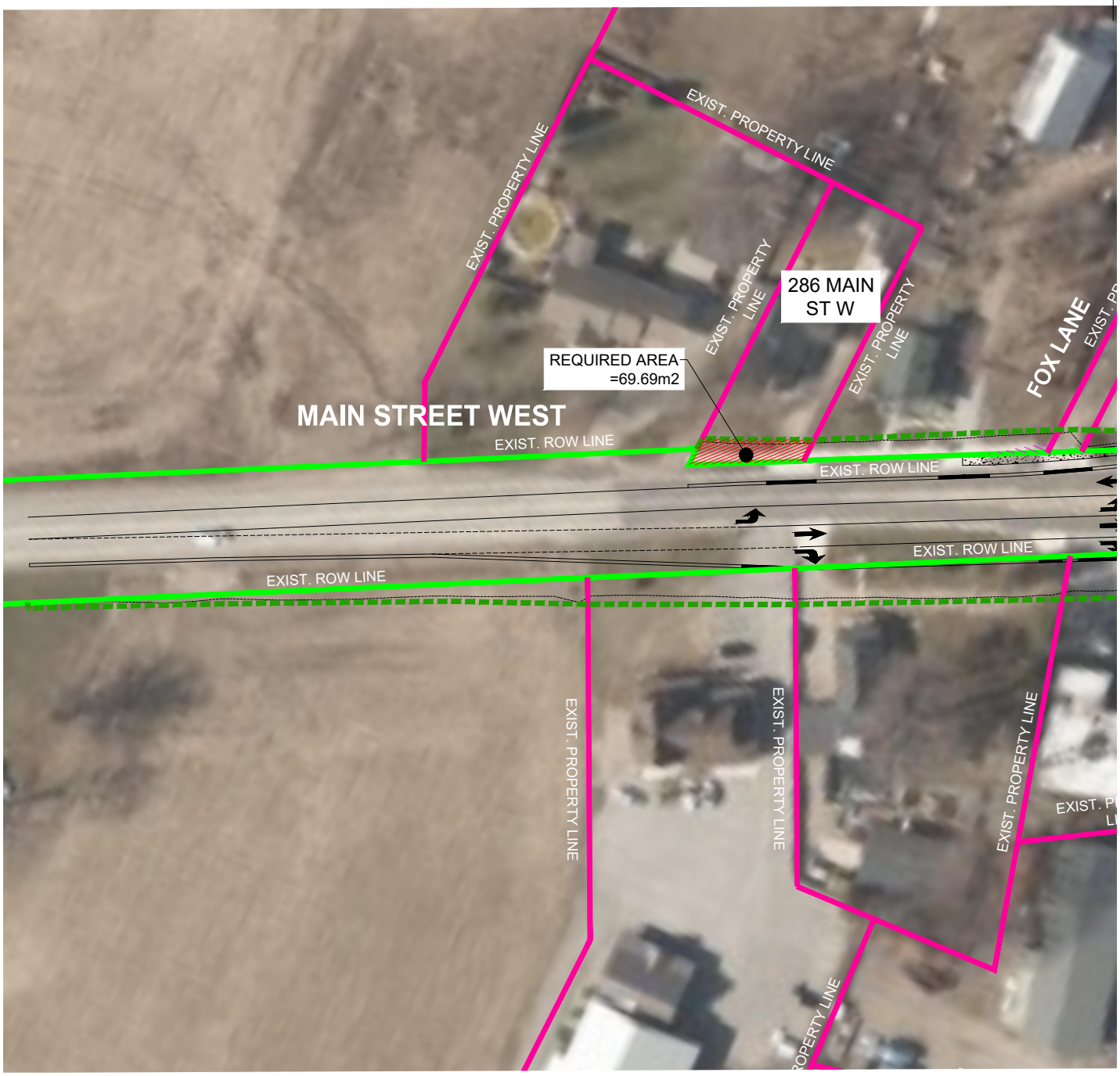
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

260 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
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NOTE: Measurements are approximate

General location of Property
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at Heritage Road

Kingsville ONTARIO

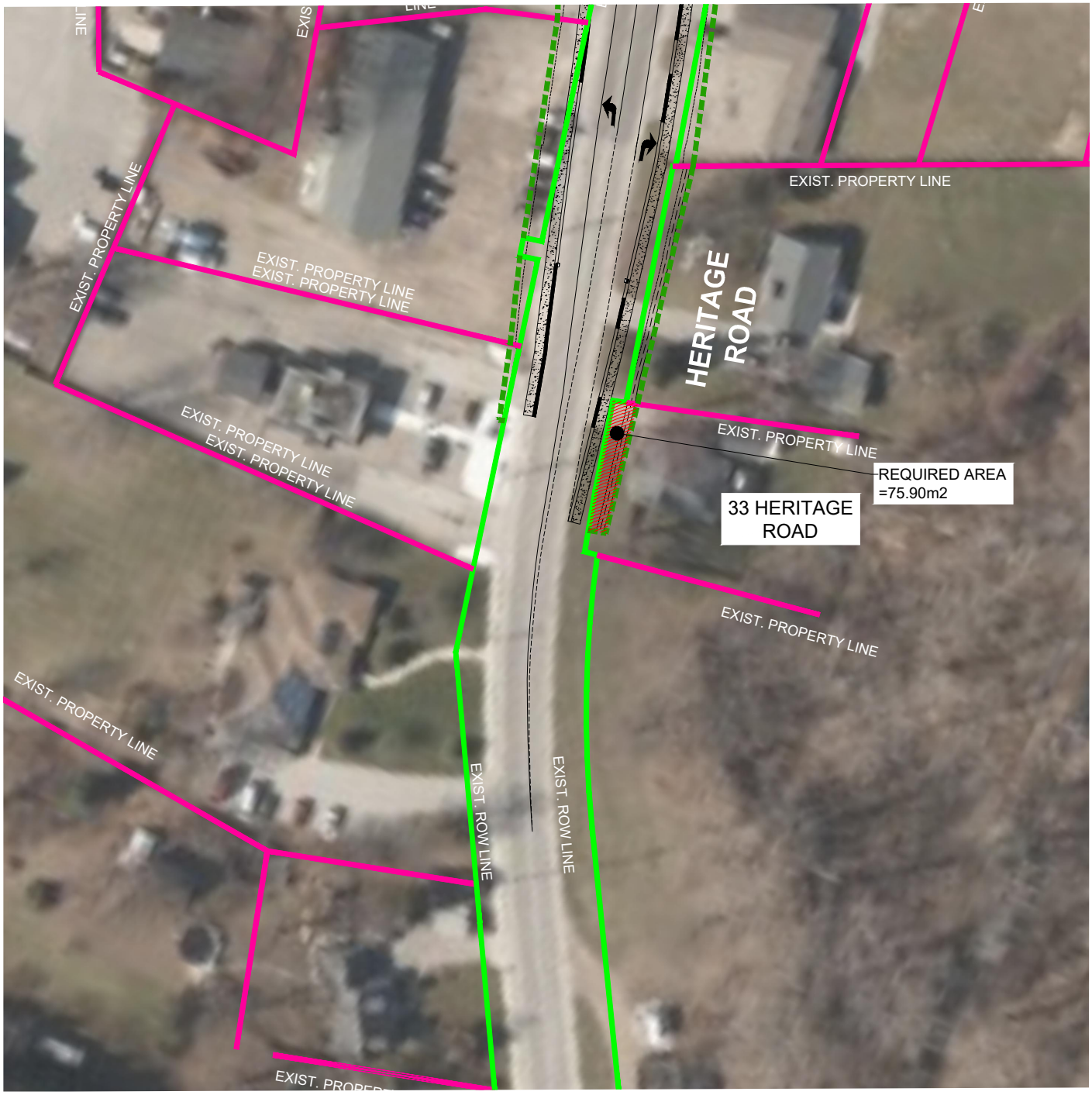
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

286 Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
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PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the west side of Heritage Road
south of Main Street West

Kingsville ONTARIO

WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

33 Heritage Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
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PROPOSED ROW LIMIT:
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PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the west side of Heritage Road
south of Main Street West

Kingsville ONTARIO

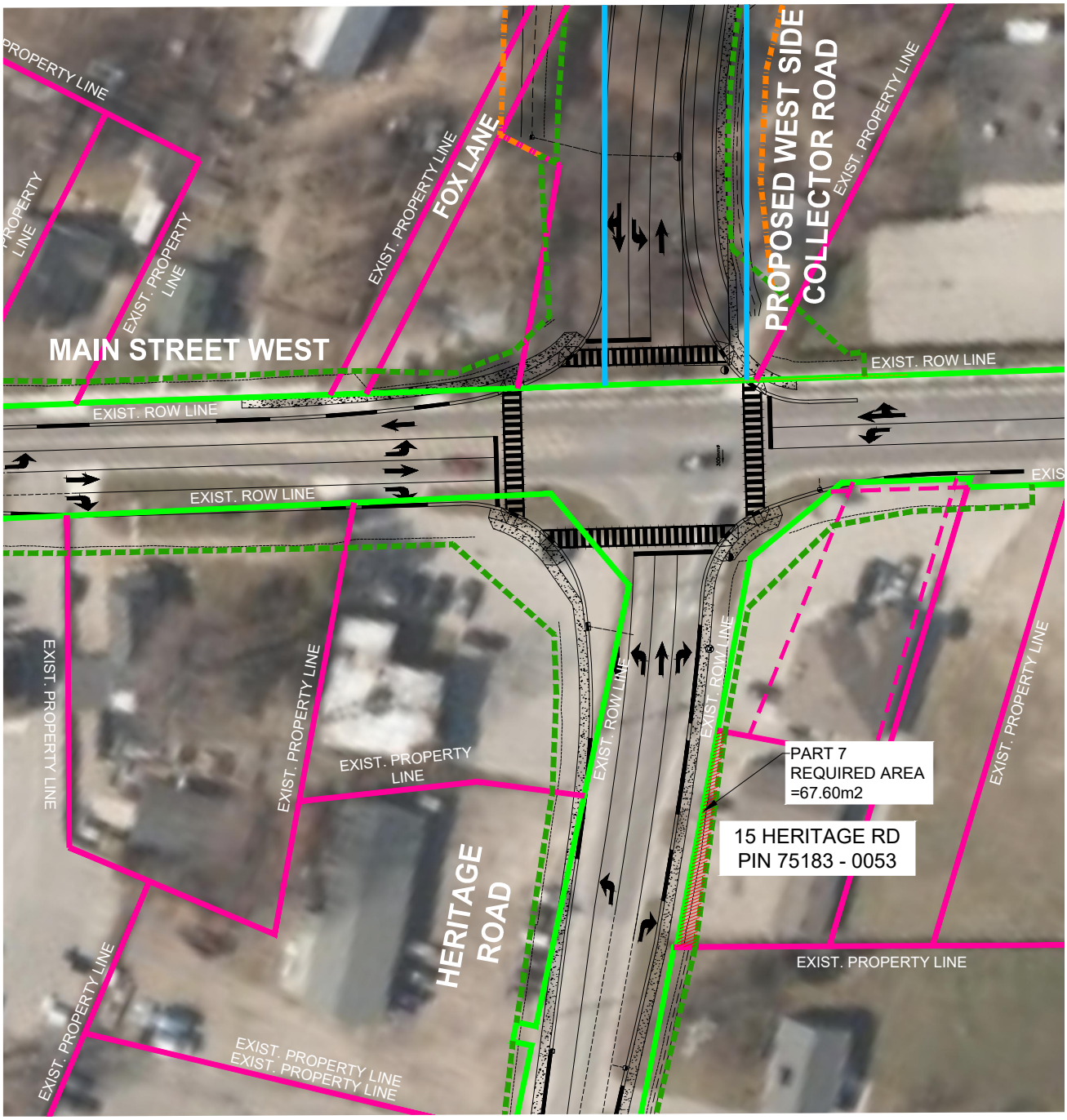
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

27 Heritage Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
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REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south east side of Main Street West
at Heritage Road

Kingsville ONTARIO

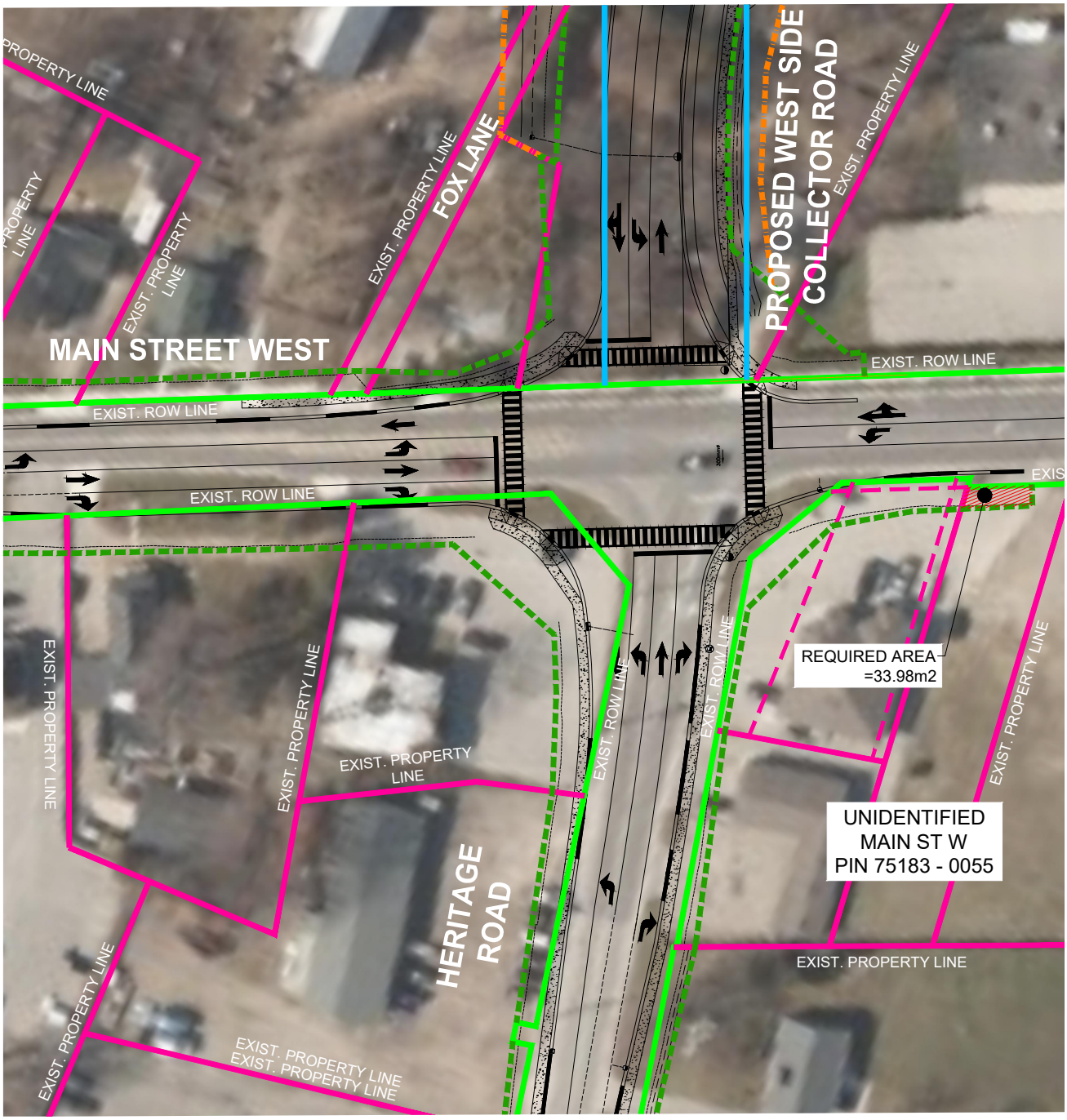
WEST SIDE COLLECTOR RD

South of Main St West to Road 2 West

PROPERTY PLAN

15 Heritage Road

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX



LEGEND:

EXISTING ROW LIMIT:
PREVIOUS ROW LIMIT:
PROPOSED ROW LIMIT:
EXISTING PROPERTY/LOT LINE:
PROPOSED TEMP. EASEMENT:
PROPERTY UNDER AQUISITION:
ADDITIONAL PROPETY REQUIRED:
PROPERTY NOT REQUIRED:

REGISTERED OWNER:

PROPERTY REQ'D:

Signature of acknowledgement:

NOTE: Measurements are approximate

General location of Property
on the south east side of Main Street West
at Heritage Road

