Environmental Study Report

County of Essex County Road 46 and
Town of Tecumseh Concession Roads 8 and 9 Environmental Assessment Study

November 2025

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EXECUTIVE SUMMARY

E-1 Introduction

E-1.1 Problem and Opportunity Statement

Road network improvements are required within the western sectors of the County of Essex to accommodate predicted increased traffic south of Highway 401 and bordering the City of Windsor. This planning will assist development by defining the future road right-of-way (ROW) and intersection configuration.

E-1.2 Study Area

The Study Area is approximately 8 km along County Road 46 from the City of Windsor boundary easterly to County Road 19. The Concession Roads 8 and 9 limits extend from County Road 46 northerly to Highway 401, approximately 0.5 and 1.0 km, respectively. The regional location of the Study Area is shown in **Figure E-1.** The Study Area is illustrated on **Figure E-2** and includes 500 m on either side of the roadways under examination.

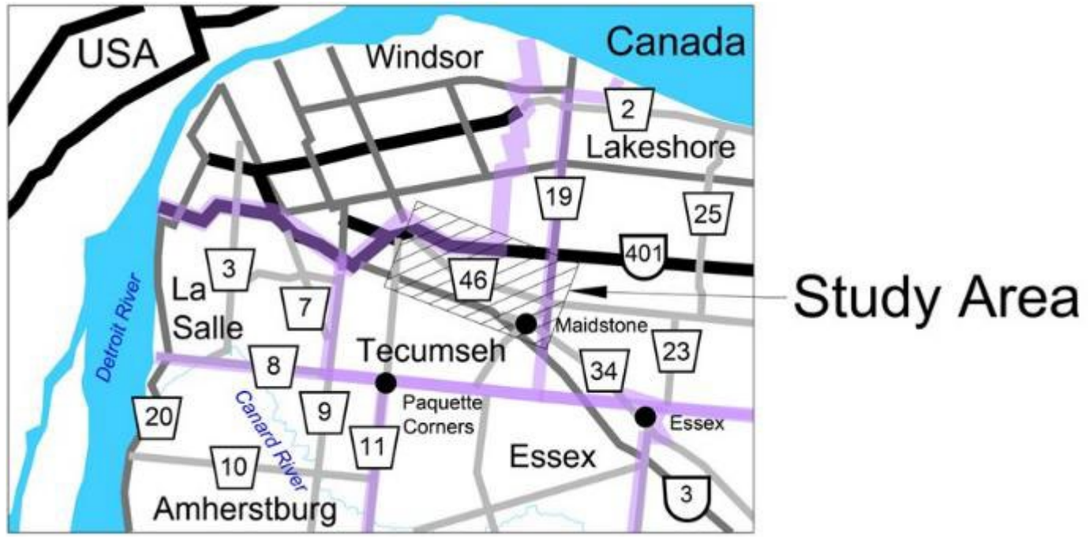


Figure E-1: Regional Location

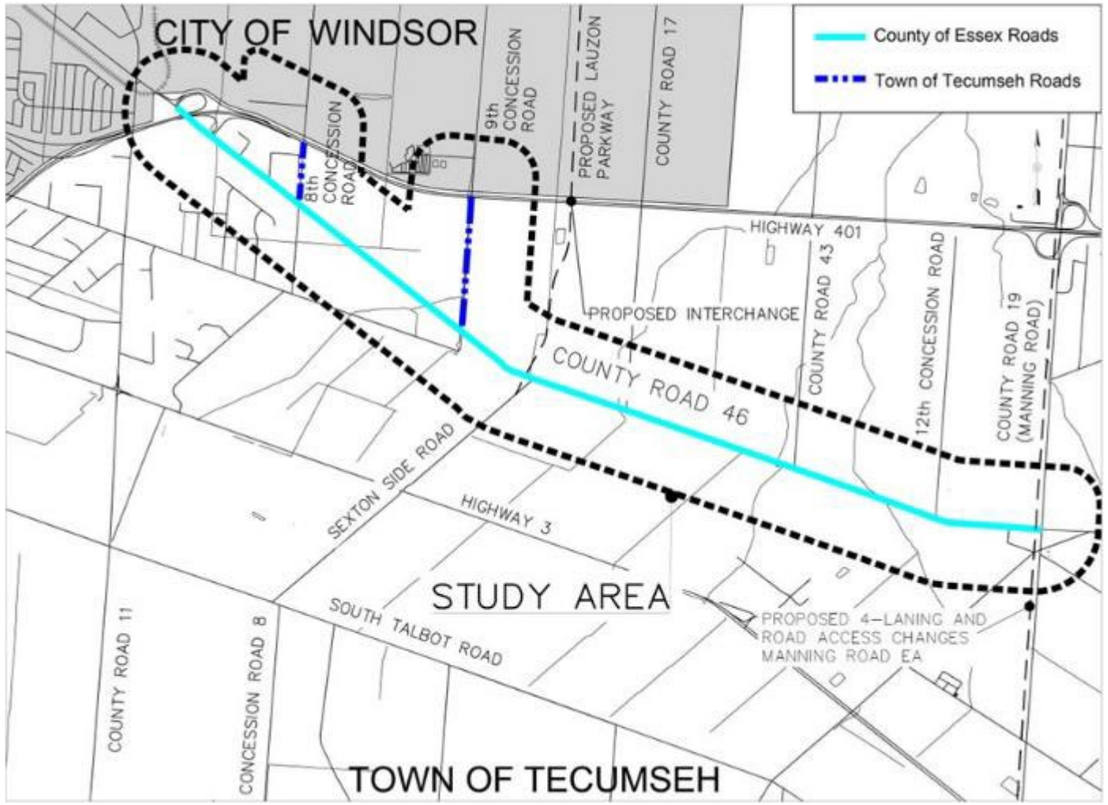


Figure E-2: Study Area

E-1.3 Municipal Class Environmental Assessment (EA) Process

This project was undertaken in accordance with the Provincial EA Act following the "Municipal Class Environmental Assessment" (MCEA) (2023) process. This document specifies the procedures required to plan specific road projects according to an approved planning process. The EA reflects the County Road 46 planning for a Schedule C undertaking of an arterial road under the jurisdiction of the County of Essex and Schedule B projects for collector roads under the jurisdiction of the Town of Tecumseh.

The MCEA process was undertaken in a series of phases commencing with problem identification and culminating in the filing of this Environmental Study Report (ESR). This process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including avoidance and mitigation of any residual adverse effects) on the natural and social/cultural environments. The MCEA process entails five phases:

Phase 1: Identify the Problem
Phase 2: Alternative Solutions

Phase 3: Alternative Design Concepts for the Preferred Solution

Phase 4: ESR

Phase 5: Implementation

E-2 Consultation

E-2.1 Public and Agency Consultation

The public consultation approach used several techniques to proactively involve the public. The study was carried out in consultation with staff from the County of Essex and Town of Tecumseh, external agencies, stakeholders and the public.

The EA process included circulating a draft Study Design Report describing the proposed methodology for the MCEA at the start of the study. The draft Study Design Report was circulated to external agencies and was available to the general public through posting on the County and Town websites. The final Study Design Report is included in **Appendix A**. The Study Design Report circulation was completed as a discretionary public consultation, Step 1.2 of the MCEA Planning and Design Process.

Three Public Consultation Centres (PCCs) were held during the study to present the project, the assessment of alternatives and the Technically Preferred Plan (TPP). These meetings were an integral component of the study – seeking input and comments from the local community/stakeholders. As a result, the following community issues were raised during the Study:

- Tributaries of Little River within the Study Area should be naturalized to address local stormwater retention issues and expand wildlife habitat. Natural heritage areas should be protected and preserved. These initiatives will improve the health of Detroit River's Watershed.
- Include a centre turn lane along the entire length of County Road 46 as well as left turning lanes at Concession Roads 8 and 9 to reduce traffic congestion.
- Support for connecting Highway 3 and Lauzon Parkway to improve safety and reduce the flow of traffic along County Road 17, County Road 46, and County Road 19.
- Support for an active transportation route along County Road 46 that connects to Chrysler Canada Greenway.
- Concerns that the construction of Lauzon Parkway Extension will influence improvements to County Road 46.
- Support for the consideration of roundabouts.
- Reflect the needs of large agricultural vehicles.
- Will sewers be installed?
- Concern for the property requirements for the road widening and intersection improvements.
- "Right hand turns only" on County Road 46.

E-2.2 Indigenous Peoples Engagement

Indigenous Peoples engagement was also undertaken as part of the study. The Indigenous Consultation between the Study Team and the respective individual Indigenous communities and their responses/ requests was tracked. A separate spreadsheet has been created for field visits of Indigenous communities requesting to be involved. The engagement included sharing archaeological studies with Caldwell First Nation and PCC No. 3 information with the Chippewa of the Thames First Nation. The County and Town respects that this engagement is a Nation-to-Nation contact with the County and the Town representing the Crown. Indigenous Peoples are Rights Holders and are separate and distinct from public stakeholders.

All Indigenous communities that may have an interest in this Study were sent notification of the Notice of Study Completion, all three PCCs, review of the archaeology reports, and the 30-day review period. Indigenous engagement will continue to be updated and tracked into and during the next phases of Detail Design and construction regarding their notification of future permits that have the potential to affect their interests. The County and Town commit to continued liaison with the Caldwell First Nations and Chippewa of the Thames First Nation who have identified an interest in the project and the environmental mitigation plan. No other community identified themselves during the consultation to date.

E-2.3 Council Resolution

The Town of Tecumseh Council and County of Essex Council endorsed the Recommended Plan and authorized the publication of the ESR for the 30-day review period.

The Council Resolutions are found in **Appendix L**.

E-3 Analysis and Evaluation

The evaluation of alternatives was completed in a two-step process. The initial step was to consider and validate previous decisions of the Transportation Master Plan (TMP) as Alternative Planning Solutions, which included:

- Alternative 1 - Do Nothing
- Alternative 2 - Transportation Demand Management (TDM) and Transportation Systems Management (TSM)
- Alternative 3 – Active Transportation
- Alternative 4 – Roadway Improvements

Based on the preliminary review of Alternative Planning Solutions, Alternatives 2, 3, and 4 were recommended for further evaluation. Alternative 2 (TDM and TSM) was not carried forward as standalone solution but will be incorporated with the preferred Alternative Planning Solution as part of the Recommended Plan.

E-3.1 Generation, Analysis and Evaluation of Preliminary Design Alternatives

A "long list" of Preliminary Design Alternatives was generated to address the preferred Alternative Planning Solution. The long list is based on identified needs, to ensure consideration of a wide range of

transportation alternatives (i.e. all reasonable alternatives are considered). The Preliminary Design Alternatives were categorized under 3 groups:

a. Alignment Alternatives
b. Cross Section Alternatives
c. Intersection Alternatives

These alternatives were presented to the public at the PCC's and were expanded based on comments received from the public. Alternatives are described in **Section 4.0**.

The Project Team participated in and reviewed the analysis and evaluation for all alternatives. The Technically Preferred Alternative (TPA) was presented to the public at PCC No. 3. The County Road 46 Study Area was divided into 3 sections for the evaluation in addition to Concession Roads 8 and 9, refer to **Figure E-3**. The evaluation process and TPAs are described in **Section 4.2**.