Kingsville ONTARIO

WEST SIDE COLLECTOR RD

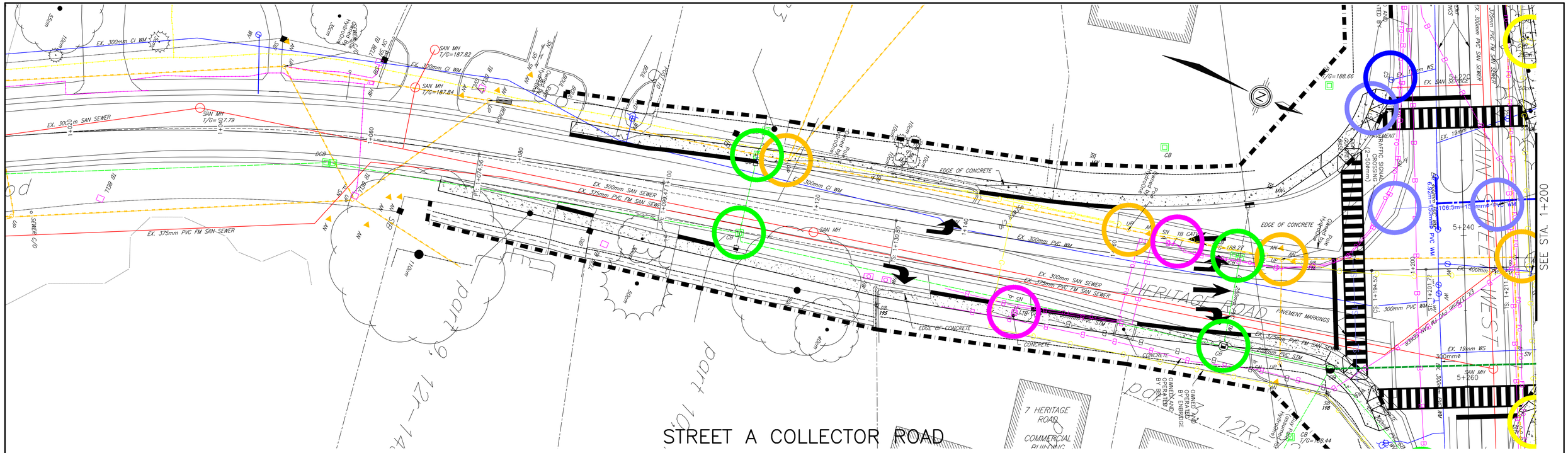
South of Main St West to Road 2 West

PROPERTY PLAN

UNIDENTIFIED Main Street West

Drawn By: CB	Scale: N.T.S.	4 DEC. 2023	EAXXXXX

Appendix J - Utility Conflicts


EX. 300mm CI WM
SAN MH T/G=187.82
SAN MH T/G=187.84
SAN MH T/G=187.79
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
EDGE OF CONCRETE
300mm CI WM
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
EX. 300mm PVC WM
EX. 300mm SAN SEWER
EX. 375mm PVC FM SAN SEWER
EDGE OF CONCRETE
CONCRETE
CONCRETE
EX. 750mm PVC FM SAN SEWER
EX. 600mm PVC STM
EX. 375mm PVC FM SAN SEWER
EX. 600mm PVC STM
EX. 300mm PVC WM
EX. 400mm PVC WM
EX. 19mm WS
EX. 300mm PVC SAN SEWER
EX. 375mm PVC FM SAN SEWER
EX. 19mm WS
EX. SAN SERVICE
EX. 19mm WS
EX. 300mm PVC SAN SEWER
EX. 375mm PVC FM SAN SEWER

lot 5 concession 1 western division

SEE STA. 1+400

106.7m–150mmø PVC WM

98.3m–150mmø PVC WM

Ex. 350mm FM PVC SAN SEWER

750mmø

FOX LANE

Owned by Elexicon Energy

UP

AN

SEE STA. 1+600

STREET A COLLECTOR ROAD

lot 4 concession 1 western division

SEE STA. 1+600

4+000

BP: 4+000.00

DESIGN SPEED=50KM/H

STA 4+000.00

125.7m–150mmø PVC WM

212.49m–150mmø PVC WM

Ex. 350mm

Ex. 350mm FM PVC SAN SEWER

1050mmø

4+020

4+040

MH T/G=189.62

SEE STA. 1+800

STREET A COLLECTOR ROAD

lot 4 concession 1 western division

LEGEND

- BELL
- TRAFFIC SIGNAL CONDUIT
- WATERMAIN
- UTILITY POLE
- GAS
- STORM
- HYDRO

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

No.	REVISIONS	DATE	CONSULTANT
1.	ISSUED FOR PRELIM DESIGN	NOV. 18, 2022	STANTEC

CONSULTANT OR DIVISION

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Kingsville ONTARIO

SCALE
HORZ. 1:250
2.5m 0 5.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE

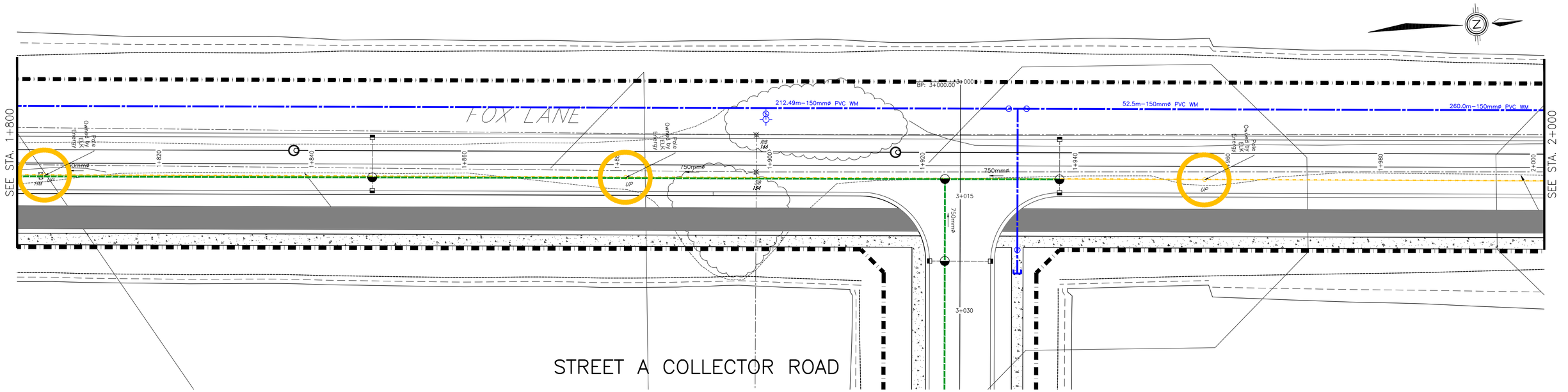
UTILITY CONFLICTS
STA. 1+400 TO 1+800

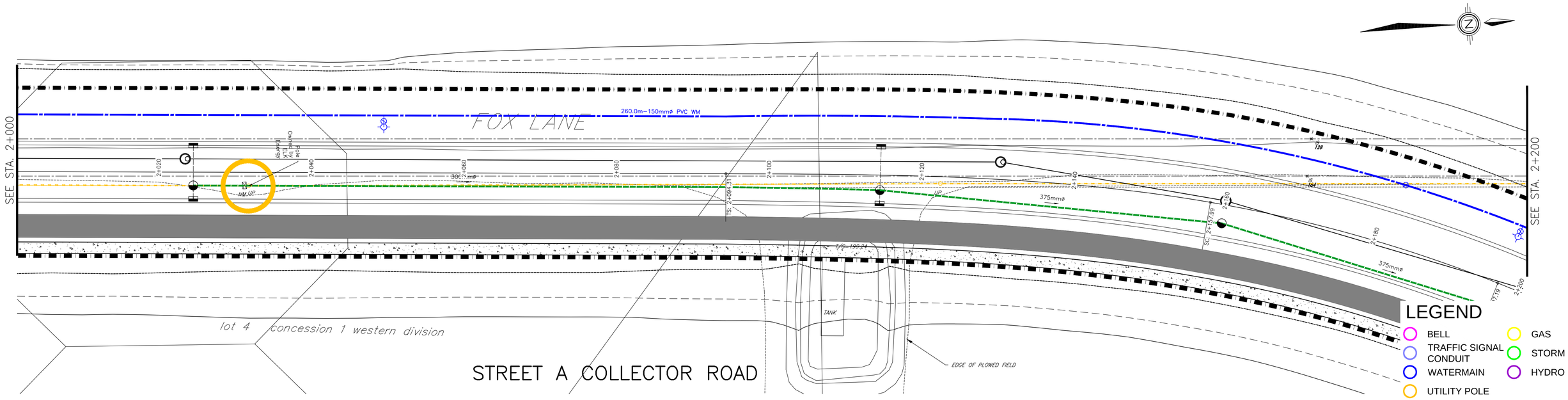
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LEGEND

- BELL
- TRAFFIC SIGNAL CONDUIT
- WATERMAIN
- UTILITY POLE
- GAS
- STORM
- HYDRO

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
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HORIZONTAL

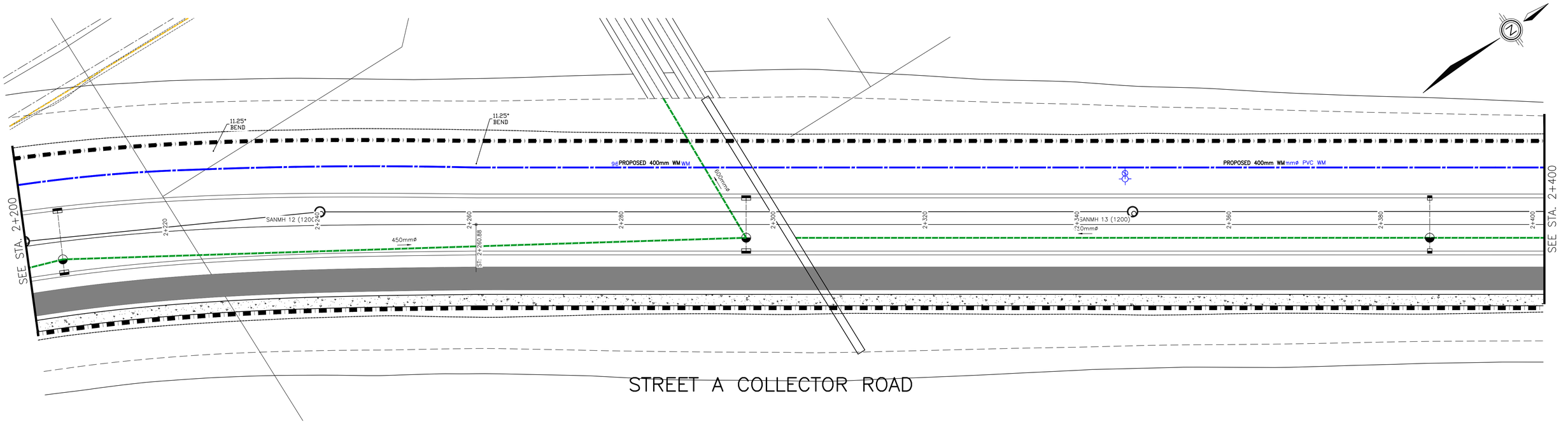
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KINGSVILLE
UTILITY CONFLICTS
STA. 1+800 TO 2+200

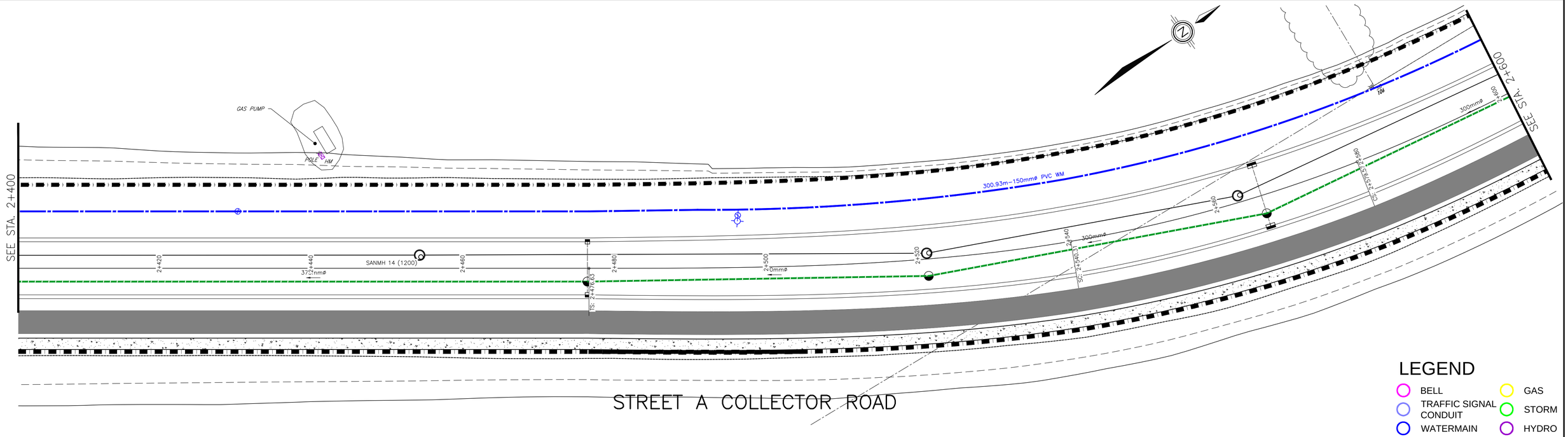
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DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

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HORIZONTAL

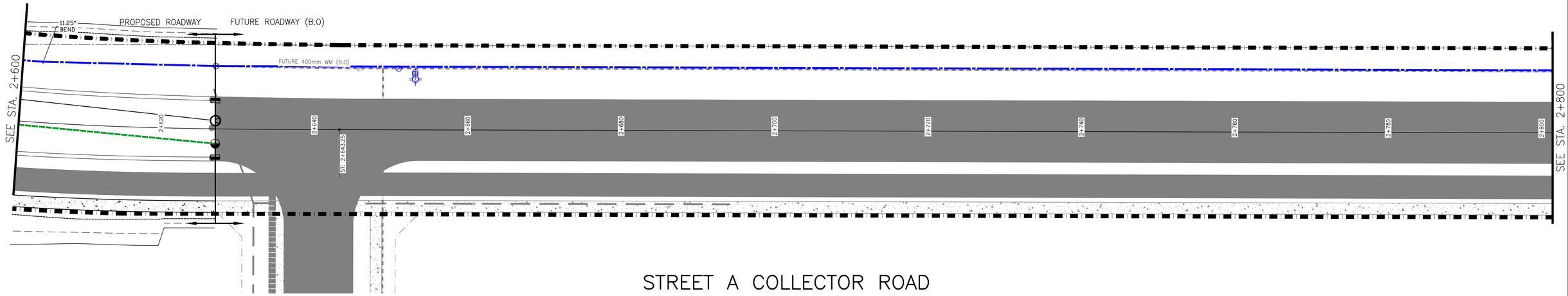
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KINGSVILLE
UTILITY CONFLICTS
STA. 2+200 TO 2+600

PROJECT No.