Figure E-3: Evaluation Sections

E-3 Recommended Plan

Following PCC No.3, the TPA was subject to refinements based on community input as described in **Section 2.5**. The County Road 46 Recommended Plan includes:

- 40 m ROW;
- 4-lane urban cross section within Oldcastle (Highway 401 to Concession Road 9), with sidewalk on the southside. Cyclists to use a Multi Use Path on the northside or the Canadian Southern Railway Trail south of County Road 46, refer to **Figure E-4;**
- 4-lane rural cross section between Concession Road 9 and County Road 19 to accommodate large agricultural vehicles, refer to **Figure E-5** and **Figure E-6**. The rural cross section will have 2 m paved shoulders to accommodate cyclists;
- Meandering alignment to avoid constraints, refer to **Figure E-7** to **Figure E-9**;
- 1.8 m sidewalk between Highway 401 and the future Lauzon Parkway. The sidewalk is located on the southside between Highway 401 and Concession Road 9 and the northside from Concession Road 9 to Lauzon Parkway;
- Conceptual stormwater management ponds;
- No change to Municipal Drains and they will be located within the ROW;
- Roundabouts at Concession Roads 8 and 9 intersections;
- Stop control intersections at County Road 17 and 43 and Concession Road 12; and
- Previously approved signalized intersections at the future Lauzon Parkway and County Road 19 (Manning Road).

The Concession Roads 8 and 9 Recommended Plans include:

- 36 m ROW;
- 2-lane semi-urban cross section, refer to **Figure E-10** and **Figure E-11**;
- 2 m paved shoulder on the west side and a 3 m multi-use path (MUP) on the east side to accommodate cyclists and pedestrians, refer to **Figure E-12**;
- No change to Municipal Drains and they will be located within the ROW;
- Conceptual stormwater management ponds;
- Roundabouts at County Road 46 intersections; and
- Aligned on-centre of Highway 401 bridges.

The recommended intersections and conceptual stormwater management ponds for the Lauzon Parkway. County Roads 17 and 43 are shown on **Figure E-13**.

The EA is seeking environmental clearance for the following:

- Acquisition of private property for roadway improvements; and
- Utility relocation.

E-3.1 Statement of Flexibility

- Conceptual stormwater management ponds to be adjusted during detail design;
- Allow sidewalk or MUP on either the north or south side (or both) of the ROW; and
- Possibility of realigning the Washbrook Drain to Concession Road 9 Municipal Drain.

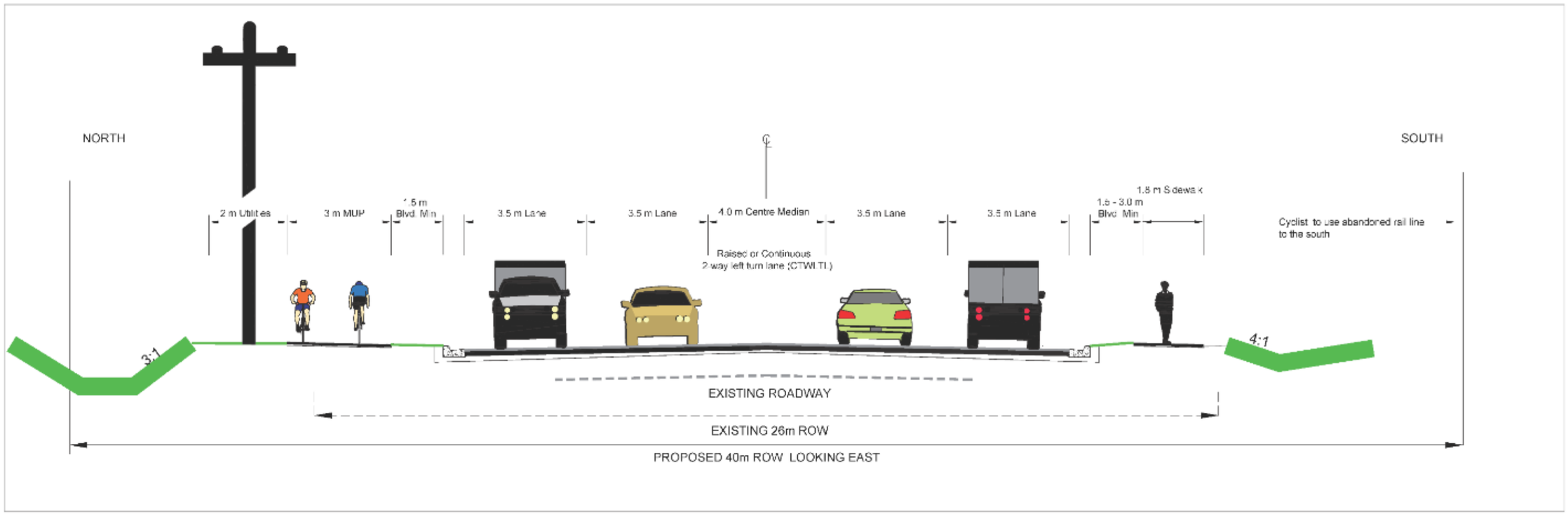


Figure E-4: Section 1 and 2 (Highway 401 to Concession Road 9) Recommended Cross Section

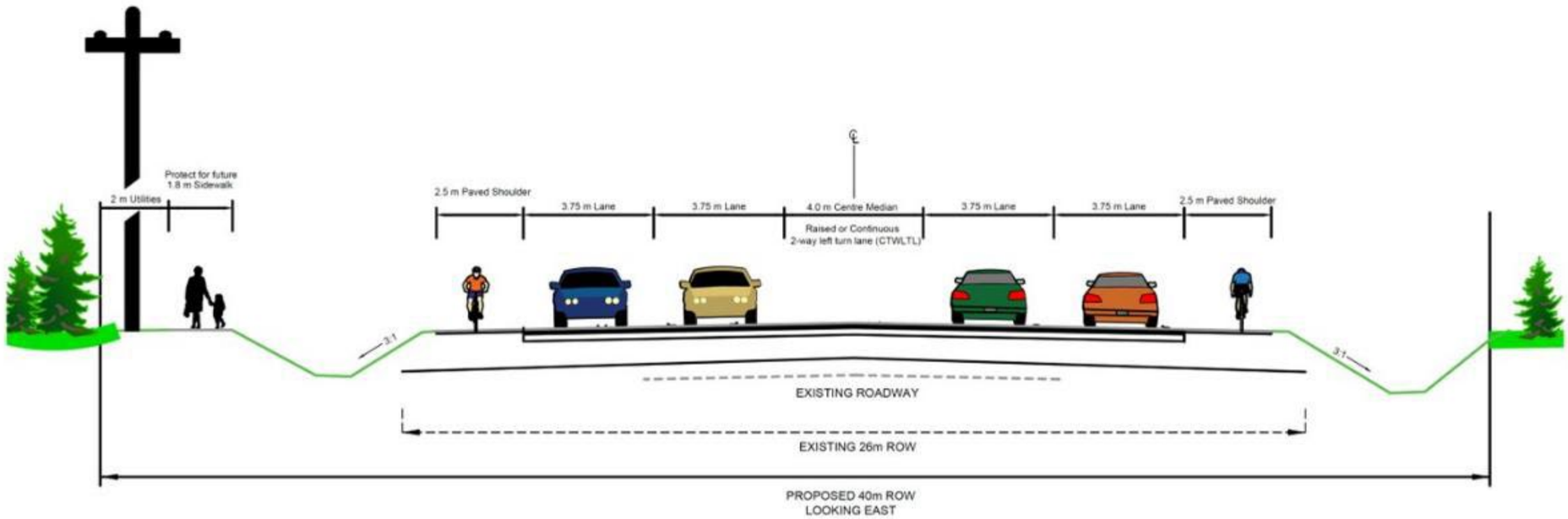


Figure E-5: Section 2 (Concession Road 9 easterly) Recommended Cross Section

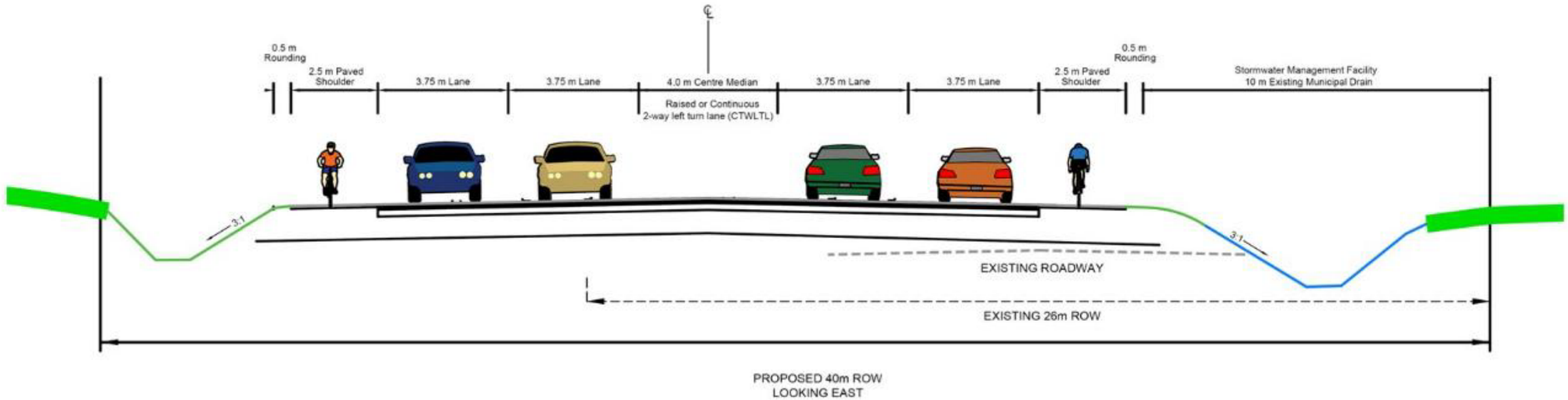


Figure E-6: Section 3 Recommended Cross Section

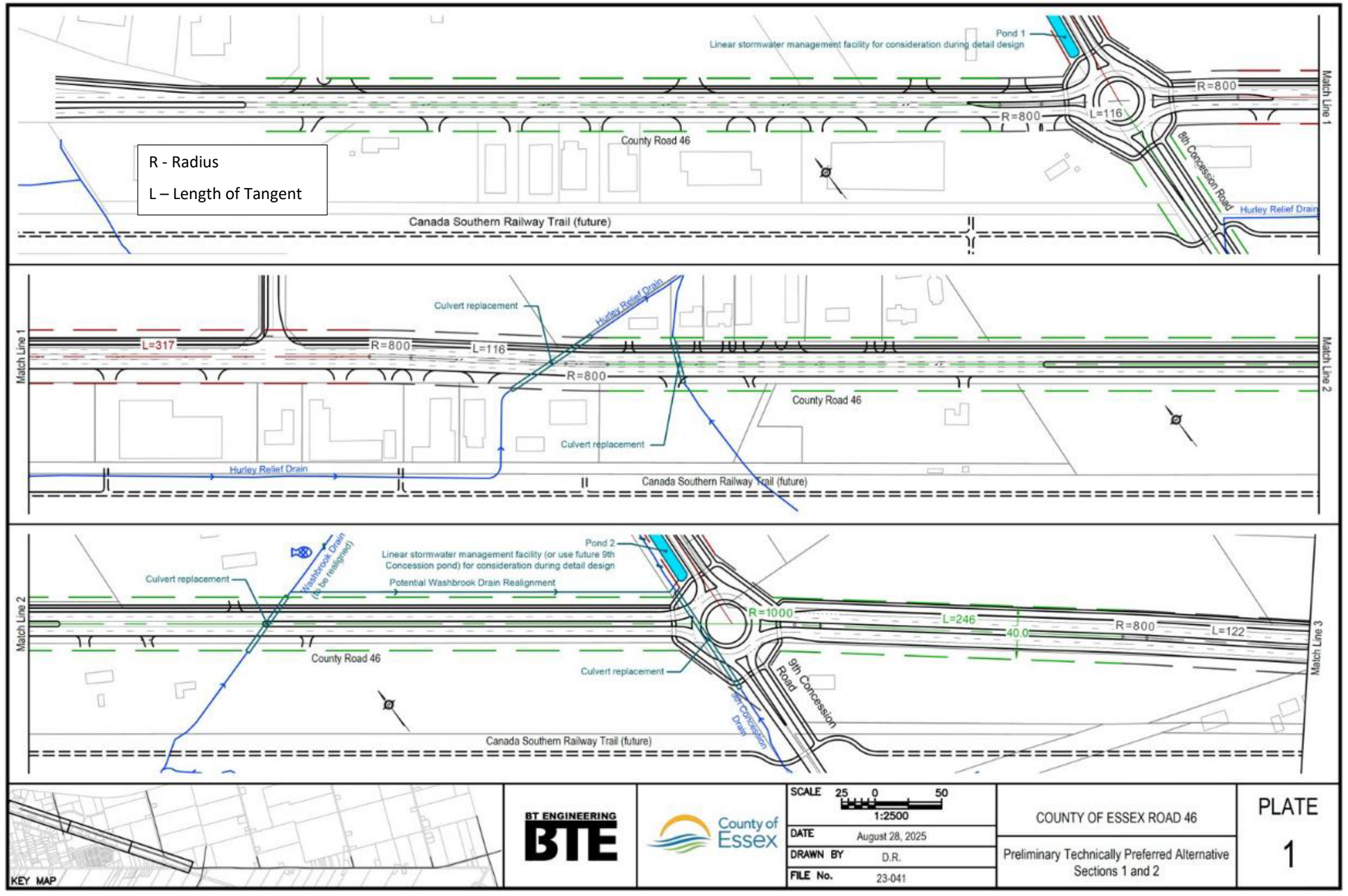


Figure E-7: Sections 1 and 2 Recommended Alignment

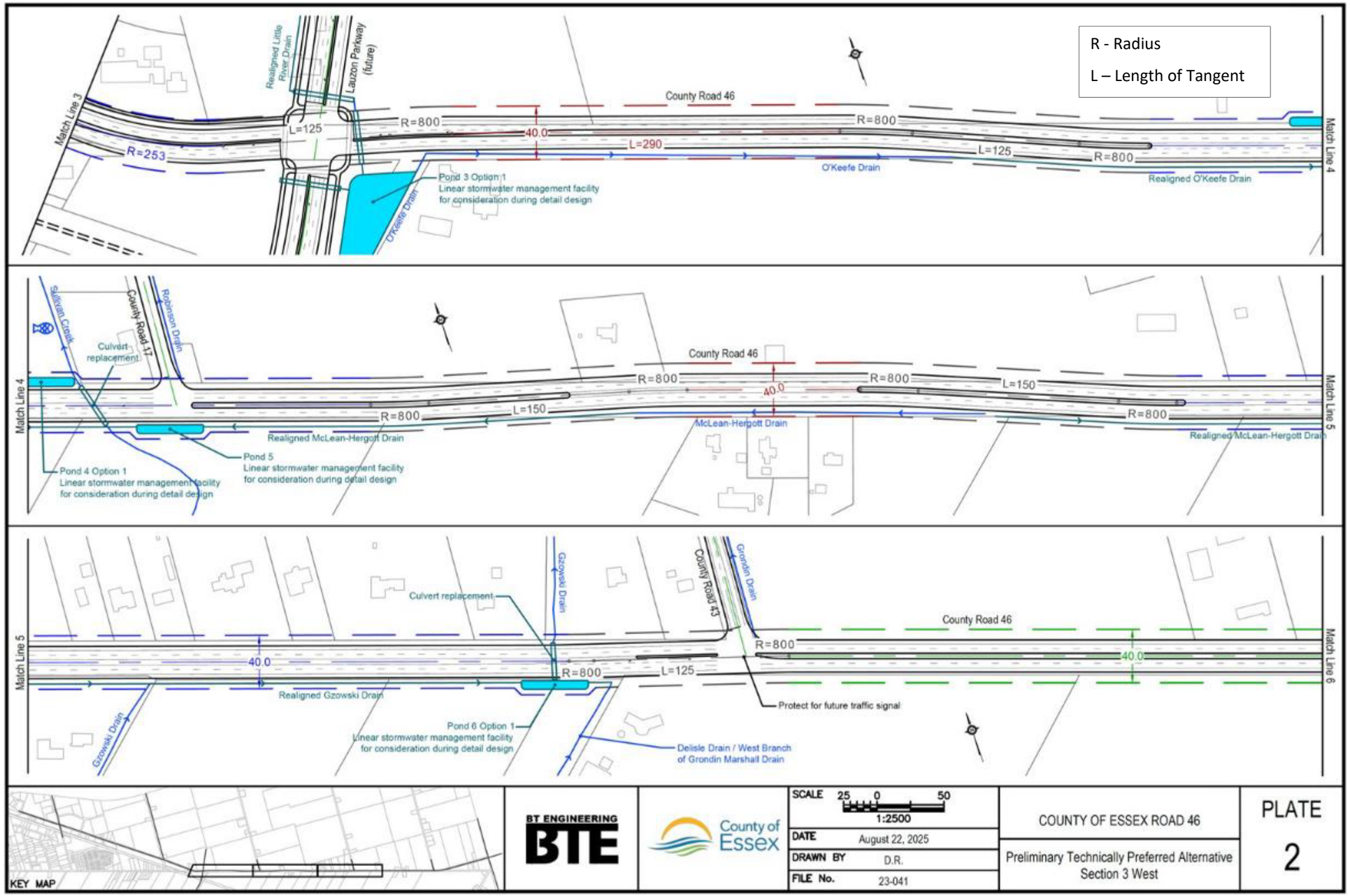


Figure E-8: Section 3 West Recommended Alignment

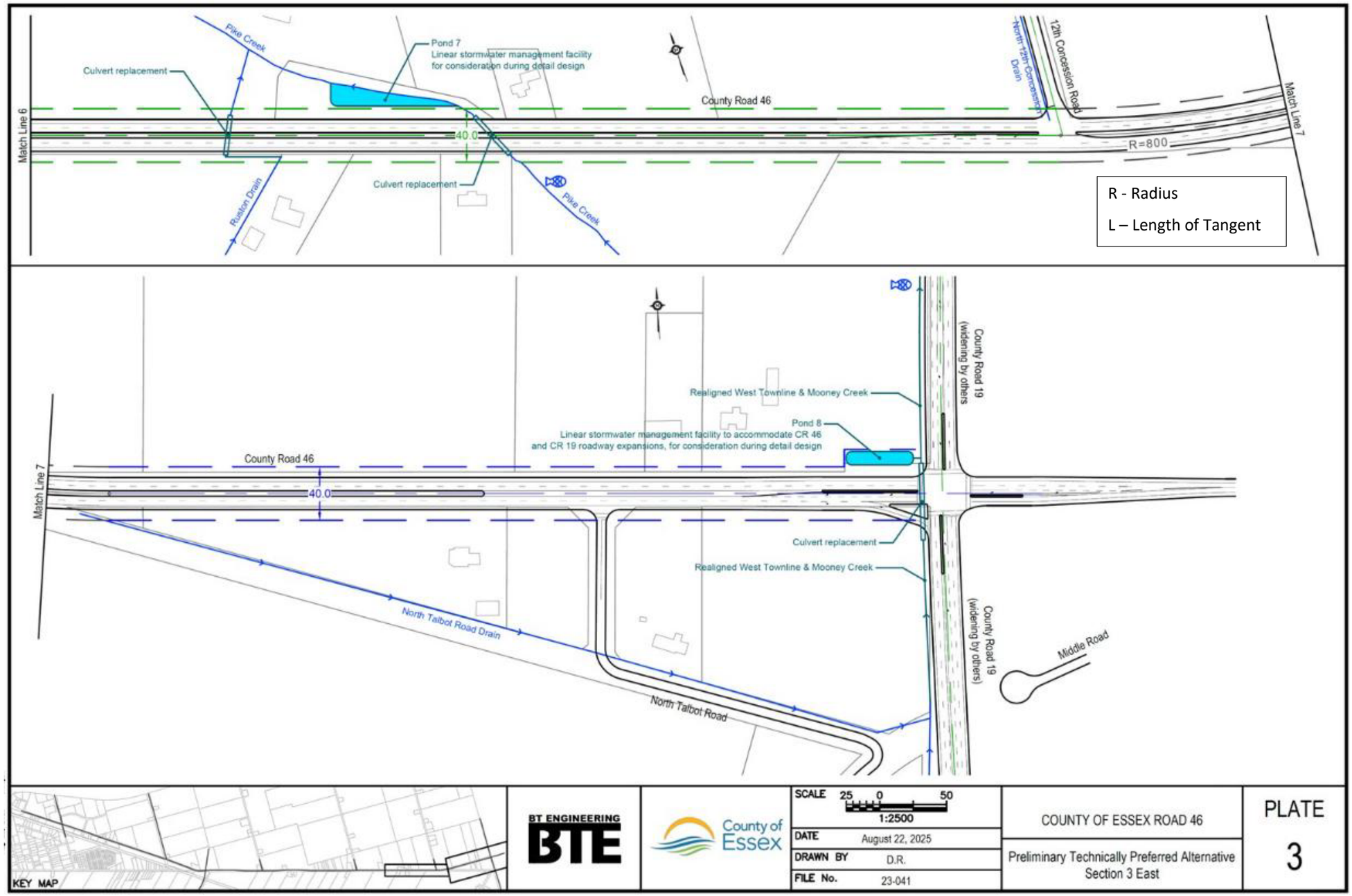


Figure E-9: Section 3 East Recommended Alignment

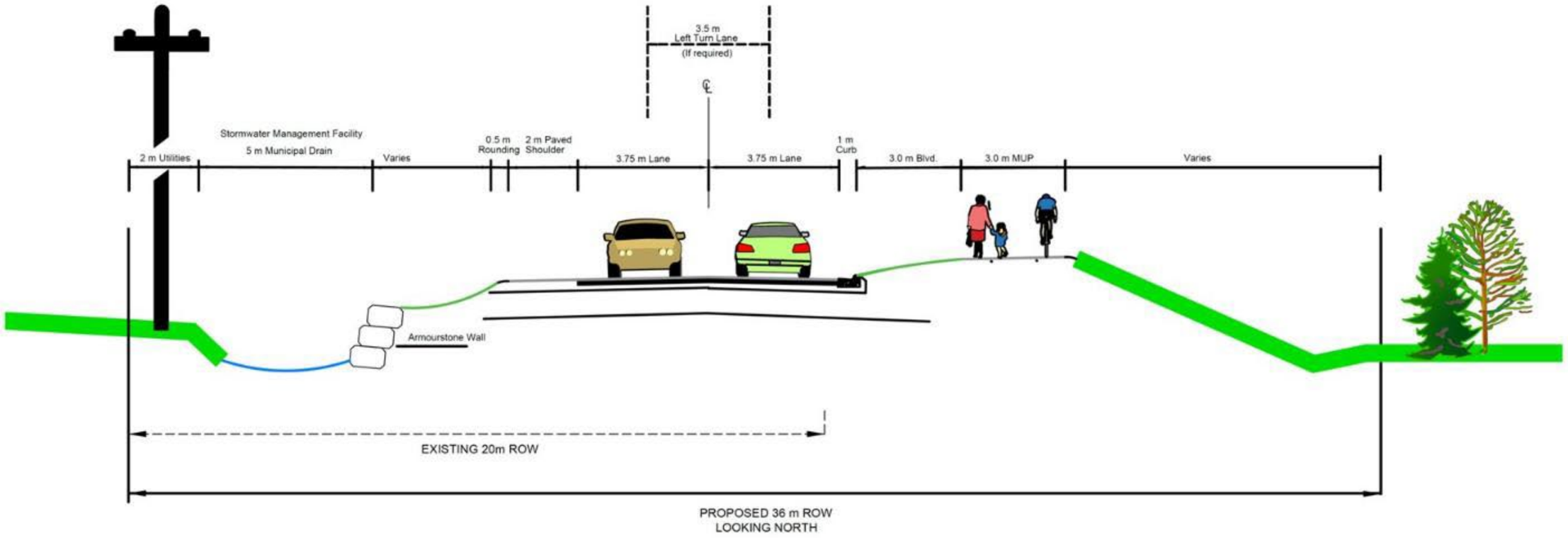


Figure E-10: Concession Road 8 Recommended Cross Section

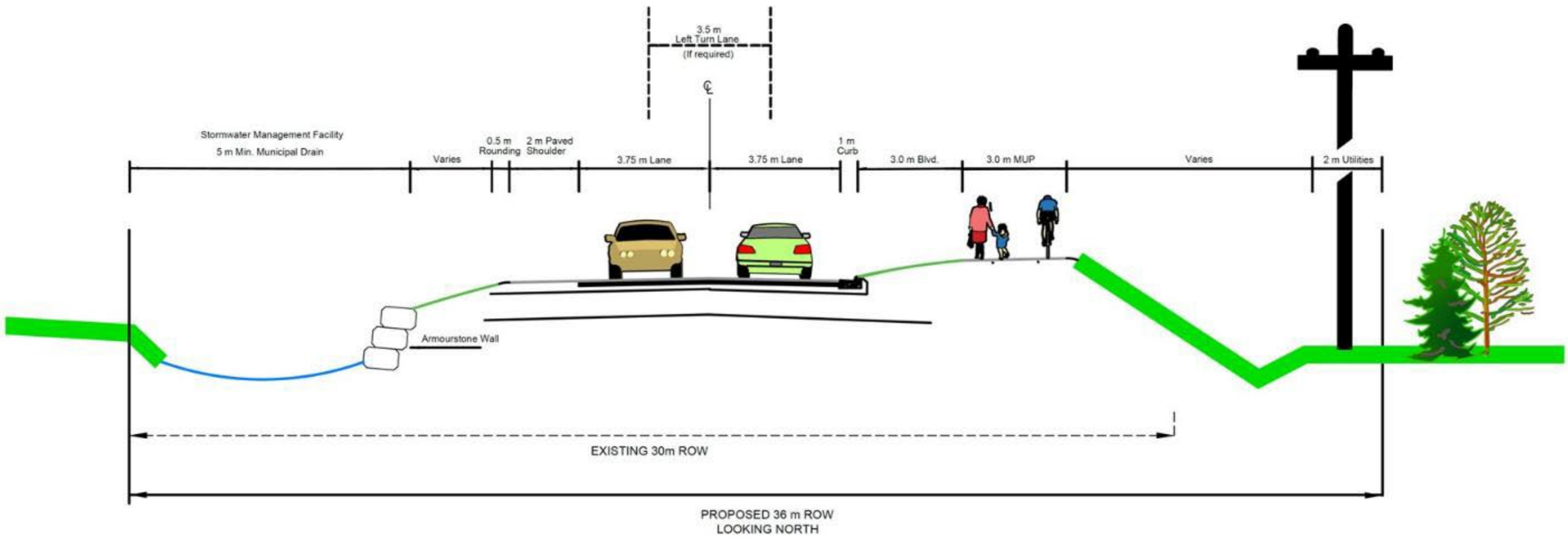


Figure E-11: Concession Road 9 Recommended Cross Section

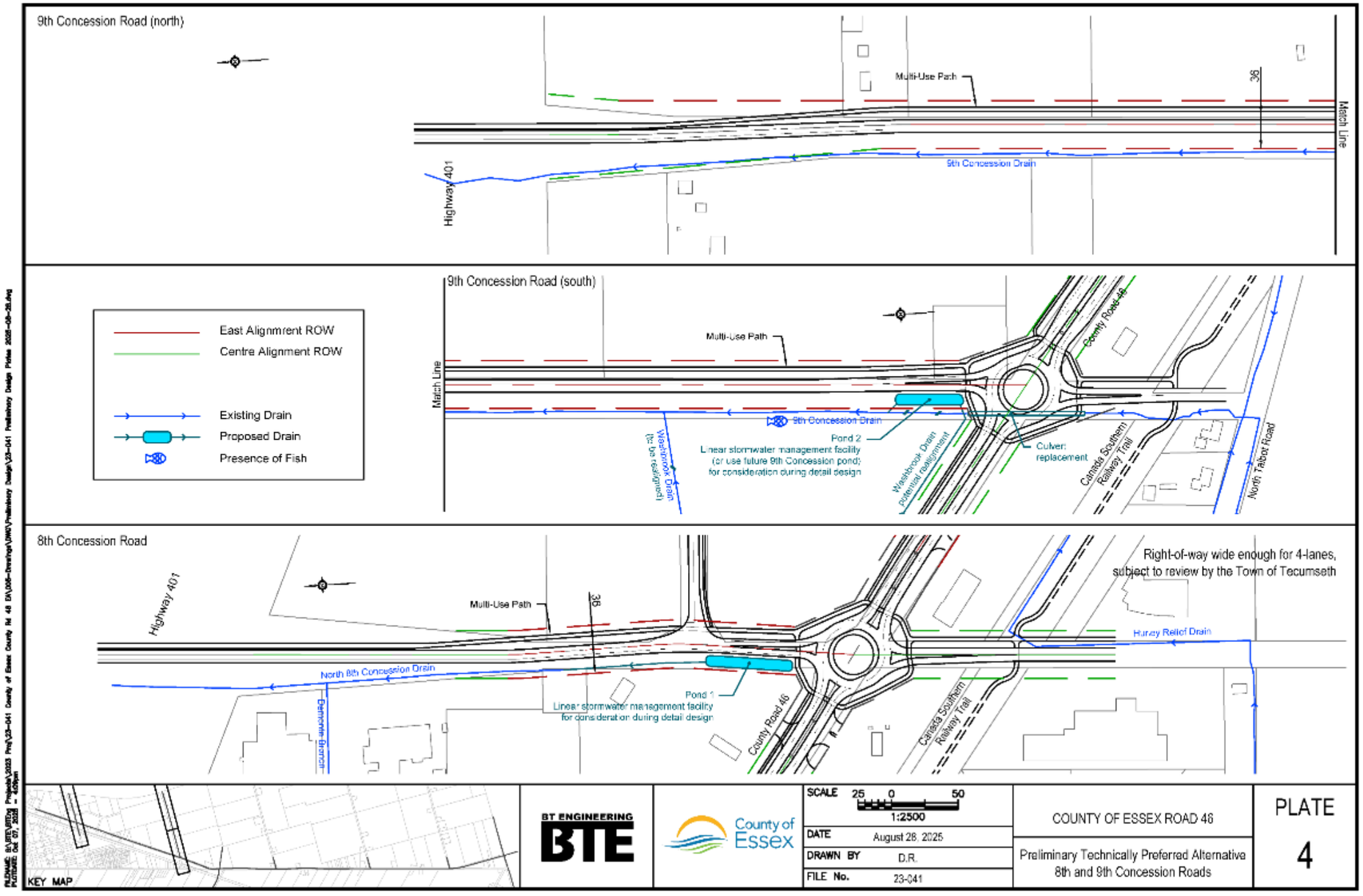


Figure E-12: Concession Roads 8 and 9 Recommended Alignment

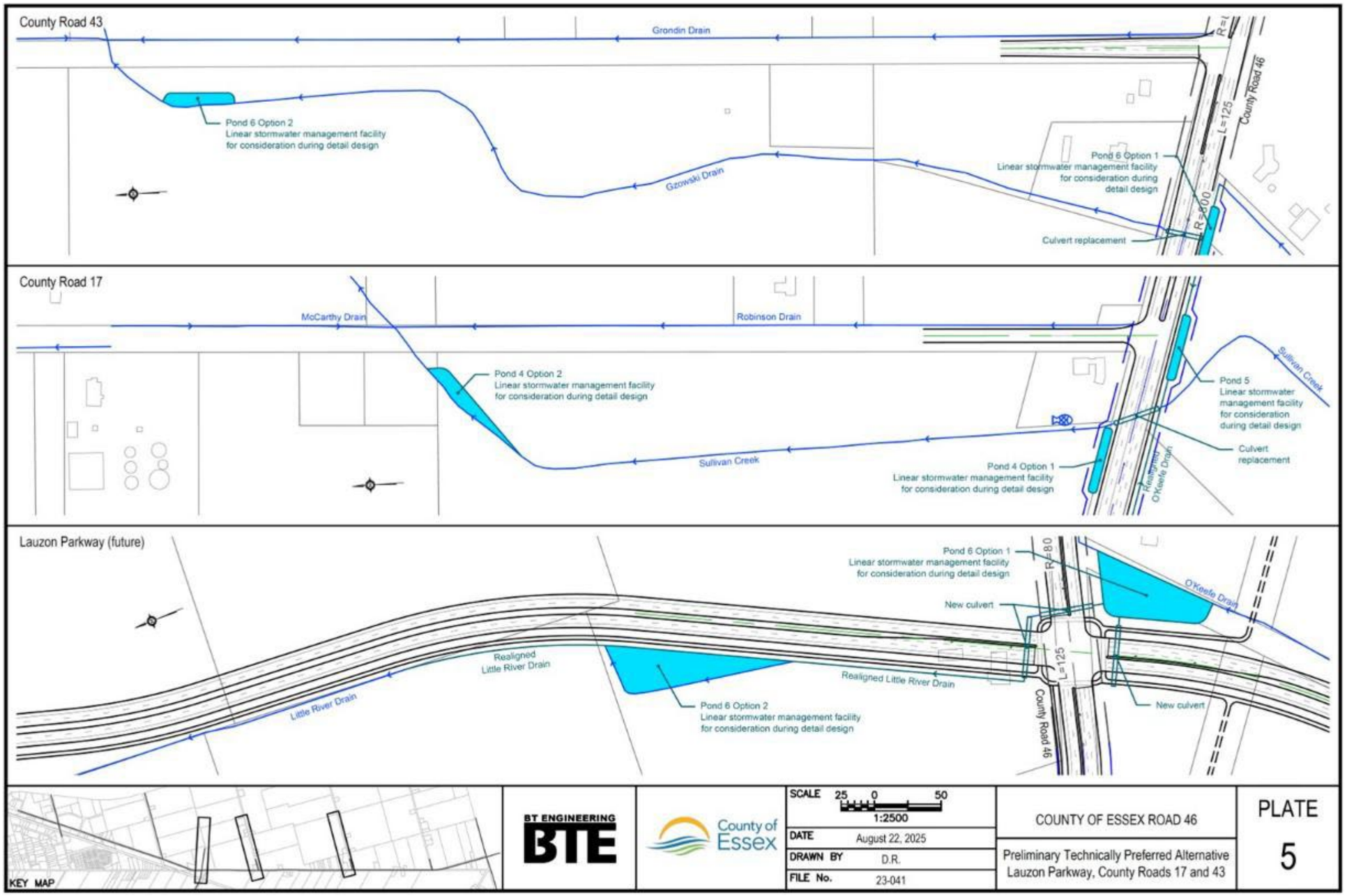


Figure E-13: County Road 43, County Road 17 and Lauzon Parkway Recommended Plan

1.0 INTRODUCTION

The County of Essex has completed an Environmental Assessment (EA) Study to plan road improvements for County Road 46 from the City of Windsor boundary southeasterly to County Road 19. The EA Study also included assessing improvements for the Town of Tecumseh Concession Roads 8 and 9. The EA for County Road 46 and Concession Roads 8 and 9 were undertaken concurrently as one EA Study by BT Engineering Inc. (BTE) on behalf of the County of Essex and the Town of Tecumseh due to the proximity of the roads and the interconnected operational improvements required. The "EA Study" in this document refers to all three roads under study. The County of Essex was the Proponent for the overall study.

The EA for County Road 46 was a Schedule C undertaking of an arterial road under the jurisdiction of the County of Essex and Schedule B for collector roads under the jurisdiction of the Town of Tecumseh. Both components have been documented in this combined report.