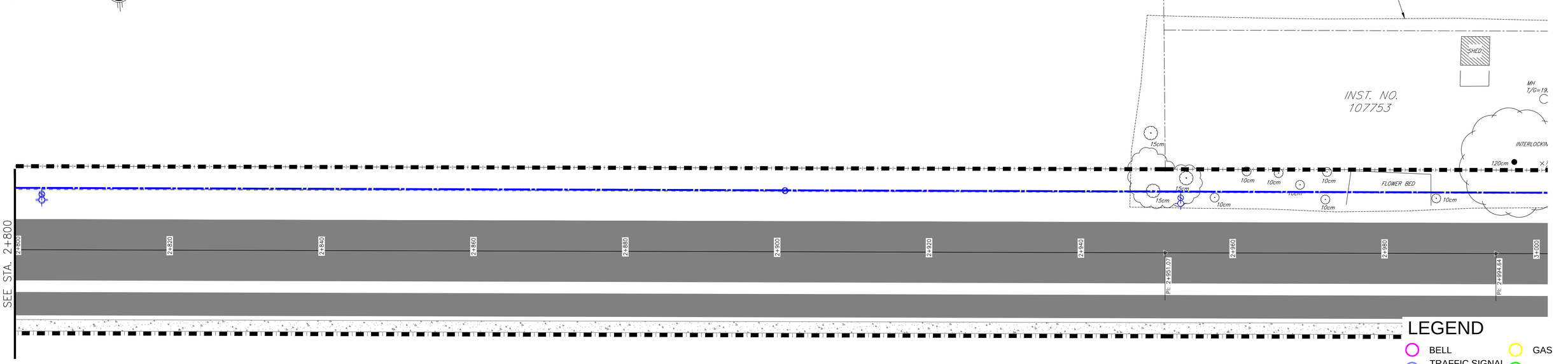
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STREET A COLLECTOR ROAD



STREET A COLLECTOR ROAD

LEGEND

- BELL
- GAS
- TRAFFIC SIGNAL CONDUIT
- STORM
- WATERMAIN
- HYDRO
- UTILITY POLE

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

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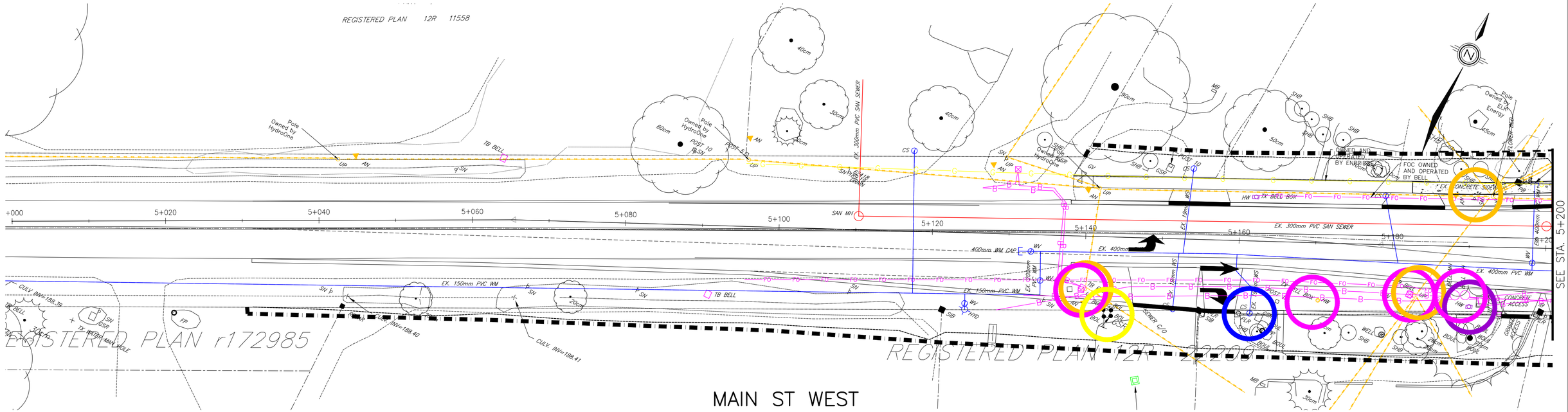
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KINGSVILLE
UTILITY CONFLICTS
STA. 2+800 TO 3+000

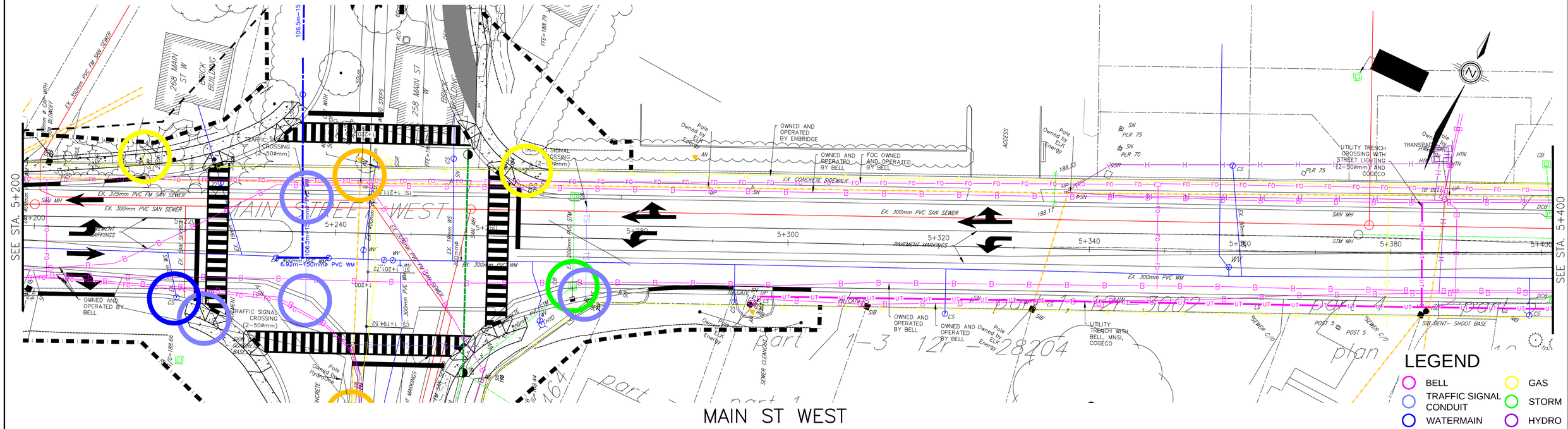
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LEGEND

- BELL
- TRAFFIC SIGNAL CONDUIT
- WATERMAIN
- UTILITY POLE
- GAS
- STORM
- HYDRO

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
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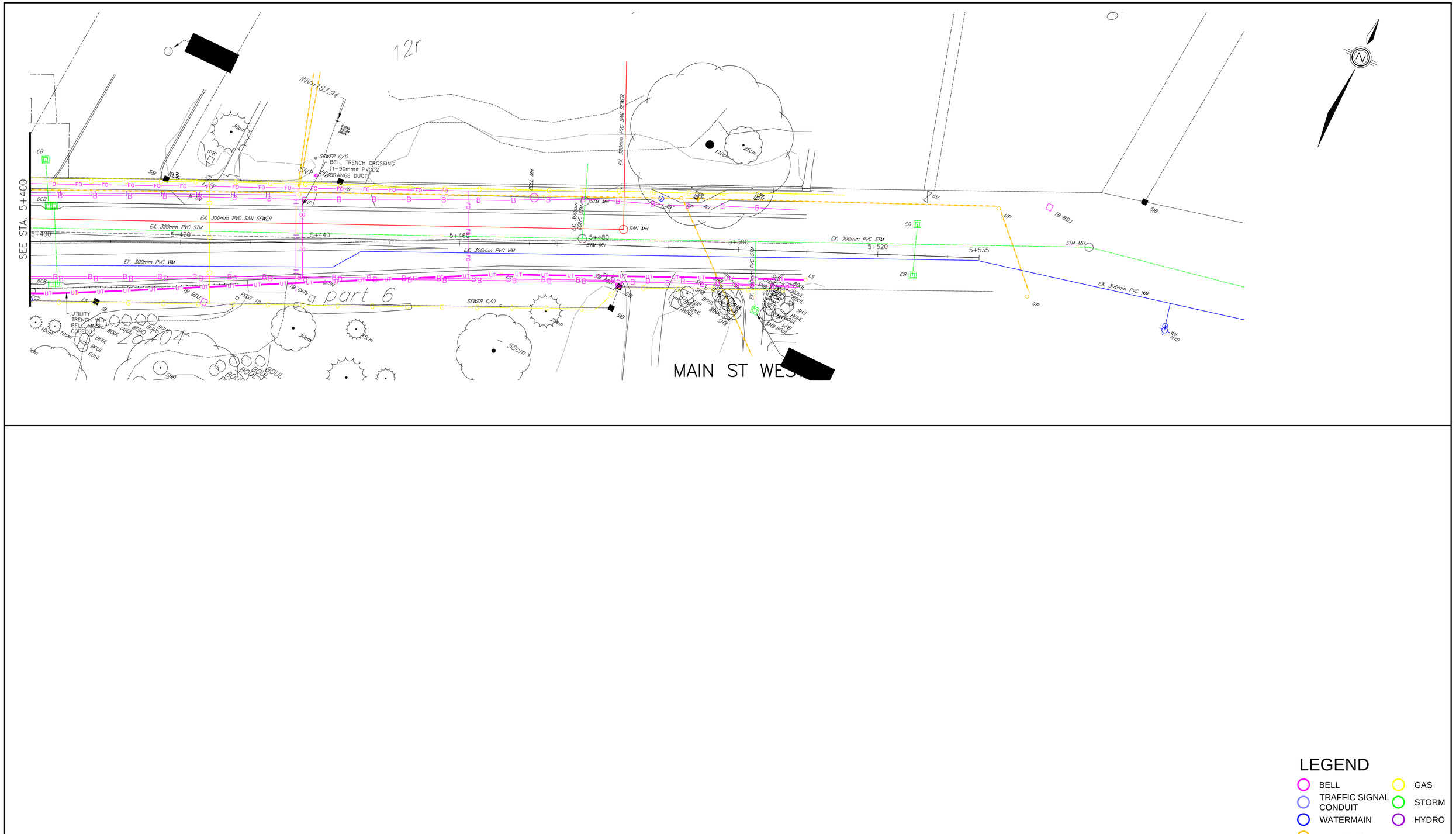
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KINGSVILLE
UTILITY CONFLICTS
STA. 5+000 TO 5+400

PROJECT No.

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LEGEND

- BELL
- TRAFFIC SIGNAL CONDUIT
- WATERMAIN
- UTILITY POLE
- GAS
- STORM
- HYDRO

EXISTING SERVICES	DRAWING #, SOURCE	DATE	CONSTRUCTED SERVICES	COMPLETION

DETAILS	
DESIGN	KM
DRAWN BY	KM
CHECKED	KE
APPROVED	KE
DATE	NOV. 2022
	165001284

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2.5m 0 5.0m
HORIZONTAL

TITLE
WEST SIDE COLLECTOR ROAD
KINGSVILLE
UTILITY CONFLICTS
STA. 5+400 TO 5+535

PROJECT No.

SHEET No.
7 OF 7

PLAN FILE No.

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12/12/2023 9:43:53 AM by Arvani, Adib

Appendix K - Noise Assessment Report

Prepared for:

Town of Kingsville
2121 Division Road
Kingsville, Ontario N9Y 2Y9

Prepared by:

Stantec Consulting Ltd.
200-835 Paramount Drive
Stoney Creek, Ontario L8J 0B4

Stantec

Noise Impact Assessment Report, Municipal Class Environmental Assessment for Heritage Road to Road 2 West, Town of Kingsville

Final Report

File: 165001284
February 6, 2024

Sign-off page

The conclusions in the Report titled Noise Impact Assessment Report, Municipal Class Environmental Assessment for Heritage Road to Road 2 West, Town of Kingsville are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Town of Kingsville (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by __ Digitally signed by Salim, Mohammed Date: 2024.02.07 11:16:50 -05'00'
(signature)

Mohammed Salim, MBA, P.Eng.
Senior Acoustic, Noise and Vibration Engineer

Reviewed by _____ Digitally signed by Hunt, Deborah Date: 2024.02.08 12:15:03 -05'00'
(signature)

Deborah Hunt-Kansal, M.Sc., P.Eng.
Noise and Acoustics Engineer – Group Lead

Executive Summary

The Town of Kingsville (the Town) retained Stantec Consulting Ltd. (Stantec) to undertake a Municipal Class Environmental Assessment (EA) study for the construction of West Side Collector Road, an extension of Heritage Road to Road 2 West in the Town of Kingsville, Essex Region in Ontario. This noise impact assessment report has been prepared to support the Class EA for the West Side Collector Road (the Project). The purpose of this assessment is to assess the Project noise impact at nearby noise sensitive areas (NSAs) and investigate noise mitigation where needed.

This assessment considers nineteen (19) receptors representing NSAs identified for the Project, and they include both existing dwellings and a proposed subdivision. The receptors were identified from a review of aerial imagery, and proposed layout for the new subdivision.

Noise impact at the existing dwellings in the study area was assessed with the Ontario Ministry of the Environment Conservation and Parks (MECP), formerly known as Ministry of Energy and Environment (MOEE), / Ministry of Transportation (MTO) "Joint Protocol," A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highway's Environmental Assessments.

To determine the noise impact at the existing dwellings, a comparison was made for predicted future daytime noise levels for the horizon year of 2042 with the Project (Future Build) and without the Project (Future No-build). Where predicted Future Build noise levels increase more than 5 dB over Future No-build and Future Build noise levels exceed 55 dBA, mitigation was investigated. For the mitigation to be implemented, it must be technically, economically, and administratively feasible.

Noise impact on the proposed residential subdivision (Conklin Subdivision) was assessed with the MECP NPC-300 Environmental Noise Guideline – Stationary, and Transportation Sources – Approval and Planning in the context of land use planning.

For the proposed subdivision within the Study Area, Future Build daytime noise levels were assessed with 55 dBA absolute limit and nighttime noise levels were assessed with 50 dBA absolute limit. Where predicted Future Build noise levels exceed 55 dBA for daytime and 50 dBA for nighttime, mitigation was investigated.

The Town of Kingsville does not have any noise guidelines applicable to assessing the Project noise impact. Its noise by-law (By-Law Number 28-2006) limits the operation of construction equipment and is considered in this study.

The most current version of the United States Federal Highway Administration (FHWA) Traffic Noise Model (TNM v3.1) was used for this noise impact assessment.

The predicted daytime noise levels indicate that the Future Build noise level is expected to increase over 5 dB at existing receptors R05, R07, R08 and R10. The increase does not result in a level exceeding 55 dBA absolute daytime noise limit, therefore, noise mitigation was not considered.

The predicted Future Build nighttime noise levels at the proposed subdivision receptors (R13-R19) all met the 50 dBA nighttime MECP limit. Therefore, noise mitigation was not considered.

Construction noise for the Project was assessed in accordance with the applicable MECP Publication NPC-115 (MECP, 1977) and NPC-118 (MECP, 1982).

It is expected that most of the planned construction equipment for the Project can be operated in compliance with the MECP limits. However, there is potential for sound levels over the stated limits for some equipment (e.g., paving machines). Once the equipment inventory and construction schedules are finalized, construction equipment sound levels should be reviewed to confirm that nose emissions are within permissible limits. If they exceed the limits, noise control options should be explored. Methods to reduce construction noise impacts are included in the Construction Code of Practice, as outlined in Section 6.2.

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Appendix A Project Preferred Plan and Subdivision Layout
Appendix B Sample Calculations

Acronyms/Units

AADT	Annual Average Daily Traffic
dB	Decibel
dBA	Decibel, A-weighted
EA	Environmental Assessment
FHWA	Federal Highway Administration
L_{eq-8}	8-hr Energy Equivalent Sound Level
L_{eq-16}	16-hr Energy Equivalent Sound Level
m	Metre
m^2	Square Metre
MECP	Ontario Ministry of the Environment, Conservation and Parks
MOEE	Ontario Ministry of Energy and Environment
MTO	Ontario Ministry of Transportation
NPC	Noise Pollution Control
NSA	Noise Sensitive Area
OLA	Outdoor Living Area
ORNAMENT	Ontario Road Noise Analysis Method for Environment and Transportation
TNM	Traffic Noise Model

1.0 Introduction

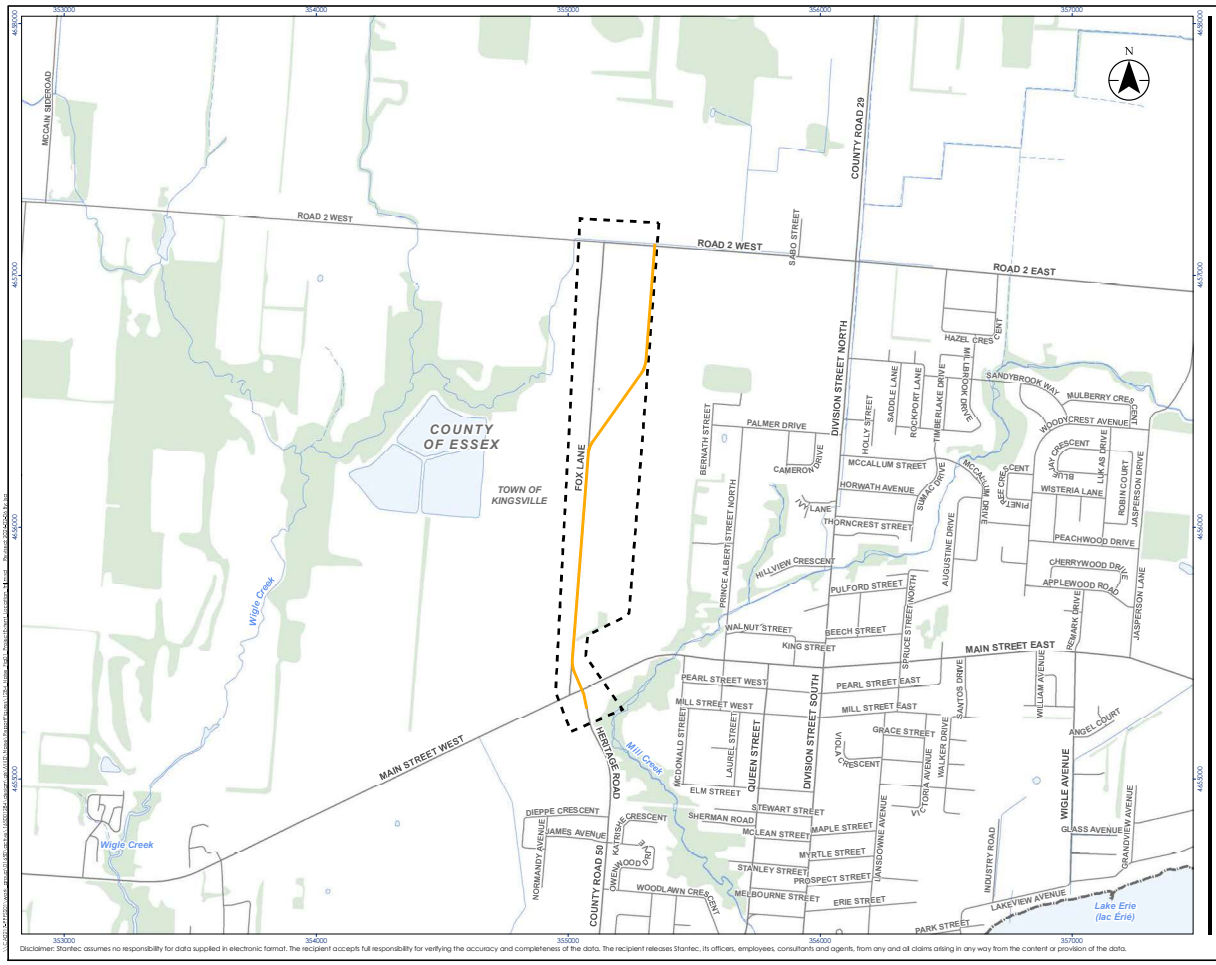
The Town of Kingsville (the Town) retained Stantec Consulting Ltd. (Stantec) to undertake a Municipal Class Environmental Assessment (EA) study for the construction of West Side Collector Road, an extension of Heritage Road to Road 2 West in the Town of Kingsville, Essex Region in Ontario (the Project). The Town is undertaking the Class EA to meet long-term transportation needs of the community within the Town.