The EA Study documents the transportation needs and function of the corridors to accommodate existing and future traffic volumes in the County of Essex. All alternatives considered the operation and safety of all modes of transportation including passenger and commercial vehicles, pedestrians and cyclists. The property requirements needed for the road improvements are also documented in this Study.

The road infrastructure will accommodate the population and economic growth targets in the County of Essex that are identified in the 2024 Provincial Planning Statement (PPS).

1.1 Study Area

The Study Area is approximately 8 km along County Road 46 from the City of Windsor boundary easterly to County Road 19. The Concession Roads 8 and 9 limits extend from County Road 46 northerly to Highway 401, approximately 0.5 and 1.0 km, respectively. The location of the Study Area within the County of Essex is shown in **Figure 1.** The Study Area is illustrated on **Figure 2** and extends 500 m on either side of the roadways under examination.

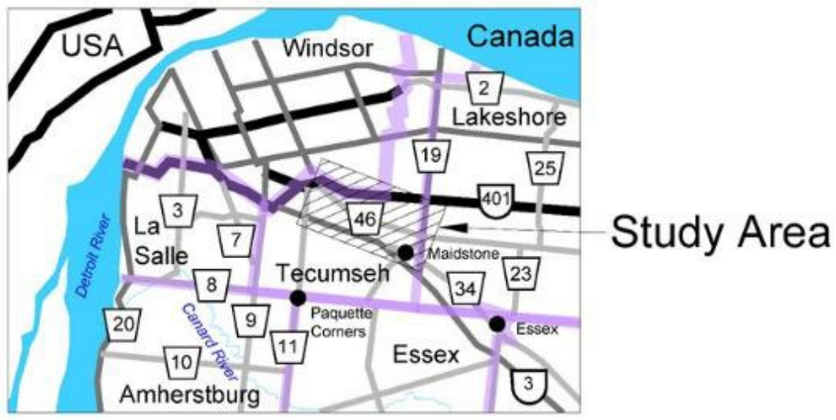


Figure 1: Regional Location

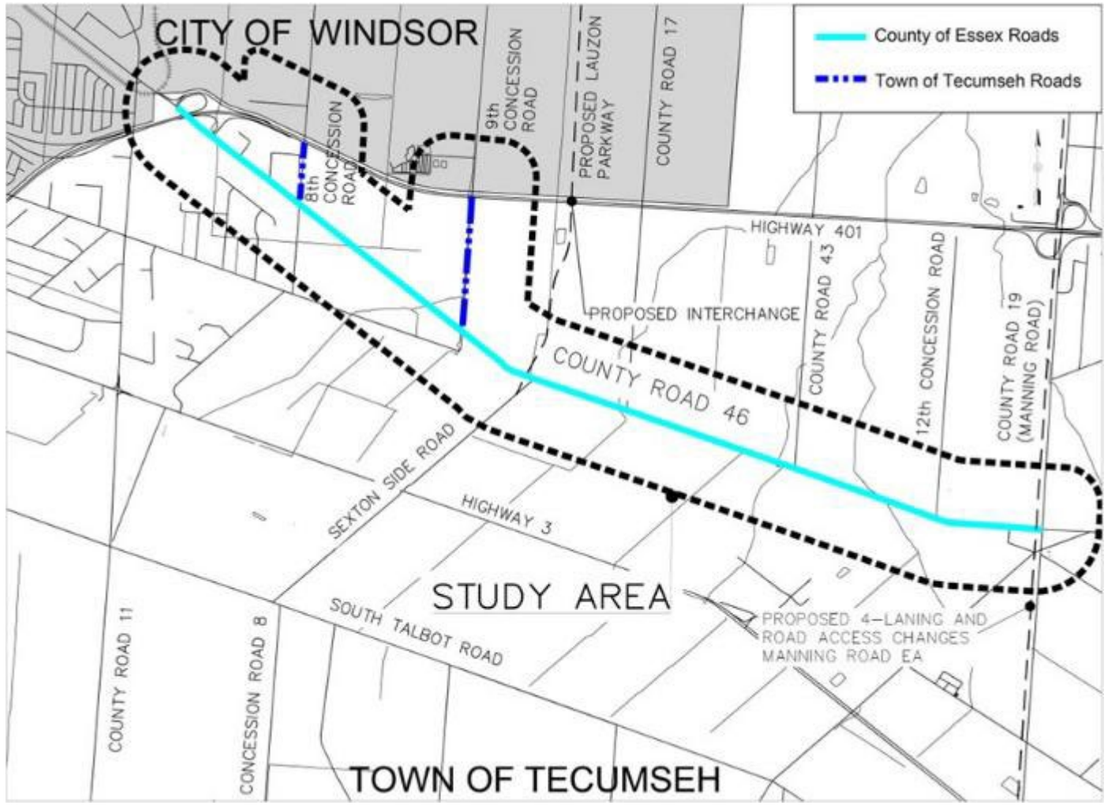


Figure 2: Study Area

1.2 Background

The County of Essex and the City of Windsor are experiencing increasing development growth and an increase in traffic volumes as a result of planned/proposed development. Improvements are required for the safe and efficient movement of all modes of transportation (i.e. vehicles, pedestrians and cyclists). Major corridors within the Study Area include:

- **County Road 46**: County Road 46 is an east-west arterial roadway with a rural 2-lane cross section. This roadway is considered a key route in the Essex-Windsor road network. County Road 46 is projected to have significant future capacity deficiencies due to forecasted population and employment growth and traffic distribution between the Highway 401/Country Road 46 interchange and County Road 19 (Manning Road). County Road 46 is described as a Secondary Regional Road from County Road 19 to County Road 17 and a Class II Arterial Road from County Road 17 to the City of Windsor boundary/ Highway 401.[1]

[1] Essex-Windsor Regional Transportation Master Plan (EWRTMP), IBI Group with Paradigm Transportation Solutions October 2005.

- **Concession Road 8 and Concession Road 9:** Concession Road 8 is a north-south rural road with a two-lane cross section and a posted speed limit of 50 km/h. It runs perpendicular to Highway 401 from County Road 46 where it ends at North Talbot Road to the south.

  Concession Road 9 is a north-south rural road with a two-lane cross section and a posted speed limit of 50 km/h. Concession Road 9 runs perpendicular to Highway 401 from County Road 46 where it becomes North Talbot Road to the south.

  Concession Road 8 and Concession Road 9 have at-grade intersections with County Road 46 with grade separated crossings over Highway 401.

- **Highway 401:** Highway 401 is a major freeway extending from Windsor to the Québec border. It is a major link across Ontario for the movement of goods and services and connects to the busiest international border crossing in North America. The existing interchanges in the Study Area are located at County Road 46 at the City of Windsor boundary and at County Road 19 (Manning Road). Plans have been approved for an extension of Lauzon Parkway to Highway 3. This will result in some redistribution of area traffic with the provision of a new Highway 401 interchange located approximately midway between the County Road 46 and the County Road 19 Highway 401 Interchanges, refer to **Figure 3**.
- **Highway 3**: Highway 3 is a 4-lane divided highway corridor which parallels County Road 46 to the south. It is a major access route serving local area development and inter-regional traffic.
- **County Road 19**: County Road 19 is a 2-lane arterial road that provides a north-south network linkage to and from Highway 401. Plans for widening the corridor to 5 lanes have been in place since 2008.
- **Lauzon Parkway Extension:** The Lauzon Parkway Extension to Highway 3 is planned as a 4-lane arterial. It will support planned industrial and residential growth in the City of Windsor and the Sandwich South Secondary Plan area[2]. The provision of a new interchange with Highway 401 will result in some redistribution of area traffic patterns and the improved access to Highway 401 should also stimulate the development of adjacent industrial lands.

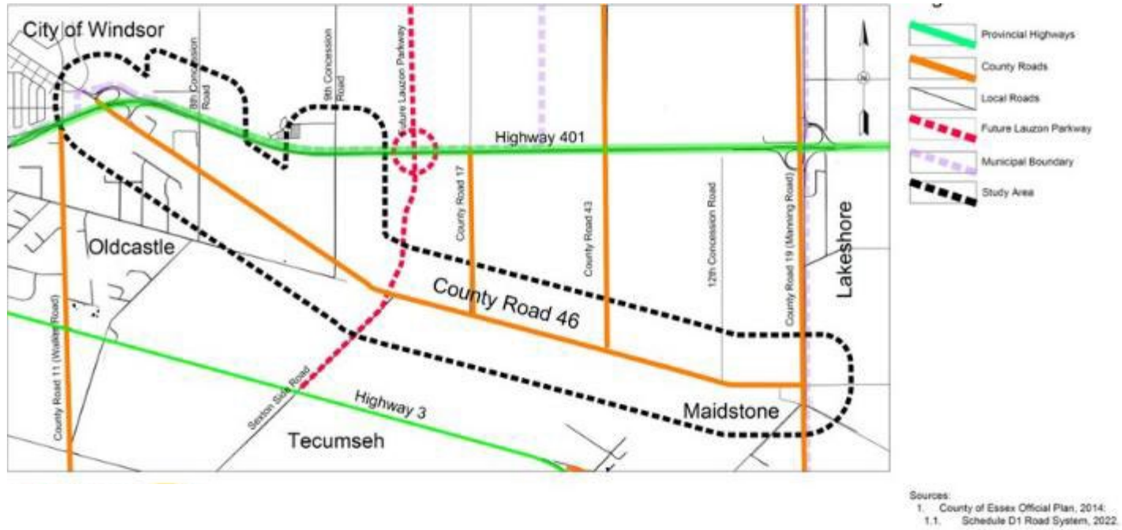


Figure 3: Existing Conditions and Future Roadways

1.2.1 Problem and Opportunity Statement

Road improvements are required within the western sectors of the County of Essex to accommodate planned/proposed development south of Highway 401 bordering the City of Windsor. Planning for the road improvements will facilitate land use development by defining the property requirements and Right-of-Way (ROW) for road improvements and intersection locations.

A long-term transportation plan will be developed that supports travel within the County of Essex by improving the efficiency of the road network; increasing access for all modes of travel and reducing traffic delays.

[2] Lauzon Parkway Improvements Class EA Study Executive Summary Environmental Study Report, MRC, A Member of MMM Group January 20, 2014.

2.0 STUDY PROCESS

This Study was conducted as a Schedule C EA Study for County Road 46 and a Schedule B EA for Concession Roads 8 and 9, meeting the requirements of the Municipal Class Environmental Assessment (MCEA) (Amended 2023). The mandatory requirements vary between the two. The study concludes with the filing of this Environmental Study Report that meets the requirements of both schedules.

This Study has completed all requirements under the MCEA process by establishing the need and justification for the project, considering all reasonable alternatives with acceptable effects on the natural, social and cultural environments, and proactively involving the public in defining a Recommended Plan.

2.1 Guiding Principles

The MCEA is an approved planning document that defines groups of projects and activities and the EA processes which the County of Essex and Town of Tecumseh are committed to follow. The process provides a decision-making framework for effectively meeting the requirements of the *Environmental Assessment Act*.

The study approach reflects the following Ministry of the Environment, Conservation and Parks (MECP) guiding principles for EA studies which are found in the MCEA (Amended 2023):

- Consider all reasonable alternatives.
- Provide a comprehensive assessment of the environment.
- Utilize a systematic and traceable evaluation of net effects.
- Undertake a comprehensive public consultation program.
- Provide clear and concise documentation of the decision-making process and the public consultation program.
- Documentation and “bump-up” principles and processes.
- Environmental clearance processes.

The approved MCEA process is extensive, with significant consultation and outreach to agencies and the public.

2.2 Environmental Assessment Act Requirements

The EA Study followed the MCEA process, thereby meeting the requirements of the Municipal Engineer Association’s MCEA (Amended 2023). The Study was initiated as a Schedule C EA for County Road 46 and a Schedule B EA for Concession Roads 8 and 9 based on the range on anticipated effects and capital cost of the project of the larger County project.

The EA included three Public Consultation Centres (PCCs) and concluded with the preparation of this Environmental Study Report that documents both the County and Town studies. Following this approach, the public was provided with a 30-day review period to review the Study’s conclusions.

The initial step in the MCEA process, was the preparation of a Study Design Report (SDR) that was made available to the public for comment. This satisfies discretionary Step 1.2 of the MCEA process, as illustrated in **Figure 4**. This provided the public and agencies with an early opportunity to comment on the study approach.

2.3 EA Phases

A breakdown of tasks, by phase, for a Schedule B and C study is illustrated in the following MCEA Processes shown in **Figure 4**. The Schedule B project was determined not to be exempt from the MCEA process due to property and Stage 2 Archaeological requirements.

2.4 Consultation Program

Over the course of the Study, input was solicited from the public, stakeholders, agencies and Rights Holders (Indigenous Communities). Input was collected through meetings, the project website, and discussions/communication with interested parties. The Study approach was to work collaboratively with interested parties to address issues and reach a consensus on the preferred design.

The following sections provide a summary of the consultation activities held during the Study.

2.4.1 Notices

Notices for the Study were advertised on the County and Town websites, mailed/emailed to the project contact list, and published as follows:

- Study Commencement and PCC No. 1 – advertised on Facebook and X on March 26, 2024, and April 4, 2024
- PCC No. 2 – advertised on Facebook and X on October 31, November 6 and November 13, 2024
- PCC No. 3 - was advertised Facebook and X on May 22, 2025.
- Notice of Study Completion - was advertised Facebook and X on November 17-20, 2025.

Notices were mailed to adjacent property owners and business owners along County Road 46 and Concession Roads 8 and 9, within the Study Area. In total, approximately 85 individual letters were distributed to adjacent property owners, agencies and stakeholders for each PCC.

See **Appendix B** for copies of the study notices. **Appendix C** includes Indigenous Peoples consultation correspondence. **Appendix D** includes select correspondence received from interested individuals, ministries, agencies, and Indigenous Peoples.

2.4.2 Contact List

A public/agency mailing list was developed at the start of the Study and was updated throughout the duration. The following sections identify the stakeholders, agencies and communities contacted.

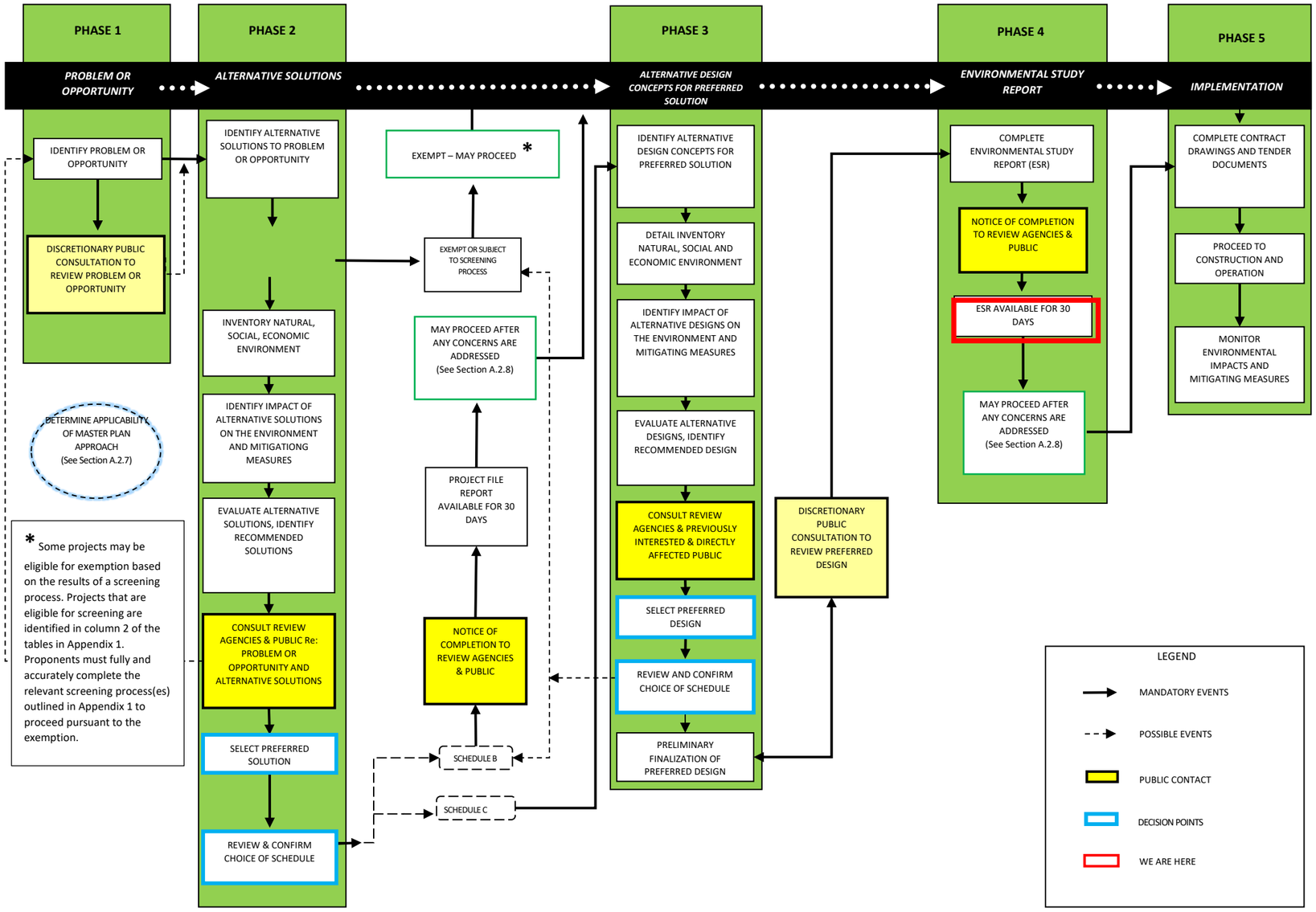


EXHIBIT A.2. MUNICIPAL CLASS EA PLANNING AND DESIGN PROCESS NOTE: This flow chart is to be read in conjunction with Part A of the MCEA

Figure 4: MCEA Process

2.4.3 Stakeholder Consultation

All agencies or groups that may have had an interest in the project or any documentation to contribute to the Study were contacted at the start of the EA for their input. The following ministries, agencies and stakeholders were invited to attend the public meetings:

- Youth Advisory Committee, Municipality of Lakeshore
- Lakeshore Ontario Provincial Police
- Hydro One Telecom Inc.
- Enbridge Gas Inc.
- Plains Midstream Canada
- Ministry of Transportation (MTO)
- MECP
- Ministry of Tourism, Culture and Sport
- Ministry of Municipal Affairs and Housing (London)
- Fisheries and Oceans Canada (DFO) (Sarnia)
- Walkers & Runners Around the County of Essex
- Ciociaro Cycling Club
- Greater Essex County District School Board
- Windsor-Essex Catholic District School Board
- Lakeshore Discovery Public School
- St. Anne's Catholic High School
- Optimist Club of Essex
- Citizens Environment Alliance of Southwestern Ontario & Southeast Michigan
- Conseil Scolaire de District Des Écoles Catholiques du Sud-ouest
- Sun Parlour Emergencies Inc.
- Belle River Public School
- St. John the Baptist Catholic School
- Belle River District High School
- Ecole Elementaire catholique Pavillon des Jeunes
- St. William Catholic Elementary School
- Essex County Accessibility Advisory Committee
- Municipality of Lakeshore Accessibility Committee
- Essex Region Conservation Authority (ERCA)
- Windsor-Essex County Health Unit
- Ontario Trails Council Inc.
- Windsor-Essex Regional Chamber of Commerce
- Lower Thames Valley Conservation Authority
- Share the Road Cycling Coalition
- Bike Windsor Essex
- Windsor Bicycling Committee
- Rotary Club of Amherstburg
- Rotary Club of Essex
- Rotary Club of LaSalle Centennial
- Kingsville Lions Club
- The Corporation of the Town of Tecumseh
- The Corporation of the Town of Lakeshore
- Stevenson G & L Transport
- County of Essex EMS
- Windsor Essex County Health Unit

2.4.4 Indigenous Peoples Consultation

The County and Town have a constitutional duty to consult with Indigenous Communities with traditional land use or interests within the Study Area. Notices were sent to the Indigenous Communities within the vicinity of the Study Area notifying them of the Study start-up and key milestones. Those contacted included:

- Aamjiwnaang First Nation
- Caldwell First Nation
- Chippewas of Kettle and Stony Point First Nation
- Chippewas of the Thames First Nation
- Delaware Nation at Moraviantown
- Métis Nation of Ontario
- Mississaugas of the New Credit First Nation
- Munsee-Delaware Nation
- Oneida Nation of the Thames
- Southern First Nations Secretariat
- Walpole Island First Nation, Bkejwanong Territory

The County and Town have committed to keeping all Indigenous Communities updated on the progress of the study and will invite Indigenous field monitors to participate during future environmental fieldwork. The Indigenous correspondence is found in **Appendix C**.

2.5 Public Meetings

Three PCC's were held during the Study to present the project, the assessment of alternatives and the Technically Preferred Plan (TPP). These meetings were an integral component of the Study – seeking input and comments from the local community/stakeholders. Public and agency representatives were encouraged to provide input/feedback. County, Town and consultant staff were available to respond to any verbal comments/questions at the online events and during the subsequent 2-week comment period.

See **Appendix B** for the PCC Summary Reports.

2.5.1 PCC No. 1

The first PCC for this study was held on Thursday, April 4, 2024, from 5:00 to 8:00 pm at the Ciociaro Club in Oldcastle, Ontario. The PCC No. 1 exhibits presented an overview of the MCEA process, background information, the need and justification of the study, alternative solutions, the project schedule, and next steps. A presentation was given to provide an overview of the Study.

Sixty-five (65) people registered at PCC No. 1. Comments were received from those that participated in the PCC or who reviewed the exhibits online. Nine (9) comment sheets were submitted at PCC No. 1 and during the subsequent two-week comment period.

The primary conclusions from the PCC include:

- There was general agreement that improvements are required to County Road 46, and Concession Roads 8 and 9 to reduce traffic congestion and improve safety of the roadways.
- Support for the consideration of roundabouts.
- Support for the consideration of turning lanes on County Road 46.
- Support for consideration of widened shoulders along County Road 46 and Concession Roads 8 and 9.
- Support for active transportation routes.
- Support for protecting natural heritage areas and restoring riparian zones, wildlife habitat, and stormwater retention areas

2.5.2 PCC No. 2

The second PCC for this study was held on Wednesday, November 13, 2024, from 5:00 to 8:00 pm at the Ciociaro Club in Oldcastle, Ontario. The PCC No. 2 exhibits presented an overview of the MCEA process, background information, the need and justification of the study, alternative solutions, the project schedule, and next steps. A presentation was given to present the information and host a Questions and Answers session.

Twenty-four (24) people registered at PCC No. 2. Comments were received from those that participated in the PCC or who reviewed the exhibits online. Five (5) comment sheets were submitted at PCC No. 2 and during the subsequent two-week comment period.

The primary findings from discussion with the public include:

- There was general agreement that improvements are required to County Road 46, and Concession Roads 8 and 9 to reduce traffic congestion and improve safety of the roadways.
- Support for the consideration of roundabouts.
- Support for the consideration of turning lanes on County Road 46.
- Support for consideration of widened shoulders along County Road 46 and Concession Roads 8 and 9.
- Support for active transportation routes.
- Support for protecting natural heritage areas and restoring riparian zones, wildlife habitat, and stormwater retention areas

2.5.3 PCC No. 3

The third PCC for this study was held on Monday, June 2, 2025, from 5:00 to 8:00 pm at the Ciociaro Club in Oldcastle, Ontario. The PCC No. 3 exhibits presented noise mitigation findings, roadway and intersection design alternatives and the TPP. A presentation was given to present the information and host a Questions and Answers session.