The Project is an extension of Heritage Road to Road 2 West, two local road connecting links, active transportation infrastructure and intersection improvements. The improvements will provide a safe and accessible multi-modal transportation network to accommodate future growth and development for the Town.

A significant multiphase residential development (Conklin Subdivision) is proposed east of the new West Side Collector Road. The proposed subdivision will be connected to the West Side Collector Road through two local roads. There are existing dwellings at the intersections of the proposed West Side Collector Road at Road 2 West and County Road 20/Main Street West.

The purpose of this assessment is to assess the Project noise impact at nearby noise sensitive areas (NSAs) and investigate noise mitigation where needed. This noise impact assessment report is completed based on the Preferred layout for the Project as included in Appendix A.

The Project extent along with the site location is shown in Figure 1-1.



Stantec

Legend

- Project Extent

Proposed Alignment

- West Side Collector Road

Base Data

- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain
- Waterbody
- Wooded Area
- Municipal Boundary, Upper
- Municipal Boundary, Lower

0 250 500 Metres

1:15,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.



Project Location
Town of Kingsville

165001284 REV4
Prepared by JSa on 2024-02-06

Client/Project
TOWN OF KINGSVILLE
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, CONSTRUCTION OF A WEST SIDE COLLECTOR ROAD

Figure No.
1-1

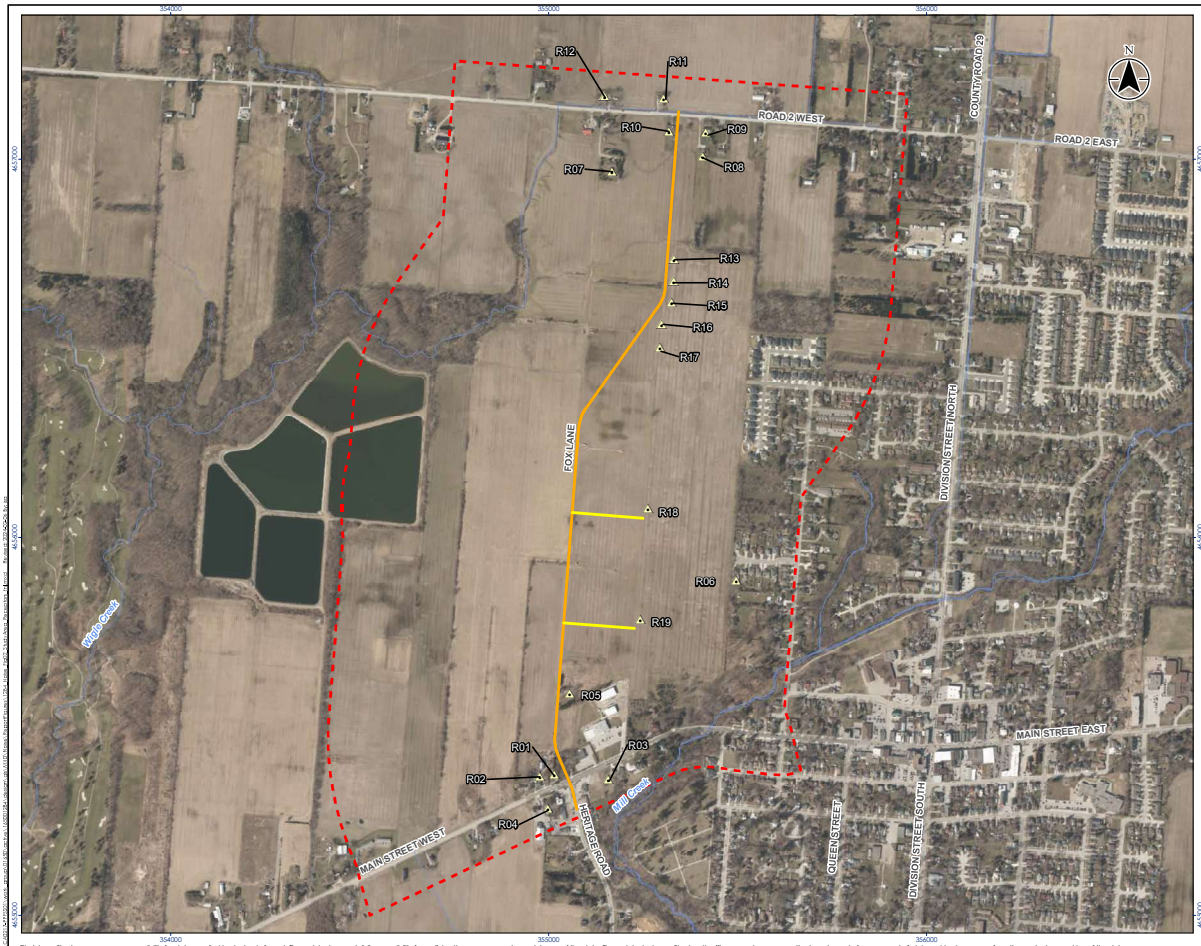
Title
Project Extent and Site Location

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2.0 Area of Investigation (Study Area)

The area of investigation (Study Area) for this Class EA is within the Town of Kingsville, along West Side Collector Road between Road 2 West and County Road 20/Main Street West. It includes the intersection at Heritage Road and County Road 20/Main Street West, and the intersection of the proposed West Side Collector Road and Road 2 West. The Study Area encompasses the area within which NSAs may be impacted from the Project.

The Study Area considered for this noise impact assessment is 600 metres (m) on either side of the proposed West Side Collector Road and 100 m extended from both ends of the Project. The Study Area along with the receptors considered in the assessment is shown in Figure 2-1.



Stantec

Legend

- Receptor
- Study Area

Proposed Alignment

- West Side Collector Road
- Local Road

Base Data

- Watercourse (Intermittent)
- Watercourse (Permanent)
- Constructed Drain

0 250 Metres

1:10,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.
3. Orthoimagery obtained from ©First Base Solutions , Essex County, 2022

Project Location: Town of Kingsville

165001284 REV4

Prepared by JSa on 2024-02-06

Client/Project: TOWN OF KINGSVILLE
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, CONSTRUCTION OF A WEST SIDE COLLECTOR ROAD

Figure No.: **2-1**

Title: **Study Area and Receptors**

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3.0 Applicable Guidelines

For the proposed West Side Collector Road, both operational noise (road traffic noise) and construction noise are assessed with applicable Provincial guidelines. The Town of Kingsville does not have any noise guidelines applicable to the Project. However, its noise bylaw limits the operation of construction equipment and is considered in this study.

Applicable noise guidelines for West Side Collector Road Project are discussed in the following subsections.

3.1 Operational Noise

Ontario has several guidelines and documents related to assessing road traffic noise impacts. The document most applicable to potential impacts of municipal roadway projects on existing NSAs is the Ontario Ministry of the Environment Conservation and Parks (MECP), formerly known as Ministry of Energy and Environment (MOEE), / Ministry of Transportation (MTO) "Joint Protocol," A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highway's Environmental Assessments (MOEE/MTO 1986).

Although the MTO Environmental Guide for Noise (MTO, 2006) superseded the Joint Protocol, it has not been adopted by the MECP for municipal projects. Therefore, MOEE/MTO joint protocol has been used for the existing dwellings in this study.

In accordance with the Joint Protocol, the Project noise impact is assessed by comparing the predicted future daytime noise level with the Project (Future Build) and without the Project (Future No-build) for the existing receptors. Where predicted Future Build noise levels increase more than 5 dB over Future No-build and Future Build noise levels exceed 55 dBA, mitigation measures are to be investigated. Noise level is predicted at the outdoor living area (OLA). For the mitigation to be implemented, it must be technically, economically, and administratively feasible.

For the noise mitigation measure(s) to be considered technically feasible, it must achieve a minimum 5 dB noise level reduction averaged over the first row of receptors[1].

The MECP publication NPC-300 "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" (MECP, 2013) Part C "Land Use Planning" provides guidelines and criteria for the assessment of road traffic noise in the context of the municipal land use planning process and is considered for the

[1] First Row Receptors means the line of adjacent receptors closest to the road, usually running parallel to each other.

assessment of the proposed subdivision receptors. Noise mitigation should be considered when the daytime, 16-hour L_{eq} exceeds 55 dBA as per the guidelines. The 55 dBA limit is consistent with the MOEE/MTO joint protocol limit.

The MECP NPC-300 guideline also identifies the nighttime criteria limit of 50 dBA (8-hour L_{eq}) for the dwelling façade and is considered for the proposed subdivision.

3.2 Construction Noise

Construction noise impacts are temporary in nature, and largely unavoidable. For some periods and types of work construction noise may be noticeable, and with adequate controls, impacts can be reduced. This section of the report provides overview of the criteria and applicable Town of Kingsville noise by-law.

The relevant local noise by-laws and applicable criteria are discussed in the following subsections.

3.2.1 Local Noise Control By-Law

The local noise control by-law for the Town of Kingsville (By-Law Number 28-2006 (Kingsville, 2006)) only provides the periods during which construction activities are prohibited. No sound level limits are provided for construction activities in the by-law. The prohibited periods for construction activities are listed in Table 3-1.

Table 3-1: Prohibited Periods for Construction Activities

Weekdays	Saturday	Sunday
21:00 to 07:00 next day	21:00 to 11:00 next day	16:00 to 07:00 next day

In certain situations, a contract may require work that does not align with local noise control by-laws. A by-law exception permit is required for construction during the prohibited hours.

3.2.2 MECP Model Municipal Noise Control By-law

The MECP stipulates limits on noise emissions from each piece of equipment, rather than an overall construction noise limit for the receptors. In the presence of persistent noise complaints, sound emission standards for the various types of construction equipment used on the project should be verified through measurements to ensure that they meet the specified limits contained in MECP Publication NPC-115 (MECP, 1977) and NPC-118 (MECP, 1982) as summarized in Table 3-2.

Table 3-2: Construction Noise Emission Limits (NPC-115 and NPC-118)

Type of Unit	Maximum Allowed Sound Pressure Level [a] (dBA)	Distance at Which Sound Levels are Measured (m)	Power Rating (kW)
Excavation Equipment [b]	83	15	Less than 75 kW
	85	15	75 kW or Greater
Pneumatic Equipment [c]	85	7	-
Portable Compressors	76	7	-
Track Drills	100	15	-
Heavy Vehicles with Governed Diesel Engines	95	15	-

Notes:

[a] Maximum permissible sound levels presented here are for equipment manufactured after Jan 1, 1981

[b] Excavation equipment includes bulldozers, backhoes, front end loaders, graders, excavators, steam rollers and other equipment capable of being used for similar applications

[c] Pneumatic equipment includes pavement breakers

4.0 Noise Sensitive Areas and Receptors

Under the Joint Protocol, NSAs include the following land uses, provided they have an OLA associated with them:

- Private homes (single family units and townhouses);
- Multiple unit buildings;
- Hospitals and nursing homes;
- Schools, educational facilities, and daycare centres;
- Campgrounds with overnight accommodation;
- Hotels and motels; and
- Churches and places of worship.

The NSAs with OLAs identified within the Project Study Area are the existing dwellings and Conklin Subdivision. Twelve (12) representative receptors for existing NSAs, and seven (7) representative receptors from the proposed Conklin Subdivision were identified for this assessment. NSA locations were identified from a review of aerial imagery and the subdivision layout. Apartment balconies, cemeteries, parks and picnic areas that are not part of OLAs, commercial and industrial properties do not qualify as NSAs. A copy of the subdivision layout is included in Appendix A.

The receptors considered for the assessment are listed in Table 4-1 and are shown in Figure 2-1.

Table 4-1: Receptors

Receptor ID	Receptor ID	UTM Coordinates Zone 17 Easting (m)	UTM Coordinates Zone 17 Northing (m)
R01	Dwelling on County Road 20	355014	4655372
R02	Dwelling on County Road 20	354976	4655368
R03	Dwelling on County Road 20	355156	4655360
R04	Dwelling on County Road 20	354997	4655283
R05	Dwelling East of West Side Collector Road	355054	4655587
R06	Dwelling on O'Halloran Street	355495	4655886
R07	Dwelling on Road 2 West	355167	4656968
R08	Dwelling on Road 2 West	355407	4657007
R09	Dwelling on Road 2 West	355415	4657071
R10	Dwelling on Road 2 West	355318	4657075
R11	Dwelling on Road 2 West	355303	4657162
R12	Dwelling on Road 2 West	355147	4657168
R13	Conklin Subdivision	355331	4656737
R14	Conklin Subdivision	355330	4656679
R15	Conklin Subdivision	355324	4656622
R16	Conklin Subdivision	355298	4656565
R17	Conklin Subdivision	355294	4656502
R18	Conklin Subdivision	355261	4656076
R19	Conklin Subdivision	355241	4655782

The receptors represent the OLA of the NSA(s) and are located at 1.5 m above the existing ground surface and 3 m from the dwelling wall.

5.0 Operations Noise Assessment

The assessment predicts road traffic noise levels for the Future No-build and Future Build scenarios for the existing dwellings (R01-R12) and Future Build scenario for the subdivision receptors (R13-R19) for the 2042 horizon year:

- The Future No-build (without the Project) scenario – considers road traffic noise from the existing Heritage Road, Road 2 West, and County Road 20/Main Street West for the 2042 horizon year traffic; and
- The Future Build (with the Project) scenario – considers road traffic noise from the proposed West Side Collector Road and existing Heritage Road, Road 2 West and County Road 20/Main Street West for the 2042 horizon year traffic.

Project noise impacts are assessed in terms 16-hour equivalent sound level ($L_{eq\text{-}16hr}$) for the time period between 07:00 and 23:00 as per the guidelines for all receptors. Nighttime noise levels are assessed at the building façade for subdivision receptors in terms of 8-hour equivalent sound level ($L_{eq\text{-}8hr}$) for the time period between 23:00 and 07:00 as per NPC-300. In the absence of dwelling details for the subdivision, the same receptor locations are considered for daytime and nighttime assessment.

5.1 Assessment Methods

The MECP recommends the latest version of the United States Federal Highway Administration Traffic Noise Model (FHWA TNM©) for assessing road traffic noise in the recently published 'Methods to Determine Sound Levels Due to Road and Rail Traffic NPC-306', dated February 2020 which is currently in draft from MECP (MECP 2020).

The most current version of the US FHWA Traffic Noise Model (TNM v3.1) was used for this noise impact assessment. The road traffic noise model considers the following inputs:

- Annual Average Daily Traffic (AADT)
- Commercial vehicle percentages, including heavy and medium trucks
- Vehicle speed
- Shielding from intervening ground
- Pavement type
- Elevation profiles for the existing and new/modified roadways

Estimates of the AADT and commercial vehicle percentages used for the noise modelling were provided by the Project traffic team. The percentage of vehicles for day/night and heavy/medium truck were estimated based on Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) Technical Document (MECP, 1989).

A summary of the road traffic data used for noise modelling is listed in Table 5-1.

Table 5-1: Road Traffic Data for Noise Modelling

Road	2042 AADT	Commercial Vehicle %	Heavy/Medium Truck % [a]	Day/Night Split % [a]	Traffic Speed (km/h) [b]
County Road 20/Main Street W	10,520	2.8	60/40	90/10	50
Road 2 West	1,500	5.0	60/40	90/10	60
Heritage Road	4,780	2.6	60/40	90/10	50
West Side Collector Road	2,560	2.6	60/40	90/10	70
Local Roads for Subdivision	1,500	5.0	60/40	90/10	50

Notes:

Daytime refers to the time period between 07:00 and 23:00

[a] Estimated based on the recommended day-night traffic volume ratios provided in the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT) Technical Document.