Twenty (20) people registered at PCC No. 3. Comments were received from those that participated in the PCC or who reviewed the exhibits online. Six (6) comment sheets were submitted at PCC No. 3 and during the subsequent two-week comment period.

The primary findings from discussion with the public include:

- There was general agreement that improvements are required to County Road 46, and Concession Roads 8 and 9 to reduce traffic congestion and improve safety of the roadways.
- Support for the consideration of roundabouts.
- Support for the consideration of turning lanes on County Road 46.
- Support for consideration of widened shoulders along County Road 46 and Concession Roads 8 and 9.
- Support for active transportation routes.
- Support for protecting natural heritage areas and restoring riparian zones, wildlife habitat, and stormwater retention areas.

2.5.4 Council Resolutions

The County of Essex Council endorsed the EA Recommended Plan for County Road 46 on October 15, 2025. The Town of Tecumseth Council endorsed the Recommended Plan for Concession Roads 8 and 9 on October 14, 2025. The Council Resolutions are found in **Appendix L**.

3.0 EXISTING CONDITIONS

The existing conditions of the natural and built environment, land use and property, and socio-economic environment are described in this section.

3.1 Traffic and Transportation

The County of Essex and the Town of Tecumseh are experiencing increasing development growth and an increase in traffic volumes as a result of traffic forcasted. Improvements are required for the safe and efficient movement of all modes of transportation (i.e. vehicles, pedestrians and cyclists).

Road network improvements are required within the western sectors of the County of Essex to accommodate planned/proposed development south of Highway 401 and bordering the City of Windsor. This planning is required now to assist land use development by defining the future road ROW and intersection locations. It will provide certainty for developers to plan their adjacent lands.

Roadway improvements provide an opportunity to: improve efficiency of the road network; improve access and reduce traffic delays; and define a long-term transportation plan to support travel within the County of Essex. Roadway improvements also support future growth within Town of Tecumseh and improve transportation for all road users.

Improvements are required to improve safety while accommodating planned growth in the County of Essex and the adjacent City of Windsor. The proposed regional road improvements for County Road 46 and Concession Roads 8 and 9 will accommodate traffic travelling to/from the new developments in the Oldcastle Hamlet, an employment hub and other trip origins and destinations in the surrounding County, such as Maidstone Hamlet. See **Photo 1** that shows heavy vehicles at the County Road 46 and Concession Road 10 intersection.

Photo 1: County Road 46 at Concession Road 10

3.1.1 Essex County Transportation Master Plan

The County of Essex is developing an updated Transportation Master Plan (TMP) that will evaluate current traffic conditions, changes that have been forecast since the previous TMP was developed and recommend measures to satisfy the County's transportation requirements to 2051. The updated TMP has been developed in parallel with this study. It establishes projected travel demands to comprehensively address the requirements for the movement of people and goods within the County of Essex including walking, cycling, public transit and motor vehicles.

3.2 Natural Environment

Existing natural environment conditions within the Study Area are described in this section. The Natural Environment Memorandum is in **Appendix E**.

3.2.1 Physiography Soils and Drainage

The Study Area falls within the St. Clair Clay Plains physiographic region, as defined by Chapman and Putnam (1984:147). The region consists of an extensive clay plain. Beach ridges are present within the vicinity of the Study Area in all directions.

`As a former lakebed, the vicinity of the Study Area is poorly drained. Drainage has been improved by the excavation of deep ditches along major roads. Interior drains generally follow the route of natural watercourses but have been significantly altered, straightened and extended. Pike Creek and its tributaries are depicted on historical mapping as flowing through the eastern segment of the project area. These watercourses include those that have been altered to improve the poor drainage of the area.

3.2.2 Climate Change

The Study considered the impacts of climate change and the effectiveness of adaptation strategies to reduce the County's vulnerability. Strategies being implemented as part of or in conjunction with this ESR include:

- The expansion of cycling infrastructure to encourage active transportation;
- Improved access to transit services and the potential to provide transit services along the corridor in the future;
- Low impact design to meet the County's water retention target and mitigate increased precipitation due to climate change.

The widening of County Road 46 is not anticipated to produce an increase or decrease in greenhouse gas emissions based on the following:

- Vehicle trips along the corridor will be generated by: a redistribution of cars from existing roads; and new trips generated by future development (these trips would be added to the transportation network regardless of the County Road 46 widening).
- The construction will not be a significant source of greenhouse gasses.

- The addition of multi-use paths (MUPs)/sidewalks will encourage more active transportation along the corridor and will have a beneficial long-term effect on greenhouse gas emissions.

3.2.3 Source Water Protection

Source water is the water that Water Treatment Plants (WTPs) use to supply us with safe, clean drinking water. In the Essex Region, the municipal drinking water comes from Lake Erie, Lake St. Clair and the Detroit River. There are eight municipal WTPs that serve over 95% of the population in the Essex region. The remaining population, less than 5%, depends on groundwater or hauled water.[3]

The Essex Region Source Protection Plan identifies policies to protect municipal drinking water against existing and future threats in compliance with the *Clean Water Act, 2006* (Ontario Regulation 287/07). The *Clean Water Act* requires municipalities to notify Source Protection Authorities and Committees when the municipalities receive applications that could create or modify a transport pathway.

The Study Area is not located within an Intake Protection Zone or a Well Head Protection Area.

3.2.4 Surface Water Features

The Study Area is located within the Detroit River Watershed and Sydenham River - St. Clair River Watershed and is under the jurisdiction of the ERCA.

The drainage area of Little River and Pike Creek was generated using the Ontario Watershed Information Tool (OWIT) by the Ministry of Natural Resources (MNR) and is provided in **Figure 5**. The OWIT watershed tool indicates that the watercourse crossings within the Study Area are tributaries of Little River or Pike Creek.

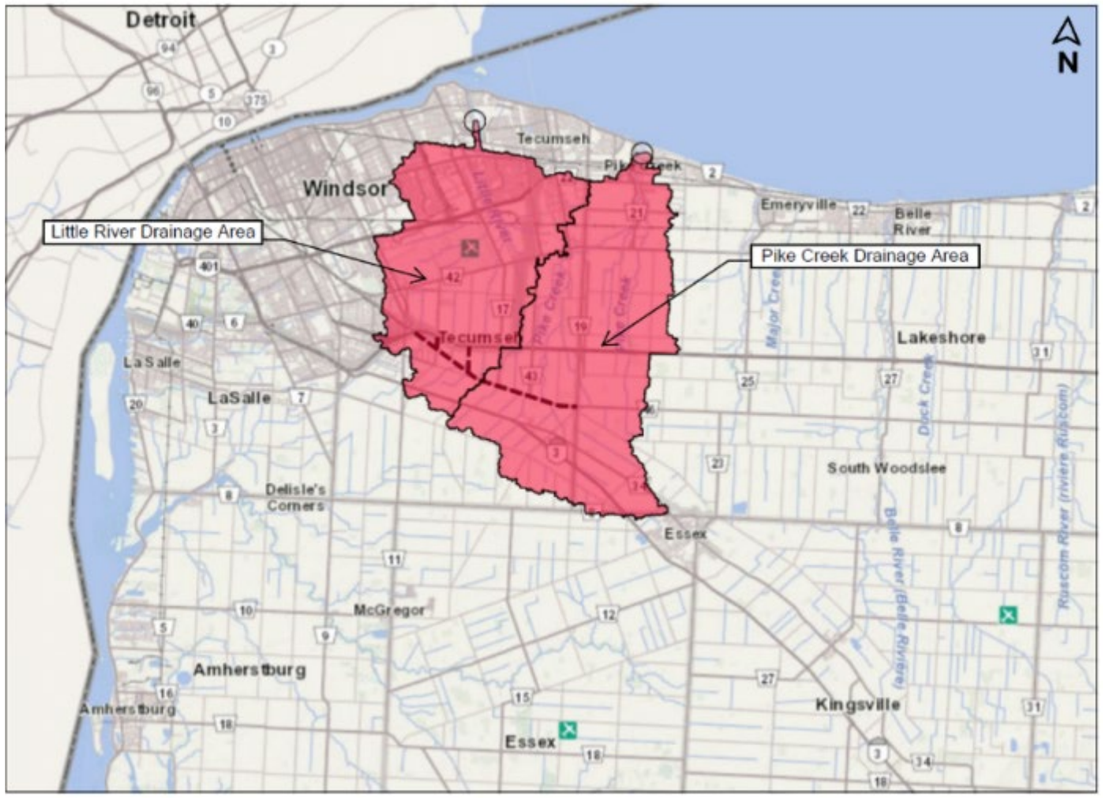


Figure 5: Drainage Area

3.2.5 Fish and Fish Habitat

Nine (9) watercourses that intersect County Road 46 within the Study Area limits are identified on **Figure 6**. Site Photos of each of the watercourse crossings within the Study Area (Photos 1-16) are documented in **Appendix E**.

[3] Source Water Protection | ERCA

Figure 6: Watercourse Crossings

No fish community sampling or water sampling was undertaken during the site reconnaissance on November 17, 2023. However, the characteristics of each of the nine (9) watercourses were noted during site reconnaissance and are summarized in **Table 1**. Records available via ARALS mapping for the portion of Pike Creek that intersects County Road 46 indicate that White Sucker has been observed in Watercourse Crossing 6.

Records of a tributary north of County Road 46, located parallel, on the west side, to Concession Road 9, included the following fish species:

- Banded Killifish
- Bluntnose Minnow
- Central Mudminnow
- Common Carp
- Creek Chub
- Fathead Minnow Golden Shiner
- Goldfish (non-native)
- Green Sunfish
- Northern Pike
- Pumpkinseed
- White Sucker

3.2.6 Terrestrial

3.2.6.1 Avifauna

The Atlas of Breeding Birds of Ontario online tool has reported records of several avifauna species within the Study Area. The Breeding Birds of Ontario Summary Sheet is provided in **Appendix E**.

The Eastern Wood-pewee, a species of Special Concern under the ESA has been recorded by the NHIC within the Study Area. Species of Special Concern are not afforded protection under the ESA as they are not yet considered Endangered or Threatened. However, threats have been identified for species of Special Concern that could alter the species' status.

3.2.6.2 Reptiles

Butler's Gartersnake has a status of Endangered under the *Endangered Species Act* (ESA) and has been recorded by the NHIC within the Study Area. Populations of Butler's Gartersnake are concentrated near St. Clair Lake, Detroit River, and further north near St. Clair River and Lake Huron. The preferred habitat of Butler's Gartersnake includes dense grasslands and old fields with small pockets of wetlands, localized environments of which can be found in the Study Area.

The following reptiles and amphibians have been recorded within the Study Area according to the Ontario Nature Reptile and Amphibian Atlas:

- Blanding's Turtle (Threatened)
- Midland Painted Turtle
- Northern Map Turtle (Special Concern)
- Snapping Turtle (Special Concern)
- Eastern Foxsnake (Endangered)
- American Toad
- Dekay's Brownsnake
- Eastern Massasauga (Endangered)
- Red-bellied Snake
- Eastern Gartersnake
- American Bullfrog
- Green Frog
- Northern Leopard Frog
- Western Chorus Frog
- Eastern Musk Turtle (Special Concern)
- Red-eared Slider
- Butler's Gartersnake (Endangered)

The above species afforded protection under the ESA include Blanding's Turtle (Threatened), Eastern Massasauga (Endangered), and Eastern Foxsnake (Endangered). Northern Map Turtle, Eastern Musk Turtle and Snapping Turtle have a status of Special Concern under the ESA.

3.2.6.3 Terrestrial Features

Terrestrial features are located along the naturalized stream corridors in the Study Area, several hedgerows in-between agricultural fields and alongside the ROW of County Road 46, and two woodlots that abut County Road 46.