[b] Current posted speed limits for the existing roads.

The noise model assumes flat ground based on the existing ground elevation.

5.2 Future Noise Impacts

Road traffic noise levels for the daytime period were predicted at the representative receptors for all NSAs for the Future Build scenario and just the existing NSAs for the Future No-Build scenario for the 2042 horizon year. Table 5-2 lists the predicted daytime noise levels and identifies if noise mitigation should be investigated based on the appliable guidelines.

Table 5-2: Predicted Daytime Noise Levels and Mitigation Requirements

Receptor ID [a]	Predicted Daytime ($L_{eq-16hr}$) Noise Levels (dBA)		Predicted Noise Impact			
	Future No-build (2042)	Future Build (2042)	Increase in Noise Levels [b] (dB)	Is Increase in Noise Levels > 5 dB? (Yes/No)	Future Build Noise Levels > 55 dBA? (Yes/No)	Mitigation Required? (Yes/No)
R01	50	53	3	No	No	No
R02	49	50	1	No	No	No
R03	49	49	0	No	No	No
R04	48	48	0	No	No	No
R05	39	47	8	Yes	No	No
R06	32	34	2	No	No	No
R07	31	37	6	Yes	No	No
R08	36	43	7	Yes	No	No
R09	41	44	3	No	No	No
R10	43	52	9	Yes	No	No
R11	43	44	1	No	No	No
R12	41	41	0	No	No	No
R13	-	54	-	N/A	No	No
R14	-	53	-	N/A	No	No
R15	-	51	-	N/A	No	No
R16	-	49	-	N/A	No	No
R17	-	44	-	N/A	No	No
R18	-	41	-	N/A	No	No
R19	-	42	-	N/A	No	No

Notes:

[a] R13 through R19 are the receptors representing the proposed subdivision.

[b] Change in noise level is calculated as the difference between Future Build and Future No-build road traffic noise levels.

Nighttime future noise levels were also predicted for the proposed subdivision receptors and reported in Table 5-3.

Table 5-3: Predicted Nighttime Noise Levels for Subdivision Receptors

Receptor ID [a]	Predicted Future Build Noise Levels (dBA)	Future Build Noise Levels > 50 dBA? (Yes/No)	Mitigation Required? (Yes/No)
R13	46	No	No
R14	45	No	No
R15	43	No	No
R16	42	No	No
R17	36	No	No
R18	32	No	No
R19	33	No	No

Note:

[a] Only subdivision receptors are assessed as required by the guidelines.

The predicted daytime noise levels indicate that the Future Build noise level is expected to increase over 5 dB at some of the existing receptors (R05, R07, R08 and R10). However, none of them exceed 55 dBA absolute daytime noise limit to consider for noise mitigation.

Similarly, predicted Future Build nighttime noise levels at the proposed subdivision receptors (R13-R19) were within the 50 dBA nighttime MECP limit. Therefore, noise mitigation was not warranted for the Project operations.

Sample calculations from the noise model are included in Appendix B.

6.0 Construction Noise Assessment

This section of the report provides an evaluation of construction equipment noise and discusses the Code of Practice to reduce construction noise impacts.

Construction activities will vary temporally and spatially as the Project progresses one end to the other. Noise levels from construction at a given receptor location will also vary over time as different activities take place, and as those activities change location within the right-of-way.

6.1 Construction Noise Levels

Table 6-1 lists the construction equipment considered for the assessment and a comparison of their noise emissions to the applicable NPC-115 and NPC-118 noise limits. A detailed construction plan or equipment list is not currently available. Table 6-1 represents typical equipment expected to be used for this type of construction. The listed construction equipment noise emissions are based on Stantec's database of field measurements of construction equipment.

Table 6-1: Construction Equipment Sound Level Assessment

Type of Equipment	Typical Range of Maximum Sound Levels at 15 m (dBA)	NPC-115/118 Sound Level at 15 m (dBA)	Meets NPC-115/118 Sound Level? (Y/N)
Front-End Loaders	77 – 85	85	Y
Backhoe	66 – 80	85	Y
Auger	76 – 84	85	Y
Dump Trucks	76 – 88	95[b]	Y
Concrete Trucks	77 – 85	85	Y
Concrete Pump and Boom	77 – 82	85	Y
Vibratory Compactors	79 – 83	85	Y
Paving Machines [a]	77 – 89	85	N
Cranes	73 – 83	85	Y
Grader	79 – 85	85	Y

Notes:

[a] These equipment units have potential to exceed the applicable MECP limits and precautions/noise control feasibility should be investigated if they are used near sensitive receptors.

[b] Refers to the NPC-118 Sound Level at 15 m.

The typical sound levels presented in Table 6-1 show that most equipment expected for this type of Project can be operated in compliance with the MECP NPC-115/118 limits. The list also shows that there is the potential for higher sound levels than permissible limits for paving machines. Once equipment and construction schedules are finalized, the equipment noise data should be reviewed during detailed design to confirm that noise emissions are within the permissible limits. If the sound levels are higher than the limits, noise control options should be explored.

6.2 Construction Code of Practice

The following best practices for construction should be considered to minimize disturbances outside of the noise by-law requirements:

- All construction equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order.
- There should be explicit indication that Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws. Enforcement of noise control by-laws is the responsibility of the Municipality for all work done by Contractors.
- The Contract documents should contain a provision that any initial noise complaint will trigger verification of construction noise and typical noise control measures.
- In the presence of persistent noise complaints, all construction equipment should be verified to comply with MECP NPC-115 and NPC-118 guidelines.
- In the presence of persistent complaints and subject to the results of a field investigation, alternative noise control measures may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration should be given to the technical, administrative, and economic feasibility of the various alternatives.

7.0 Conclusion and Closure

The noise impacts from the proposed West Side Collector Road were assessed. Both road traffic (operational) and construction noise impacts were considered in the assessment.

Nineteen (19) receptors representing NSAs within the Study Area were considered for the assessment, and they include both existing dwellings (R01-R12) and the proposed subdivision (R13-R19).

The predicted daytime noise levels indicate that the Future Build noise level is expected to increase over 5 dB at four receptors (R05, R07, R08 and R10). However, none of them exceed 55 dBA absolute daytime noise limit to consider for noise mitigation. Similarly, predicted Future Build nighttime noise levels at the subdivision receptors (R13-R19) were within the 50 dBA nighttime MECP limit. Therefore, noise mitigation is not warranted for the Project operations.

It is expected that most of the construction equipment typical for this type of Project can be operated in compliance with the MECP limits. However, there is potential for higher sound levels for some equipment (e.g., paving machines). Once equipment and construction schedules are finalized, construction equipment sound levels should be reviewed to confirm that nose emissions are within permissible limits. If they are higher than the limits, noise control options should be explored for the construction equipment exceeding the limits. Methods to reduce construction noise impacts are included in the Construction Code of Practice, as outlined in Section 6.2.

8.0 References

Ontario Ministry of Energy and Environment/Ministry of Transportation. 1986. "Joint Protocol," A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highway's Environmental Assessments."

Ontario Ministry of the Environment, Conservation and Parks. 2013. MECP NPC-300 Environmental Noise Guideline – Stationary, and Transportation Sources – Approval and Planning in the context of land use planning.

Ontario Ministry of the Environment, Conservation and Parks. 2020. MECP NPC-306 "Methods to Determine Sound Levels Due to Road and Rail Traffic."

Ontario Ministry of the Environment, Conservation and Parks. 1977. "Model Municipal Noise Control Bylaw - Publication NPC - 115, Construction Equipment."

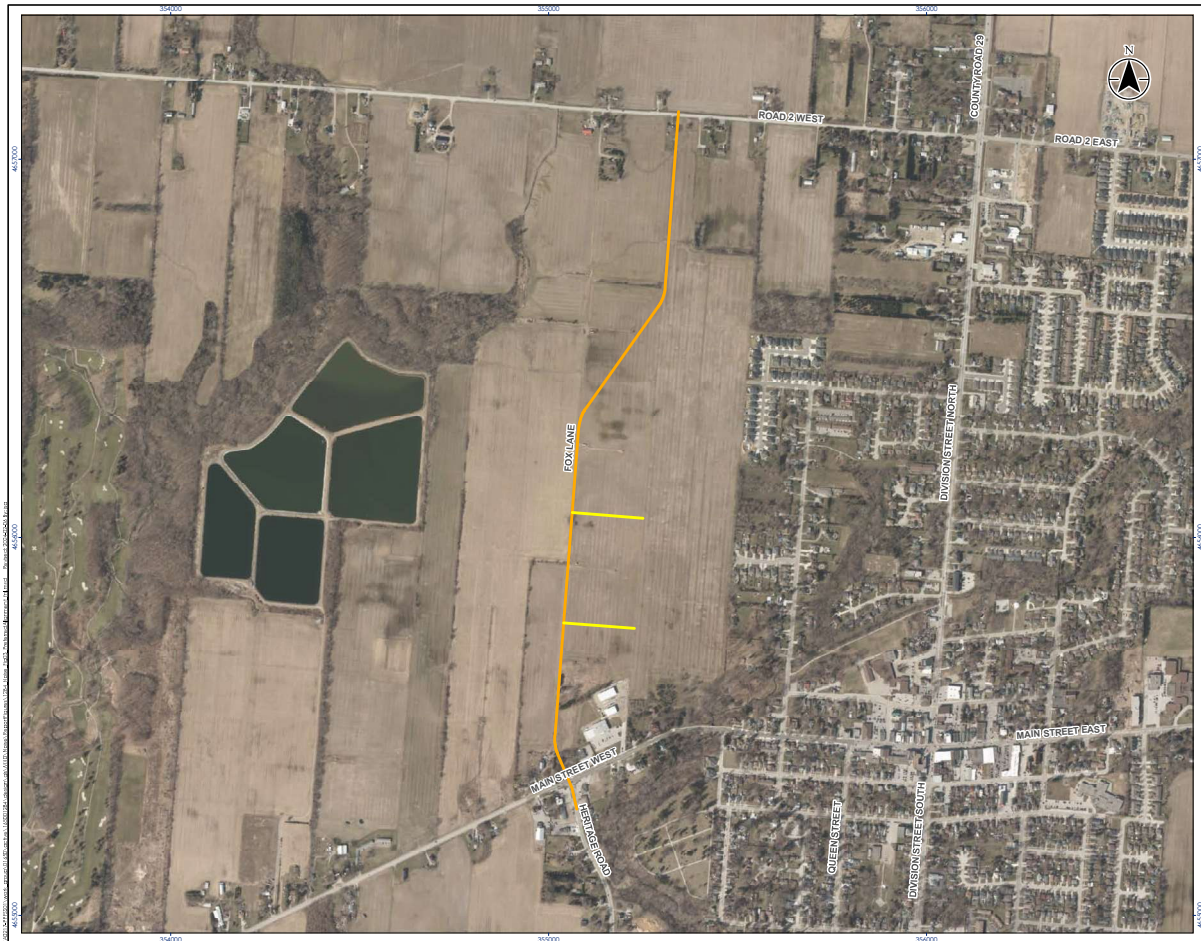
Ontario Ministry of the Environment, Conservation and Parks. 1982. "Publication NPC-118 for Motorized Conveyances."

Ontario Ministry of the Environment, Conservation and Parks (MECP), 1989, Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT).

Ontario Ministry of Transportation. 2006. "Environmental Guide for Noise, Version 1.1."

The Corporation of the Town of Kingsville. 2006. "By-law Number 28-2006."

Appendix A
Project Preferred Plan and Subdivision Layout



Stantec

Legend

Proposed Alignment

- West Side Collector Road
- Local Road

0 250 Metres

1:10,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2022.
3. Orthoimagery obtained from ©First Base Solutions , Essex County, 2022

Project Location: Town of Kingsville

165001284 REV4

Prepared by JSa on 2024-02-06

Client/Project:

TOWN OF KINGSVILLE

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, CONSTRUCTION OF A WEST SIDE COLLECTOR ROAD

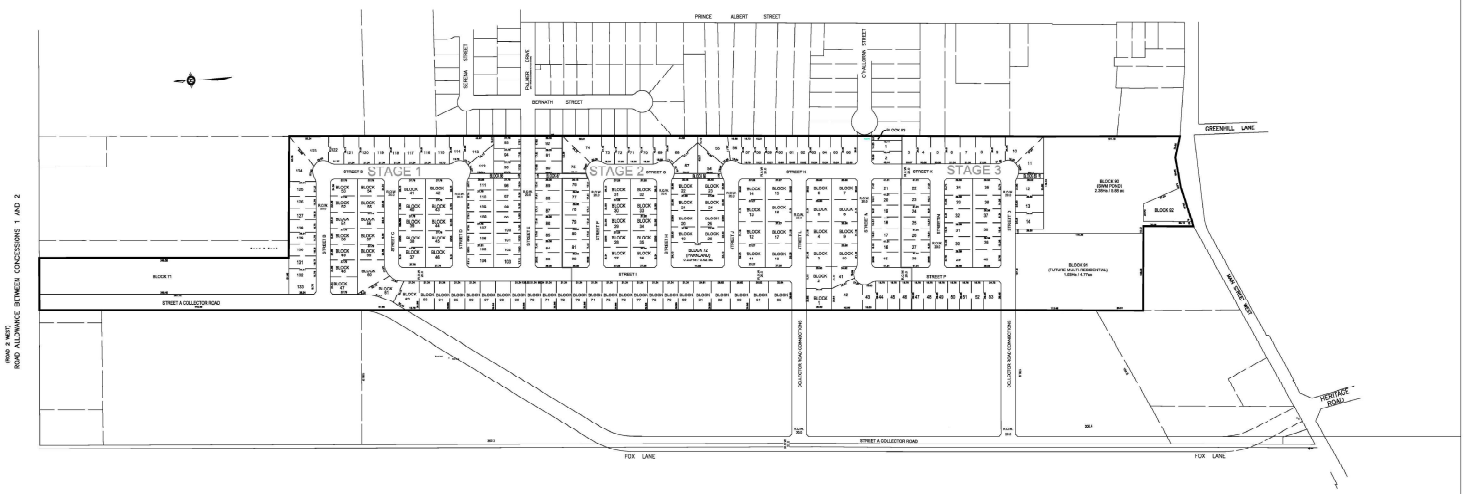
Figure No.

Appendix A

Title

Preferred Alignment

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AMICO ENGINEERING INC.

No.	Issued For	Date
1	DRAFT PLAN OF SUBDIVISION SUBMITTAL	08/26/21

SITE INFORMATION:

SINGLE FAMILY DWELLINGS =	133 UNITS - 10.40Ha / 25.70 ac
SEMI-DETACHED DWELLINGS =	170 UNITS - 8.06Ha / 19.92 ac
TOTAL NUMBER OF UNITS	303 UNITS - 18.46Ha / 45.62 ac
MULTI-RESIDENTIAL =	1.93Ha / 4.77 ac
S.W.M. POND =	2.36Ha / 5.86 ac
TOTAL AREA OF SUBDIVISION =	32.46 Ha / 80.21 ac
TOTAL RESIDENTIAL AREA =	20.16Ha / 49.82 ac
RESIDENTIAL DENSITY =	16.62 UNITS PER HECTARE
TOTAL NUMBER OF LOTS =	133
TOTAL NUMBER OF BLOCKS =	92

AMICO

CONKLIN SUBDIVISION
TOWN OF KINGSVILLE

1 Sheet No.

DRAFT PLAN OF SUBDIVISION (DRAFT)

Scale: 8/26/2021	Drawn By: KHK
Date: 8/26/2021	Checked By: GJB

Appendix B
Sample Calculations

REPORT:	**Results: Future Build (Day) Sound Levels**		
TNM VERSION	3.1.7970.3 7608	REPORT DATE:	19 April 2023
CALCULATED WITH:	3.1.7970.3 7608	CALCULATION DATE:	4/19/2023 9:18:23 AM
CASE:	TNM	ORGANIZATION: Stantec	
UNITS:	Metric	ANALYSIS BY:	
DEFAULT GROUND TYPE:	Lawn	PROJECT/CONTRACT: West side Collector Road Kingsville	
ATMOSPHERICS:	20°C, 50%	Average pavement type shall be used unless a state	
PAVEMENT TYPE(S) USED:	Average	highway agency substantiates the use of a different	

Receiver		Modeled Traffic Noise Levels				
		LAeq		Increase over Existing		
Name	No.		Absolute		Relative	Type
		Calc.	Criterion	Calc.	Criterion	of
		dBA	dBA	dBA	dBA	Impact
Receiver-1	1	52.5	55.0	---	---	Sound Level
Receiver-2	2	50.2	55.0	---	---	Sound Level
Receiver-3	3	48.9	55.0	---	---	Sound Level
Receiver-4	4	48.3	55.0	---	---	Sound Level
Receiver-5	5	47.1	55.0	---	---	Sound Level
Receiver-6	6	33.6	55.0	---	---	Sound Level
Receiver-7	7	36.8	55.0	---	---	Sound Level
Receiver-8	8	43.3	55.0	---	---	Sound Level
Receiver-9	9	44.1	55.0	---	---	Sound Level
Receiver-10	10	51.9	55.0	---	---	Sound Level
Receiver-11	11	44.3	55.0	---	---	Sound Level
Receiver-12	12	41.4	55.0	---	---	Sound Level
Receiver-13	13	53.8	55.0	---	---	Sound Level
Receiver-14	14	53.0	55.0	---	---	Sound Level
Receiver-15	15	50.7	55.0	---	---	Sound Level
Receiver-16	16	49.5	55.0	---	---	Sound Level
Receiver-17	17	44.2	55.0	---	---	Sound Level
Receiver-18	18	41.3	55.0	---	---	Sound Level
Receiver-19	19	41.9	55.0	---	---	Sound Level

Appendix L - Air Quality Assessment

Stantec

Memo

To:	Town of Kingsville	From:	Connie Lim, Boris Chen, Michael Murphy Stantec Consulting Ltd.
Project/File:	165001284	Date:	March 15, 2024

Reference: West Side Collector Road,
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment

1 Introduction

Stantec Consulting Ltd. was retained by the Town of Kingsville to conduct an air quality assessment to support the Municipal Class Environmental Assessment Study for the construction of West Side Collector Road (the Project), which will provide a safe and accessible multi-modal transportation route to accommodate future growth and development for the Town. The purpose of this memo report is to provide a qualitative assessment of the potential air quality impacts on the local area resulting from the planned construction of West Side Collector Road, which is an extension of Heritage Road from Main Street West to Road 2 West in the Town of Kingsville. The subject road extension in the Project is approximately 1.8 km in length and is shown in **Attachment A, Figure A-1**.

The current Heritage Road (County Road 50) is a north-south minor collector road that extends southerly from Main Street West towards Lake Erie, where it turns to the west and extends along the Lake Erie shoreline. Heritage Road has a posted speed limit of 50 km/h and a two-lane cross-section, 1-metre paved shoulders and concrete curbs. Although Heritage Road is signed as County Road 50, the first 500 meter south of Main Street is designated as a connecting link.

Main Street West (County Road 20) is an east-west two-lane cross-section arterial road with a posted speed limit of 50 km/h. Although Main Street is signed as County Road 20, the section west of Heritage Road and extending easterly through the urban section of Kingsville is designated as a connecting link.

Road 2 West is the first east-west concession road north of Main Street. It is classified as a secondary road west of Division Street and as a minor arterial road east of Division Street. It traverses a predominantly rural area, other than a small residential cluster near Division Street. The road has a posted speed limit of 60 km/h and a two-lane cross-section.

The Project includes an extension of Heritage Road (i.e. West Side Collector Road) from Main Street West to Road 2 West, two local road connecting links, active transportation infrastructure and intersection improvements. The objective of the Project is to provide a safe and accessible multi-modal transportation network to accommodate future growth and development for the Town. The Project Area is shown in **Figure A-1, Attachment A**, and includes the proposed West Collector Road that extends from the intersection at Main Street West to Road 2 West. The Project Area and Study Area Map is provided in **Attachment A, Figure A-1.**

Reference: **West Side Collector Road,**
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment

As identified by the Ministry of the Environment, Conservation and Parks (MECP) in a letter dated January 25, 2024, a qualitative review of air quality is required to support the Municipal Class Environmental Assessment (EA) for the Project. This memo report is one of the technical studies used to support the EA process and provides a review of pertinent air quality guidelines and standards, a review of the existing ambient air quality, the identification of current and future sensitive and critical receptors in the Project area, a comparison of current and projected traffic in the Project area, a discussion of local air quality effects that could arise from the Project during construction and operation, and potential mitigation measures that could be undertaken to reduce the potential impacts.

2 Ambient Air Quality in Project Area

Ambient air quality in the Project area may be influenced by emissions from local commercial/industrial or agricultural sources and vehicular traffic. The regularly assessed air contaminants of interest (COI) for transportation assessments in Ontario include the following criteria air contaminants (CACs), volatile organic compounds (VOCs), and an indicator polycyclic aromatic hydrocarbon (PAH). These are based on guidance from the Ontario Ministry of Transportation (MTO), and are listed in the MTO *Environmental Guide for Assessing and Mitigating the Air Quality Impacts and Greenhouse Gas Emissions of Provincial Transportation Projects* (MTO Guide, 2020):

- Nitrogen Dioxide (NO_2)
- Carbon Monoxide (CO)
- Ozone (O_3)
- Particulate Matter less than 10 microns (PM_{10})
- Particulate Matter less than 2.5 microns ($PM_{2.5}$)
- Acrolein
- Benzene
- 1,3-Butadiene
- Acetaldehyde
- Formaldehyde
- Benzo(a)pyrene (B(a)P)

A summary of the pertinent air quality objectives, guidelines, and standards for the COI is presented in **Table 1** according to the following applicable air contaminant guidelines from relevant agencies and organizations in Canada. The provincial Ambient Air Quality Criteria as well as the current and proposed federal Canadian Ambient Air Quality Standards (CAAQS) were considered and included in the table.

- Ontario Ministry of the Environment, Conservation and Parks (MECP) Ambient Air Quality Criteria (AAQC)
- Canadian Council of Ministers of the Environment (CCME) Canadian Ambient Air Quality Standards (CAAQS)

Reference: **West Side Collector Road,**
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment

Table 1 Summary of Applicable Ambient Air Quality Standards for Contaminants of Interest (COIs)

COI	CAS No.	Basis	Air Quality Standard		
			1-Hour (µg/m^3)	24-Hour (µg/m^3)	Other Time Period (µg/m^3)
Nitrogen Dioxides [A]	10102-44-0	AAQC	400	200	
		CAAQS	2020: 119 [B] 2025: 83 [B]		2020: 33.7; annual [B] 2025: 23.8; annual [B]
Carbon monoxide	630-08-0	AAQC	36,200	-	15,700; 8-hour
Ozone	10028-15-6	AAQC	165	-	-
		CAAQS	-	-	2020: 128; 8-hour [C] 2025: 124; 8-hour [C]
$PM_{2.5}$	-	CAAQS	-	27 [D-1]	8.8; annual [D-2]
PM_{10}	-	AAQC	-	50 [E]	-
1,3-butadiene	106-99-0	AAQC	-	10	2; annual
Acetaldehyde	75-07-0	AAQC	-	500	500; ½ hour
Acrolein	107-02-8	AAQC	4.5	0.4	-
Benzene	71-43-2	AAQC	-	2.3	0.45 annual
Formaldehyde	50-00-0	AAQC	-	65	-
Benzo(a)pyrene	50-32-8	AAQC	-	0.00005	0.00001; annual

Notes:

[A] Schedule 3 standards for NOx are based on health effects of NO_2, as NO_2 has adverse health effects at much lower concentrations than NO.

[B] CAAQS for 2020 for a one-hour average is 60 ppb (119 µg/m^3) and for an annual average is 17 ppb (33.7 µg/m^3). CAAQS for NO_2 for 2025 for a one-hour average is 42 ppb (83 µg/m^3) and for an annual average is 12 ppb (23.8 µg/m^3). The hourly standard objective is referenced to the three-year average of the annual 98th percentile of the daily maximum one-hour average concentrations. The annual CAAQS is the average over a single calendar year of all 1-hour average concentrations. The criteria were converted from ppb to µg/m^3 based on a standard temperature of 10°C and pressure of 1 atm as per MTO Guide (MTO, 2020).

[C] CAAQS for ozone, effective by 2020 is 62 ppb (128 µg/m^3) and effective by 2025 is 60 ppb (124 µg/m^3) (CCME 2012). The Ozone Objective is referenced to the 3-year average of the annual 4th highest daily maximum 8-hour average concentrations.

[D-1] CAAQS for Fine Particulate Matter ($PM_{2.5}$), effective by 2020 (CCME 2012). The Fine Particulate Matter Objective is referenced to the 98th percentile daily average concentration averaged over 3 consecutive years.

[D-2] Annual Canadian Ambient Air Quality Standards for Fine Particulate Matter $PM_{2.5}$, effective by 2020 (CCME, 2012). The Fine Particulate Matter Objective is referenced to the 3-year average of the annual average concentrations.

[E] AAQC for PM_{10} is an interim AAQC provided as a guide for decision-making.

The related air quality measurement data from ambient air monitoring in southern Ontario conducted by the National Air Pollution Surveillance Program (NAPS) operated by Environment and Climate Change Canada (ECCC) were reviewed. The NAPS program continuously measures NO_2, CO, ozone (O_3), and $PM_{2.5}$, as well as non-continuous monitoring of VOCs and other air contaminants. Background concentrations for PM_{10} were based on $PM_{2.5}$ monitoring data converted using typical $PM_{10}/PM_{2.5}$ ratios in atmospheric particulate matter based on monitoring data from NAPs monitoring stations across Canada (Brook et al, 1997).

**Reference: West Side Collector Road,
Municipal Class Environmental Assessment Study
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The NAPS network data used to characterize existing air quality in the Project area are presented in **Table 2** (below). The monitoring stations were selected for the assessment based on their proximity to the Project area as well as similar land use. Where available, monitoring data for the most recent available years were reviewed. Some data sets were not included in the assessment as they were considered invalid per the MECP's Operations Manual for Air Quality Monitoring in Ontario (MECP, 2018). These are also noted below.

Table 2 NAPS Locations Considered in the Study

COI	NAPS Station ID	NAPS Station Name	Station Address	Station City	Years	Excluded Data Sets[1]
NO_2	065801	Chatham	435 Grand Avenue West	Chatham	2017 – 2021	
CO	060204	Windsor	467 University Avenue West	Windsor	2017 – 2021	
Ozone	065801	Chatham	435 Grand Avenue West	Chatham	2017 – 2021	
PM_{10} [2]/ $PM_{2.5}$	065801	Chatham	435 Grand Avenue West	Chatham	2017 – 2021	
1,3-butadiene	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017 – 2021	2020
Acetaldehyde	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017 – 2019	
Acrolein	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017[3]	
Benzene	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017 – 2021	2020
Formaldehyde	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017 – 2019 [4]	
Benzo(a)pyrene	062601	Experimental Farm Simcoe	Experimental Farm (1283 Blueline Road)	Simcoe	2017 – 2021	2020 – 2022

Notes:

[1] Data sets for these years had less than 75% recovery rate and are therefore not considered valid as per MECP guidelines (MECP, 2018).

[2] Background concentrations for PM_{10} were based on $PM_{2.5}$ monitoring data converted using typical $PM_{10}/PM_{2.5}$ ratios in atmospheric particulate matter. Based on monitoring data collected at NAPS monitoring stations across Canada, on average, $PM_{2.5}$ accounted for 49% of PM_{10} (Brook et al, 1997).

[3] Data not available before and after 2017.

[4] Data not available after 2019.

**Reference: West Side Collector Road,
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment**

The existing air quality was characterized as follows:

- The maximum 90th percentile concentrations for short-term averages (24-hour and less than 24-hour averages), and annual average concentrations over all five years (where available) at the selected stations, were assessed and compared with the AAQC, and used for characterizing the existing air quality for the Project area. The use of the 90th percentile (for short-term averages) of the most recently measured monitoring data from the nearest MECP or ECCC monitoring stations to represent the background concentration is consistent with the MTO guidance document (MTO, 2020).
- When comparing with CAAQS, the COI concentrations presented in **Table 3** were referenced based on their respective CAAQS statistical metric addressed on CCME's guidance (CCME, 2020) and noted in **Table 3** below.

The 90th percentile, annual average concentrations or other statistical metrics as noted for applicable averaging periods are listed below in **Table 3**. The current applicable criteria are also shown in this table for comparison.

Reference: **West Side Collector Road,**
Municipal Class Environmental Assessment Study
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Table 3 Summary of Background COI Air Quality Levels

COI	CAS No.	Averaging Period	Background Concentration	Air Quality Standard		% of Criteria
		(hours)	(µg/m³)	(µg/m³)	Reference	%
NO_2	10102-44-0	1	64[1]	83[1]	2025 CAAQS	77%
			22	400	AAQC	5%
		24	20	200	AAQC	10%
		Annual	12.0[1]	23.8[1]	2025 CAAQS	50%
CO	630-08-0	1	446	36200	AAQC	1%
		8	482	15700	AAQC	3%
Ozone	10028-15-6	1	95	165	AAQC	58%
		8	133 [2]	124[2]	2025 CAAQS	107%
PM_{10}	N/A	24	35	50	AAQC	71%
$PM_{2.5}$	N/A	24	17.3 [3]	27[3]	CAAQS	64%
		Annual	7.0 [3]	8.8[3]	CAAQS	80%
1,3-butadiene	106-99-0	24	0.28	10	AAQC	3%
		Annual	0.11	2	AAQC	6%
Acetaldehyde	75-07-0	0.5[4]	20.7	500	AAQC	4%
		24	7.0	500	AAQC	1%
Acrolein	107-02-8	1[4]	0.019	4.5	AAQC	0.4%
		24	0.008	0.4	AAQC	2%
Benzene	71-43-2	24	0.49	2.3	AAQC	21%
		Annual	0.26	0.45	AAQC	59%
Formaldehyde	50-00-0	24	1.5	65	AAQC	2%
Benzo(a)pyrene	50-32-8	24	4.06E-05	0.00005	AAQC	81%
		Annual	1.79E-05	0.00001	AAQC	179%

Notes:

[1] The 98th percentile and annual average background concentrations of NO_2 are compared with the 2025 1-hour and Annual CAAQS. The 1-hour and Annual 2025 CAAQS for NO_2 are referenced to the three-year average of the annual 98th percentile of the daily maximum one-hour average concentrations, and the annual average concentration, respectively. Concentration conversion from ppb to µg/m³ is based on standard temperature of 10 degrees C and 1 atm per MTO guidance (MTO, 2020).

[2] The maximum of the 3-year average of the annual 4th highest daily maximum 8-hour average ozone concentration was compared with the 2025 8-hour CAAQS for ozone.

[3] The 98th percentile and 3-year annual average background concentrations of $PM_{2.5}$ are compared with the 24-hour and Annual CAAQS for $PM_{2.5}$ which are referenced to the 98th percentile daily average concentration averaged over 3 consecutive years, and 3-year average of the annual average concentrations, respectively.

[4] Concentration for this averaging period is converted from a one-hour or 24-hour concentration based on the MECP recommended conversion factor and methodology.

The 3-year average of the annual 4th highest daily maximum 8-hour ozone concentration exceeds the CAAQS by 7%. The 1-hour background ozone concentration is 58% of the AAQC. In general, ground level ozone concentrations are lower in large urban centres because ozone is depleted by reacting with NO emitted by vehicles and other local combustion sources (MECP, 2023). In Ontario, the highest concentrations of ground-level ozone are typically recorded on hot and sunny days mainly from May to September, between noon and early evening. Ozone levels were measured to exceed Ontario's AAQC during the warmer months in southwestern Ontario, but were well below the AAQC during the winter months (MECP, 2023).

The annual background B(a)P concentration exceeds the AAQC by 79%. Exceedances of the AAQC for B(a)P are commonly measured in Ontario, including rural areas. Background B(a)P concentrations presented in **Table 3** are from the Experimental Farm in Simcoe. There is limited monitoring data for B(a)P in the vicinity of the Study Area. The land use at this monitoring station is generally representative of the current rural land use within the Study Area.

3 Land Uses and Nearby Receptors

The Project is located in the Town of Kingsville, between Main Street West to Road 2 West, approximately 1 km west of Division Street North. A Study Area of 500 m radius (**Attachment A, Figure A-1**), per MTO guidance (MTO, 2020), surrounding the Project is identified for this assessment of potential impacts on air quality.

The current land use within the Study Area is mainly agricultural with some residential properties along Main Street and Road 2 West. Based on the Town of Kingsville Land Use Plan Schedule "A" and Schedule "A-2", these areas are currently zoned Agricultural and Residential, and Highway Commercial near the intersection of Heritage Road and Main Street West. The Land Use Plans are provided in **Attachment A**.

Receptors are established as locations where human activity regularly takes place. Receptors near the Project Footprint and in the Study Area were identified and characterized as part of the assessment. Based on the MTO Guide (MTO 2020), receptors are characterized as sensitive receptors and critical receptors. Sensitive receptors include residential dwellings. Critical receptors include, for example, schools, hospitals, retirement homes, and childcare centres, and similar institutional buildings (MTO 2020). Land uses that contain critical receptors and representative sensitive receptors in the Study Area were identified for this assessment. Representative sensitive receptors identified within the Study Area include residential houses and farmhouses. Critical receptors identified within the 500 m Study Area include two places of worship, one is within the Project Area at the intersection of Heritage Road and Main Street West, and the other is approximately 420 m to the east of the Project Area. Most of the critical receptors identified are located in the downtown Kingsville area outside of the 500 m Study Area. A few representative critical receptors outside of the 500 m Study Area include a daycare, school and places of worship which are approximately 600 – 750 m from the Project Area. A list of the identified receptors and a figure showing their locations are presented in **Attachment B**.

A future multiphase residential development (Conklin Subdivision) is proposed east of the new West Side Collector Road. This proposed development will be located immediately east of the Project Area (shown as "Future Sensitive Receptor" in **Attachment B, Figure B-1**). The proposed subdivision will be connected to the West Side Collector Road through two local roads. There is also potential for additional development in the area to the west of the West Side Collector Road.

Reference: **West Side Collector Road,**
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4 Existing Transportation Network

The Study Area consists mainly of agricultural land as identified above and in the Land Use Plans (Attachment A). The existing Fox Lane, which runs north-south between Main Street West and Road 2 West, is a partially privately-owned road and mainly used by agricultural vehicles in the surrounding farms.

Based on the Town of Kingsville Comprehensive Transportation Master Plan (CTMP) dated August 2022 (Town of Kingsville, 2022), the Town's transportation network according to 2016 census data is comprised of a variety of modes of transport including travel by walking (3%), cycling (1%), transit (1%) and car (95%) (Town of Kingsville, 2022). Out of the 95% vehicular travel, about 6% are passengers, while the rest of the 89% are drivers. The majority of commuters spend 30 minutes or less commute times to and from work (Town of Kingsville, 2022).

Kingsville does not have an internal conventional transit system. There is a Leamington to Windsor bus route and it provides intercommunity services with stops in Kingsville and Essex. The bus route does not travel through central Kingsville, with service provided to the Kingsville Arena only (Town of Kingsville, 2022).

Active Transportation refers to human-powered transportation such as walking, cycling, using a wheelchair, scootering, and skateboarding. Based on the CTMP, the current Active Transportation in the vicinity of the Study area includes a multi-use path along Prince Albert Street North, north of Main Street West. Along Division Street North (the key corridor in downtown Kingsville), the multi-use path is not continuous, and only exists between Palmer Drive and Road 2 West (Town of Kingsville, 2022). The Active Transportation network is disconnected both within the downtown area and in the Study Area.

5 Traffic Change and Projections

Based on the CTMP, the Town currently has a population of 22,119 (2021 census data). The Town's forecasted growth is 25,088 by the year 2031 (13% increase from 2021). The forecasted employment growth of the Town will reach 7,930 to 8,450 employees by 2031, an increase of 1,410 to 1,920 employees from 2016.

The Traffic Study (Stantec, 2023) for Heritage Road Extension from Main Street West to Road 2 West was conducted to analyze existing and future traffic operations at one existing intersection and two future intersections along the segment. Existing traffic conditions are based on data for year 2022. Existing traffic volumes were used to project traffic volumes for the future horizon year 2042 by applying a fixed 1% as an annual growth rate. The Traffic Study was conducted to forecast traffic volumes in the future horizon year using the annual growth rate and adding expected re-routed traffic and trips generated by future developments through future local roads. The study also carried out intersection capacity analysis to identify potential future traffic issues and propose mitigation measures.

Based on the Traffic Study (Stantec, 2023), the projected traffic volumes and growth values for the future horizon year at selected intersections in the Study Area are presented in the table below.

Table 4 Existing Year and Future Horizon Year Traffic Volumes and Growth

Location	Existing 2022		Future 2042		Growth %	
	AM [1]	PM [1]	AM [1]	PM [1]	AM [1]	PM [1]
Main Street, East of Heritage	330	375	396	450	20%	20%
Main Street, West of Heritage	210	392	327	569	56%	45%
Heritage Road, south of Main	88	190	130	265	48%	39%
Heritage Road (West Side Collector Road), north of Main	N/A [2]	N/A [2]	87	135	N/A [2]	N/A [2]

Note:
[1] AM – AM peak period. PM – PM peak period
[2] N/A - No traffic data for existing year. Heritage Road does not extend north of Main Street prior to the Project

As presented above, the projected traffic volume growth compared to the existing year is expected to be between 20% and 56% at these select locations. There is no existing traffic data on Heritage Road north of Main Street (i.e. proposed West Side Collector Road) as it is currently not existent. As the Traffic Study does not include a future no-build scenario, traffic volumes cannot be compared between the future no-build and future build scenarios.

6 Road Improvements and Active Transportation

The CTMP provides a framework for the continued development of the Town's multi-modal transportation system. The CTMP was developed using the Municipal Class Environmental Assessment process to analyze the existing transportation network to identify issues and opportunities. Alternative solutions were developed and assessed to identify a preferred Town-wide solution (Town of Kingsville, 2022). The CTMP assessed three alternative scenarios:

1. Do nothing
2. Widening of key east-west and north-south roads, and
3. Multi-modal strategy and by-pass options for east-west travel

Based on analysis and through consultation and engagement, Alternative 3 was selected as the preferred alternative. Alternative 3 recommendations include enhancement of the Active Transportation network, transit service improvements, and road network improvements to address future growth and to improve goods movement along Main Street/County Road 20 (the main east-west road) and Division Road (the main north-south road) (Town of Kingsville, 2022).

One of the road network improvement recommendations is to construct an extension of Heritage Road between Main Street West and Road 2 West to create a by-pass. The Heritage Road extension (i.e. West Side Collector Road) will run parallel to Division Street and will provide an alternative to the northbound and eastbound traffic from Main Street West and Heritage Road intersection traffic and Main Street East and Kratz Road intersection traffic to bypass Main Street and Division Street downtown traffic (Town of Kingsville, 2022).

Due to increased traffic at the Heritage Road and Main Street West intersection, the northbound approach is anticipated to operate with a low level of service in the future based on the Traffic Report (Stantec, 2022). A low level of service represents a poor quality of service for a transportation facility, and in this case,

significant delays at the intersection. Signalization at the Heritage Road and Main Street West intersection was reviewed as a mitigation measure. The signalized intersection is predicted to improve traffic flow and results in a high level of service (Stantec, 2022). A signalized intersection at this location is included in the Project.

A major component of the CTMP is improving and enhancing Active Transportation to align with the Town's overall vision of providing a safe and accessible multi-modal transportation network for all users. Based on the Traffic Study (Stantec, 2023), the following active transportation network has been proposed in the Study Area:

- Signed route along Heritage Road, south of Main Street intersection
- Paved shoulder along Main Street, west of Heritage intersection
- Multi-use path (MUP) along Main Street, east of Heritage intersection
- Cycle track along Heritage Road extension

7 Assessment of Potential Impact on Air Quality

7.1 Assessment of Potential Impact on Air Quality from Construction

During the construction phase of the Project, emissions to the atmosphere will occur primarily due to fuel combustion from vehicles and construction equipment, as well as fugitive dust from construction activities. While these emissions have the potential to cause a nuisance to nearby receptors, with the proper mitigation measures implemented, emissions from construction phase and adverse changes in local air quality can be controlled to reduce any potential exceedances of a standard.

The ECCC guideline "Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities" (ECCC, 2005) provides recommendations for mitigation measures to reduce construction emissions. These measures include material wetting or use of chemical suppressants to reduce dust, use of wind barriers and limiting exposed areas, equipment washing, proper maintenance of construction equipment and vehicles, and introduction of no-idling policy to control construction vehicle emissions where applicable. Construction best management practices will be developed and implemented during the construction phase for this Project. The contractor may consider following ECCC's guideline on ambient monitoring of dust or combustion gases (e.g., NO_2), to measure contaminant concentrations, detect potential exceedances of a standard, adjust mitigation measures and confirm effectiveness.

7.2 Assessment of Potential Impact on Air Quality from Operation

Due to the projected growth in population and employment in the Town of Kingsville, traffic volumes are expected to increase (Town of Kingsville, 2022). The CTMP recommends Alternative 3 as the most appropriate road network alternative to address the forecasted growth. Coupled with the active transportation and transit recommendations, this Alternative provides a multi-modal framework to move people and goods. It supports the goods movement industry but also preserves and enhances the downtown for people living and visiting there (Town of Kingsville, 2022).

**Reference: West Side Collector Road,
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Based on the CTMP analysis, two corridors, Main Street and Division Street will likely experience congestion and vehicle delays during PM peak hour conditions in the future if no changes/mitigations are implemented. To alleviate the congestion in the downtown area and the main downtown corridor (Division Street), one of the recommendations in the CTMP is to construct an extension of Heritage Road between Main Street West and Road 2 West to create a by-pass (Town of Kingsville, 2022). The Heritage Road extension will run parallel to Division Street and will provide an alternative route to bypass Main Street and Division Street North downtown traffic. Based on CTMP analysis, trips are re-distributed to enter the Heritage Road Extension route from Main Street West and Heritage Road intersection. Together with other recommended road improvements which are not part of the Project, such as the recommended road improvement to Kratz Road, the CTMP predicts that the proposed road capacity improvements are adequate to meet future demand and relieve traffic congestion from existing corridors like Main Street and Division Street North.

As noted above, a future multiphase residential development is proposed to the east of the new West Side Collector Road. The Project is to provide necessary access to the potential residential development as well as support expected increase in traffic due to the potential future residential development.

A major component of the CTMP is to integrate Active Transportation infrastructure with the overall multi-modal transportation strategy in order to create a cohesive network that is considered safe, equitable and accessible for users of all ages and abilities. The Heritage Road extension will include a cycle track as recommended by the CTMP. In addition, along Main Street, there will be a multi-use path east of Heritage intersection, and paved shoulders west of Heritage intersection.

Project implementation is expected to help reduce emissions and improve local air quality compared to without Project implementation due to:

- The traffic in the area will increase even without Project implementation due to projected growth as forecasted by the CTMP as well as the potential new residential developments in the area. The Project is part of the road network improvements which will improve traffic flow and traffic conditions and alleviate congestion in the downtown Kingsville area. With improved traffic flow in the area, vehicles will generate less emissions due to less idling.
- Only one critical receptor was identified within the Project Area. Most of them are located approximately 400 – 750 m from the Project Area. These receptors are located in the downtown Kingsville area, with some located immediately adjacent to the main downtown corridors, Division Street and Main Street. The increase in traffic emissions at these critical receptors due to traffic along the new West Collector Road is therefore not expected to be higher than the increase from traffic without Project implementation along Division Street and Main Street which are in much closer proximity to these receptors. Without Project implementation, the impact on air quality at these critical receptors is expected to be higher than with Project implementation due to added emissions associated with projected growth in traffic and congestion along the existing downtown corridors.
- The inclusion of improvements / mitigation as part of the Project, such as the signalized intersection at Main Street and Heritage Street, as recommended by the Traffic Study, will improve traffic flow in the area and reduce idling emissions.
- The Project includes a cycle track and multi-use path to provide a more cohesive Active Transportation network for the Town which is expected to encourage the shift to Active Transportation options which would generate less traffic emissions.

- Although traffic volumes are predicted to increase in the future, with the implementation of new vehicle emissions standards and the steady increase and transition to electric vehicles, as well as less congestion due to Project implementation, the vehicle combustion emissions are expected to decrease in the future. This would lower the contribution of road traffic emissions to the ambient air. Therefore, considering the reduced vehicle emissions and electrification in the future, the Project's potential impact on air quality is expected to have a positive effect to air quality compared to without Project implementation.

7.2.1 SUMMARY

The Project Study Area is currently mainly agricultural with some residential properties along Main Street and Road 2 West. Growth in population and employment has been forecasted based on the CTMP for the Town of Kingsville. The existing ambient air quality in the Project area is affected by the nearby road traffic emission sources, as well as other human activities from agricultural uses, and natural sources.

The background ambient air quality levels for the COIs in the Study Area are lower than their related criteria, with the noted exceptions of ozone (8-hour) and B(a)P (annual), which are exceeding their respective criteria. These exceedances are common in southern Ontario, and are not unique to the Study Area.

For the construction phase, a construction dust management plan will be prepared and implemented. With implementation of mitigation measures and purposeful management of construction dust and combustion gases, emissions from the construction phase and impacts to the local air quality can be reduced and controlled.

The operation of the Project has the potential to impact the ambient air quality. The traffic in the Town will increase regardless of Project implementation due to significant growth and development in the Town and the potential future residential development in the Study Area. As indicated above, Project implementation will improve traffic flow and traffic conditions and alleviate congestion in the downtown Kingsville area. In addition, it provides necessary access to the proposed residential development. The impact on the air quality is expected to be lower with Project implementation than without Project implementation as it helps improve traffic flow in the road network and provides connectivity to the Town's Active Transportation network. In addition, reduction in vehicle combustion emissions is expected in the future with implementation of new vehicle emissions standards and the transition to electric vehicles.

8 Closure

This Qualitative Air Quality Impact Assessment for the construction of West Side Collector Road in the Town of Kingsville was prepared by Stantec Consulting Ltd. to support the Municipal Class Environmental Assessment Study. This report has been prepared on behalf of and for the exclusive use of the Town of Kingsville and its representatives for this Project. Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Town. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of

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Attachments: A – Figure showing Project Area and Study Area Location, Kingsville Land Use Plans
B – Figure showing Sensitive and Critical Receptor Locations, List of Sensitive and Critical Receptors

9 References

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Reference: **West Side Collector Road,**
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment

Attachment A Figure showing Project Area and Study Area Location, Kingsville Land Use Plans



Stantec

Legend

- Project Area
- Study Area (500 metres)

Proposed Alignment

- West Side Collector Road
- Local Road

Base Data

- Watercourse (Intermittent)
- Watercourse (Permanent)

0 250 500 Metres

1:15,000 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2022.
3. Orthoimagery obtained from ©First Base Solutions , Essex County, 2023



Project Location
Town of Kingsville

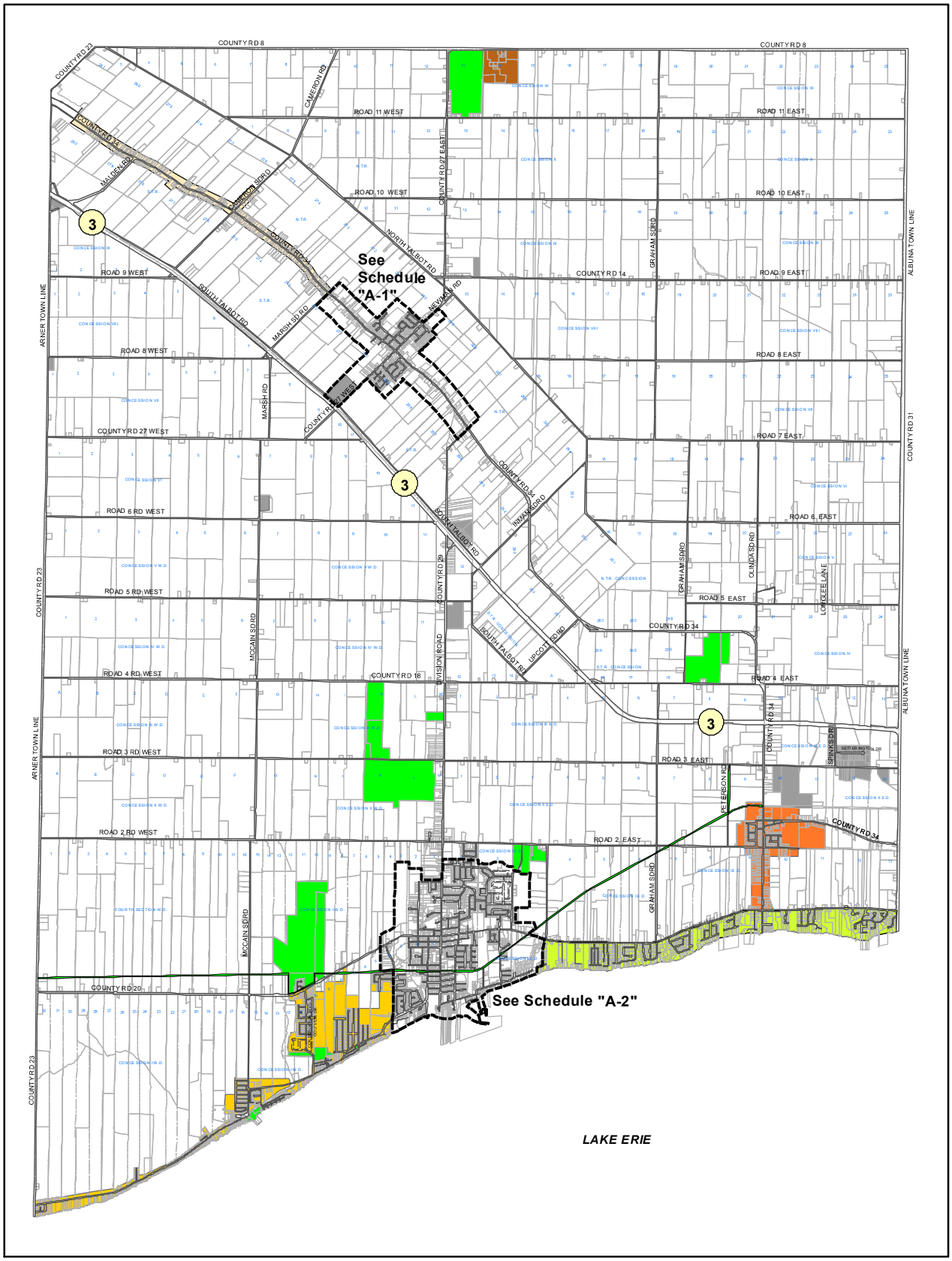
165001284 REV4
Prepared by JSa on 2024-03-14

Client/Project
TOWN OF KINGSVILLE
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT, CONSTRUCTION OF A WEST SIDE COLLECTOR ROAD

Figure No.
A-1

Title
Project Location and Study Area

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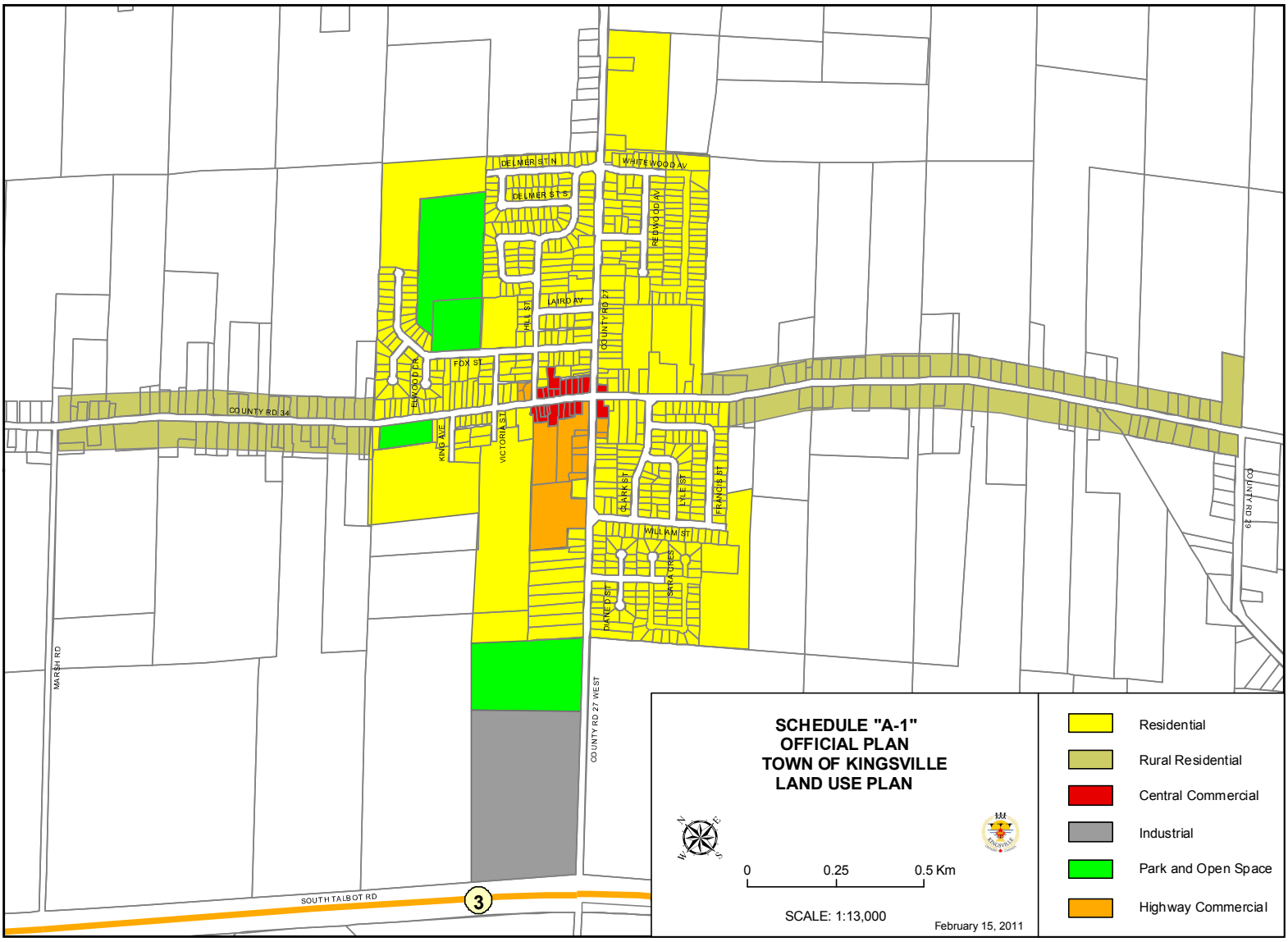
0 1 2 Km

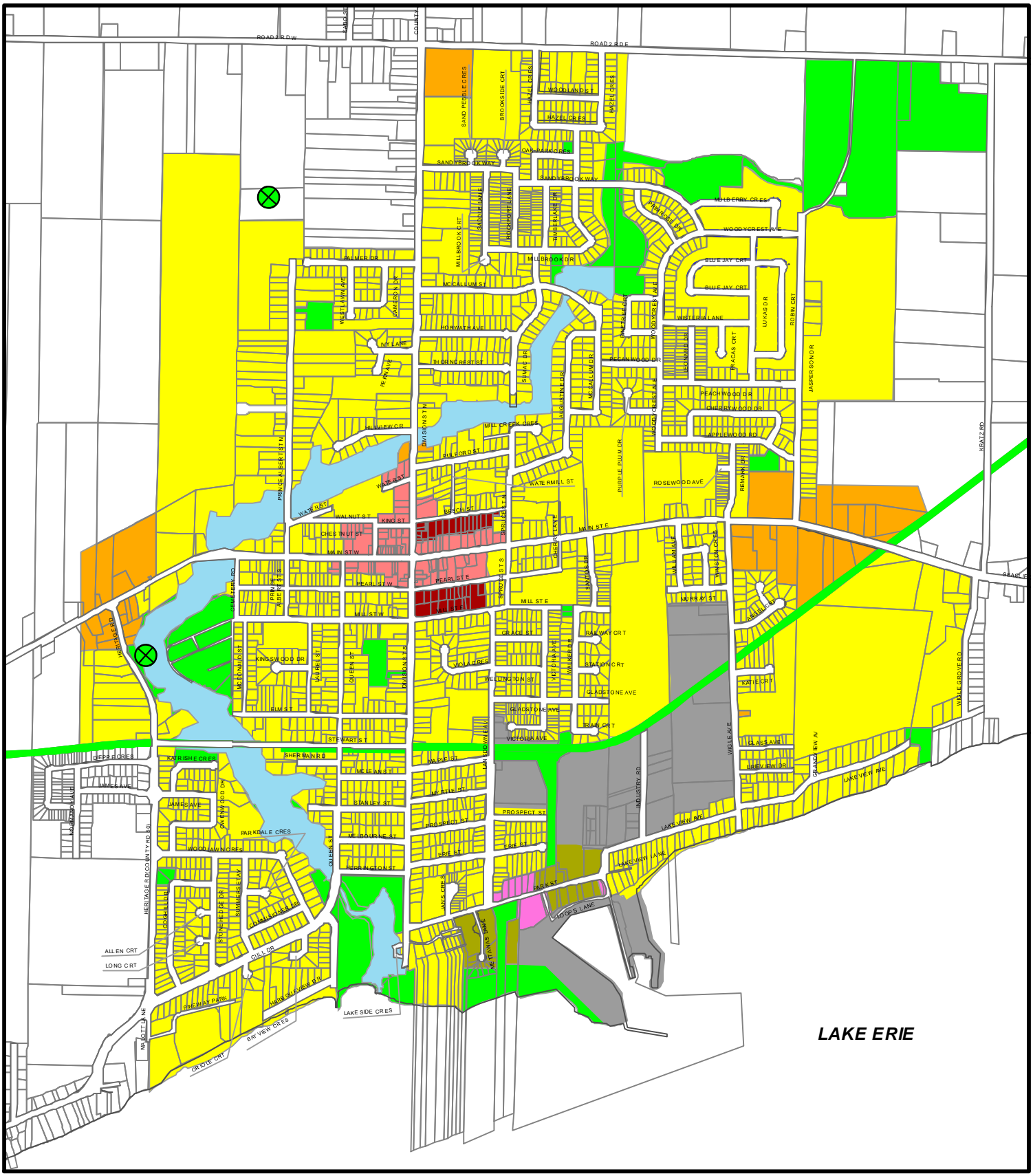
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SCHEDULE "A"
OFFICIAL PLAN
TOWN OF KINGSVILLE
LAND USE PLAN

- Agricultural
- Rural Residential
- Lakeshore Residential East
- Lakeshore Residential West
- Special Residential
- Hamlet
- Industrial
- Parks and Open Space

August 20, 2010


DELMER ST N
DELMER ST S
WHITEWOOD AV
REDWOOD AV
LAIRD AV
HILL ST
COUNTY RD 27
FOX ST
ELMWOOD DR
COUNTY RD 34
KING AVE
VICTORIA ST
CLARK ST
LYLE ST
FRANCIS ST
WILLIAM ST
SARA GRES
BAKER ST
COUNTY RD 29
MARSH RD
COUNTY RD 27 WEST
SOUTH TALBOT RD
3
SCHEDULE "A-1"
OFFICIAL PLAN
TOWN OF KINGSVILLE
LAND USE PLAN
0
0.25
0.5 Km
SCALE: 1:13,000
February 15, 2011
Residential
Rural Residential
Central Commercial
Industrial
Park and Open Space
Highway Commercial



SCHEDULE "A-2"
OFFICIAL PLAN
TOWN OF KINGSVILLE
LAND USE PLAN

N

0 0.25 0.5 Km

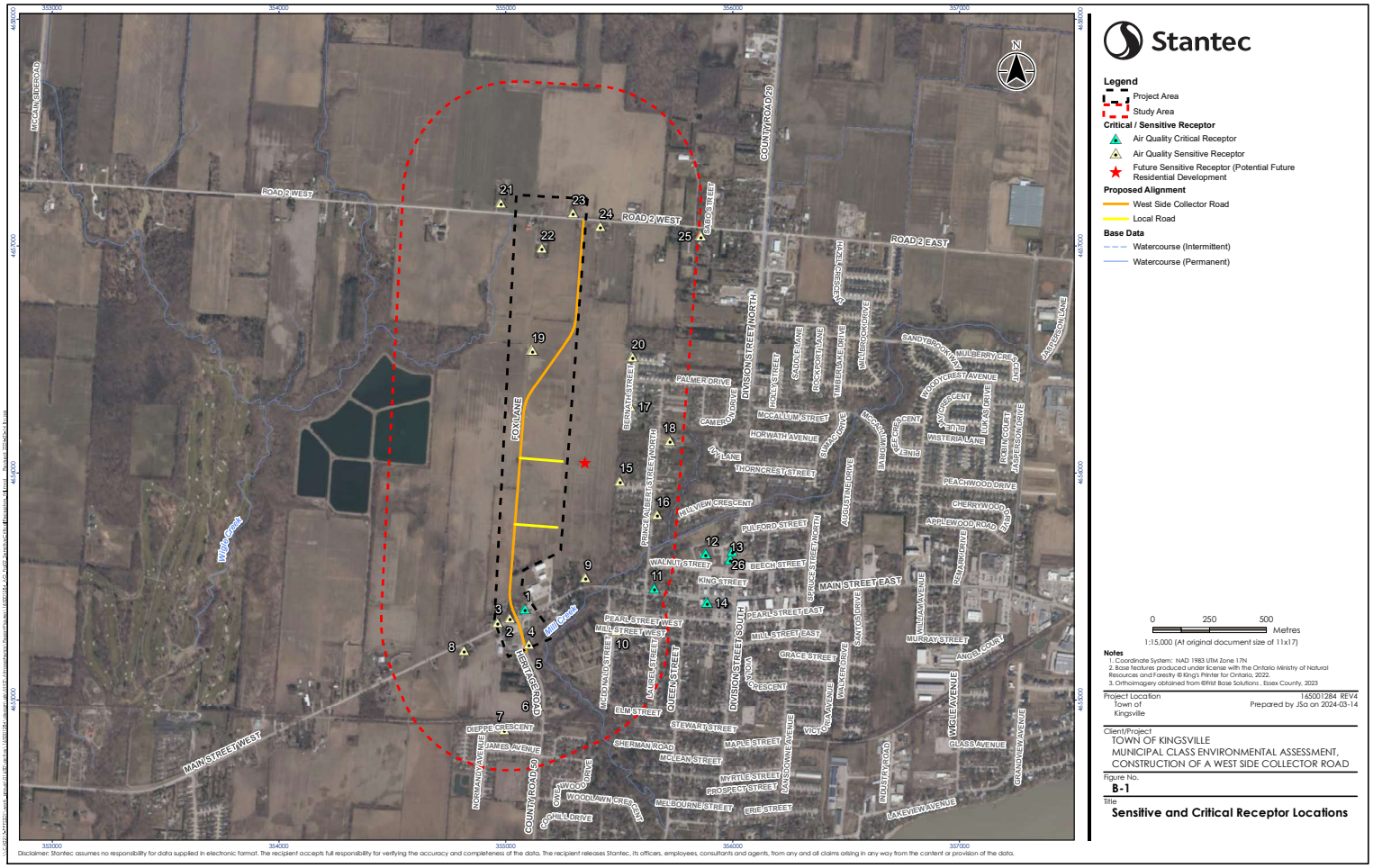
SCALE: 1:16,000

August 20, 2010

- Residential
- Central Commercial
- Central Commercial/Residental
- Highway Commercial
- Waterfront Residential
- Waterfront Commercial
- Industrial
- Park and Open Space
- Waste Disposal Site
- Watercourse Protection

Reference: **West Side Collector Road,**
Municipal Class Environmental Assessment Study
Town of Kingsville -
Qualitative Air Quality Impact Assessment

Attachment B Figure showing Sensitive and Critical Receptor Locations, List of Sensitive and Critical Receptors



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Table B-1: List of Sensitive and Critical Receptors

Receptor ID	Address	Critical / Sensitive Receptor	Receptor Description	UTM (m E)	UTM (m N)
1	240 Main St W	Critical	Southern Shores Church	355081.0	4655401.0
2	268 County Rd 20 W	Sensitive	Residential House	355015.0	4655361.0
3	276-334 Essex County Rd 20	Sensitive	Residential House	354960.7	4655343.0
4	33 County Rd 50 E	Sensitive	Residential House	355098.4	4655245.2
5	52 County Rd 50 E	Sensitive	Residential House	355093.4	4655145.8
6	114 Essex County Rd 50	Sensitive	Residential House	355139.0	4654973.2
7	220 Dieppe Crescent	Sensitive	Residential House	354989.8	4654869.8
8	357 County Rd 20 W	Sensitive	Residential House	354813.4	4655220.0
9	172 Main St W	Sensitive	Residential House	355348.0	4655539.0
10	136 Mill St W	Sensitive	Lil' Heart & Soul Inn	355484.0	4655305.0
11	106 Main St W	Critical	Epiphany Anglican Church	355652.0	4655493.0
12	36 Water St	Critical	Kingsville Public School	355878.2	4655644.5
13	46 Division St N	Critical	Discovery Child Care	355987.0	4655618.0
14	33 Main St W	Critical	Slovak Baptist Church	355884.0	4655430.0
15	12 O'Halloran St	Sensitive	Residential House	355501.0	4655966.0
16	89 Prince Albert St N	Sensitive	Residential House	355664.0	4655817.0
17	217 Bernath St	Sensitive	Residential House	355545.0	4656294.0
18	175 Prince Albert St N	Sensitive	Residential House	355721.0	4656144.0
19	Farm house on Fox Lane	Sensitive	Residential House	355113.9	4656541.5
20	259 Serena St	Sensitive	Residential House	355556.0	4656511.0
21	366 Road 2 W	Sensitive	Residential House	354976.0	4657193.0
22	291 Road 2 W	Sensitive	Residential House	355156.0	4656991.0
23	254 Road 2 W	Sensitive	Residential House	355294.0	4657148.0
24	247 Road 2 W	Sensitive	Residential House	355414.0	4657087.0
25	83 Road 2 W	Sensitive	Residential House	355857.0	4657045.0
26	58 Division St N	Critical	First Baptist Church	355996.0	4655655.7