Watercourse Crossing 3 meanders through a forested ravine north of County Road 46 in the west terminus of the Study Area. The forested ravine is comprised of both deciduous and coniferous trees. An additional woodlot is located south of County Road 46 in the east terminus of the Study Area and is 12 hectares in size, comprised predominately of deciduous trees. Existing vegetation outside of the naturalized watercourse corridors is a mix of non-native cultural species and common native plants. No provincially rare or endangered plant species were observed during site reconnaissance.

Table 1: Watercourse Characteristics

Watercourse ID	Coordinates (Latitude/Longitude)	Drainage System	Existing Structure	Type	Morphology	Streambed Composition	Vegetation
1	**Lat:** 42.24632° N **Lon:** 82.95625° W	Little River	4 Concrete Culverts	Channelized	Flat	Muck Detritus	Emergent Vegetation: Phragmites, Cattails Algal Blooms
2	**Lat:** 42.24173° N **Lon:** 82.94686° W	Little River	Linear Roadside Ditch	Channelized	Run/ Flat	Detritus	Emergent Vegetation: Phragmites
3	**Lat:** 42.23892° N **Lon:** 82.94214° W	Little River	Corrugated Steel Pipe and Concrete Headwall	Channelized	Run	Detritus Muck	Emergent Vegetation/ Submergent Vegetation: Phragmites Algal Blooms
4	**Lat:** 42.23459° N **Lon:** 82.93440° W	Little River	Corrugated Steel Pipe and Concrete Headwall	Channelized	Run/Flat	Unknown	Emergent Vegetation Submergent Vegetation
5	**Lat:** 42.23305° N **Lon:** 82.93002° W	Little River	Corrugated Steel Pipe and Concrete Headwall	Channelized	Run/Flat	Unknown	Emergent Vegetation
6	**Lat:** 42.22830° N **Lon:** 82.91661° W	Pike Creek	Twin Culvert and Concrete Headwall	Stream	Run/ Flat	Muck	Emergent Vegetation
7	**Lat:** 42.22458° N **Lon:** 82.90120° W	Pike Creek	Boxed Concrete Culvert	Stream	Run/Riffle/Flat	Detritus Muck Cobble	Algal Blooms
8	**Lat:** 42.22159° N **Lon:** 82.88995° W	Pike Creek	Concrete Culvert Gabion Basket retaining wall	Stream	Run/Riffle	Detritus Muck Silt	Algal Blooms
9	**Lat:** 42.22000° N **Lon:** 82.87501° W	Pike Creek	Concrete Boxed Culvert	Stream	Run	Muck Silt	Emergent Vegetation

Woodlot A

Woodlot A is a Dry-Fresh Deciduous Forest Ecosite within a species composition including Hackberry (*Celtis occidentalis)*, Red Oak (*Quercus rubra*), Sugar Maple (*Acer saccharum*), Basswood (*Tillia americana*) and Green Ash (*Fraxinus pennsylvanica*). Along the edges of the woodlot, dense cover of Common Buckthorn (*Rhamnus cathartica*) and White Mulberry (*Morus alba*) was visible. Refer to **Figure 7.**

Figure 7: Woodlots

The County of Essex Official Plan Schedule B (Natural Environment Overlay) identifies this woodlot as a component of its natural heritage system. Table 7-1 in the Official Plan identifies that all woodlots ≥2 ha in size are considered significant, therefore Woodlot A is considered as significant in the County of Essex.

Potential bat roost trees were visible in the woodlot, which can provide habitat to Species at Risk (SAR) bat species. Refer to Attachment 2 (Site Photos).

The Ontario Ministry of Natural Resources (OMNR) Natural Heritage Information Centre (NHIC) occurrence records for the area identify the presence of the Eastern Wood-Pewee (*Contopus virens*), a species of Special Concern listed in the *Endangered Species Act* (ESA). As this species is known to inhabit mature deciduous forests, there is a high likelihood that the Eastern Wood-Pewee utilizes this woodlot as nesting habitat.

The woodlot would also provide nesting habitat for other bird species listed and protected through the *Migratory Bird Convention Act* (MBCA) and has potential to support other rare or SAR plant and wildlife species.

Woodlot B

Woodlot B is approximately 4.21 ha in size and is considered a significant calendar in the County of Essex. It is a Dry-Fresh Deciduous Forest Ecosite within a species composition including Hackberry (*Celtis occidentalis*), Red Oak (*Quercus rubra*), Carolina Poplar (*Populus x canadensis*) and Green Ash (*Fraxinus pennsylvanica*). Visual observations were limited due to private lands between the road allowance and main body of the woodlot.

The County of Essex Official Plan Schedule B (Natural Environment Overlay) identifies this woodlot as a component of its natural heritage system.

The OMNR Natural Heritage Information Centre (NHIC) occurrence records for the area identify the presence of the Eastern Wood-Pewee (*Contopus virens*), a species of Special Concern listed in the *Endangered Species Act* (ESA). As this species is known to inhabit mature deciduous forests, there is a high likelihood that the Eastern Wood-Pewee utilizes this woodlot as nesting habitat.

The woodlot would also provide nesting habitat for other bird species listed and protected through the *Migratory Bird Convention Act* (MBCA) and has potential to support other rare or SAR plant and wildlife species.

3.3 Cultural Environment

Existing cultural environment conditions within the Study Area are described in this section.

3.3.1 Built Heritage Resources and Cultural Heritage Landscapes

The Ministry of Tourism, Culture and Sport (MTCS) Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes Checklist was prepared and, as a result, a Cultural Heritage Evaluation Report (CHER) was recommended. The CHER included a historic background review, site visit, and evaluation of heritage values.

The Study Area is a utilitarian mix of employment and residential uses. The residential buildings are primarily 1 storey, using a variety of styles and materials on large lots. The area is a representative landscape accented with representative buildings.

There are no heritage resources, and the cultural landscape setting shows extensively as flat, cultivated lands, remnant tree lines and containing scattered residences and light industry.

The MTCS Checklist and CHER are in **Appendix F**.

3.3.2 Archaeology

A Stage 1 archaeological assessment was conducted as part of a MCEA Schedule C for proposed roadway improvements to County Road 46 and Concession Roads 8 and 9 in the Town of Tecumseh, Ontario. The project area includes the existing rights-of-way and a 30 m buffer beyond the ROW boundaries to account for potential design alternatives. The Stage 1 assessment was conducted in accordance with the provisions of the *Environmental Assessment Act*.

The Stage 1 background study included a review of current land use, historic and modern maps, past settlement history for the area and consideration of topographic and physiographic features, soils and drainage. It also involved a review of previously registered archaeological resources within 1 km of the project area and previous archaeological assessments within 50 m. The background study indicated that the property had potential for the recovery of archaeological resources due to the proximity (i.e., within 300 m) of features that signal archaeological potential, namely:

- Mapped 19th-century thoroughfares (County Road 46, Manning Road, Malden Road, Concession Road 12, County Road 43, County Road 17, Concession Road 9, Concession Road 8 and Walkers Road);
- Mapped 19th-century structures;
- Primary water source (Pike Creek); and,
- A registered archaeological site (AbHr-58).

As the project area contained several features signaling archaeological potential, a Stage 1 property inspection was conducted to evaluate the current conditions of the project area and determine if any areas of archaeological potential remained intact within the project area.

Based on the Stage 1 background research and property inspection, the following recommendations apply:

- The agricultural fields within the project area (25.27 ha; 29.8%) that retain archaeological potential are recommended for Stage 2 assessment. In keeping with provincial standards, the ploughable land is recommended for pedestrian survey, using a 5 m transect interval.
- The wooded and grassed areas within the project area (8.34 ha; 9.8%) that retain archaeological potential will require Stage 2 assessment. In keeping with provincial standards, the unploughable land is recommended for test pit survey, using a 5 m transect interval.
- Portions of the project area that have been previously disturbed by modern construction activities do not retain archaeological potential and do not require further assessment (27.65 ha; 32.6%).
- All previously assessed portions of the project area where no further assessment was recommended do not require further assessment (23.43 ha; 27.7%).
- If the extent of the project area changes to incorporate lands not addressed in this study, further assessment will be required.

The Stage 1 Archaeological Assessment Report is found in **Appendix G**.

3.4 Socio-Economic Environment

Existing socio-economic environment conditions within the Study Area are described in this section.

3.4.1 Land Use

3.4.1.1 Existing Land Uses

A detailed overview of land uses within the Study Area along County Road 46, Concession Roads 8 and 9 including commercial businesses, private and residential lands, and significant environmental features can be found in **Appendix H**. A summary of land uses found along each roadway is described below.

County Road 46: In the Study Area, the landscape varies from natural disturbed areas near the overpass which connects County Road 46 and Highway 401 to a predominantly commercial and industrial zone extending beyond the overpass to Concession Road 8. East of Concession Road 8, there are extensive agricultural fields and a woodland on the north side, while the south side accommodates a mix of businesses and residential buildings. The intersection of Concession Road 9 and County Road 46 is characterized by agricultural fields in three quadrants and a truck repair shop in the southeast quadrant. Continuing along County Road 46, the landscape includes a mix of residential, and commercial uses.

Agricultural fields are prevalent at the three-way intersection with Sexton Side Road and north of a Tax Services centre. Further east, intersections with Concession Roads 10, 11, and 12 feature a mix of residential buildings and agricultural fields. Heading east towards County Road 19 (Manning Road), the landscape is marked by expansive agricultural fields on both sides, interspersed with residential buildings.

The intersection of Middle Road (County Road 46) and County Road 19 (Manning Road) has commercial businesses, including a gas station and a wheel store, and agricultural fields on the west side of the intersection.

Concession Road 8: At the intersection of County Road 46 and Concession Road 8, the Study Area exhibits a mix of commercial and industrial land use. To the north, natural disturbed areas are found leading up to the overpass of Concession Road 8 over Highway 401. These natural disturbed areas and agricultural fields continue north of the overpass to the Town of Tecumseh's border.

Concession Road 9: The intersection of Concession Road 9 and County Road 46 features a blend of agricultural and commercial spaces. Moving north, the landscape transitions into a mix of agricultural/ residential areas with agricultural fields situated on both sides of the road. Further north there is the Concession Road 9 overpass over Highway 401 which is surrounded by naturally disturbed areas and agricultural fields. These natural disturbed areas and agricultural fields continue north of the overpass to the Town of Tecumseh's border.

3.4.2 Long Term Planning

Long term planning studies have been completed in the Study Area to document the proposed land uses and planned improvements to the transportation network. These reports are summarized in the following sections.

3.4.2.1 Essex County Official Plan

The County of Essex Official Plan[4] is a comprehensive planning document that identifies long-term goals and objectives to guide the development of the County of Essex. The Official Plan is coordinated with the local municipalities on planning and development issues that exceed municipal boundaries. It contains specific land use policies for settlement areas, agricultural areas and the protection of the natural environment. The County of Essex's transportation policies include all modes of travel including pedestrian and bicycle paths. The County of Essex's Official Plan encourages safe, energy efficient and economical movement of people and goods; identifies a hierarchy of roads based on the TMP; documents appropriate ROW widths; promotes active transportation; and transit services throughout; identifies corridors to protect for future transportation, transit and other infrastructure; identifies policies to protect railway and air services; and restricts development on private roads. Refer to **Figure 8**.

3.4.2.2 Essex-Windsor Region Transportation Master Plan (2005)

The Essex-Windsor Region Transportation Master Plan (EWRTMP) identifies satisfies Phases 1 and 2 of the MCEA process dealing with transportation system needs and alternative planning strategies respectively.

County Road 46 from Highway 401 to County Road 19 Road was identified in the EWRTMP as a roadway that will experience significant capacity deficiencies due to population and employment growth and distribution.

[4] County of Essex Official Plan, 2014

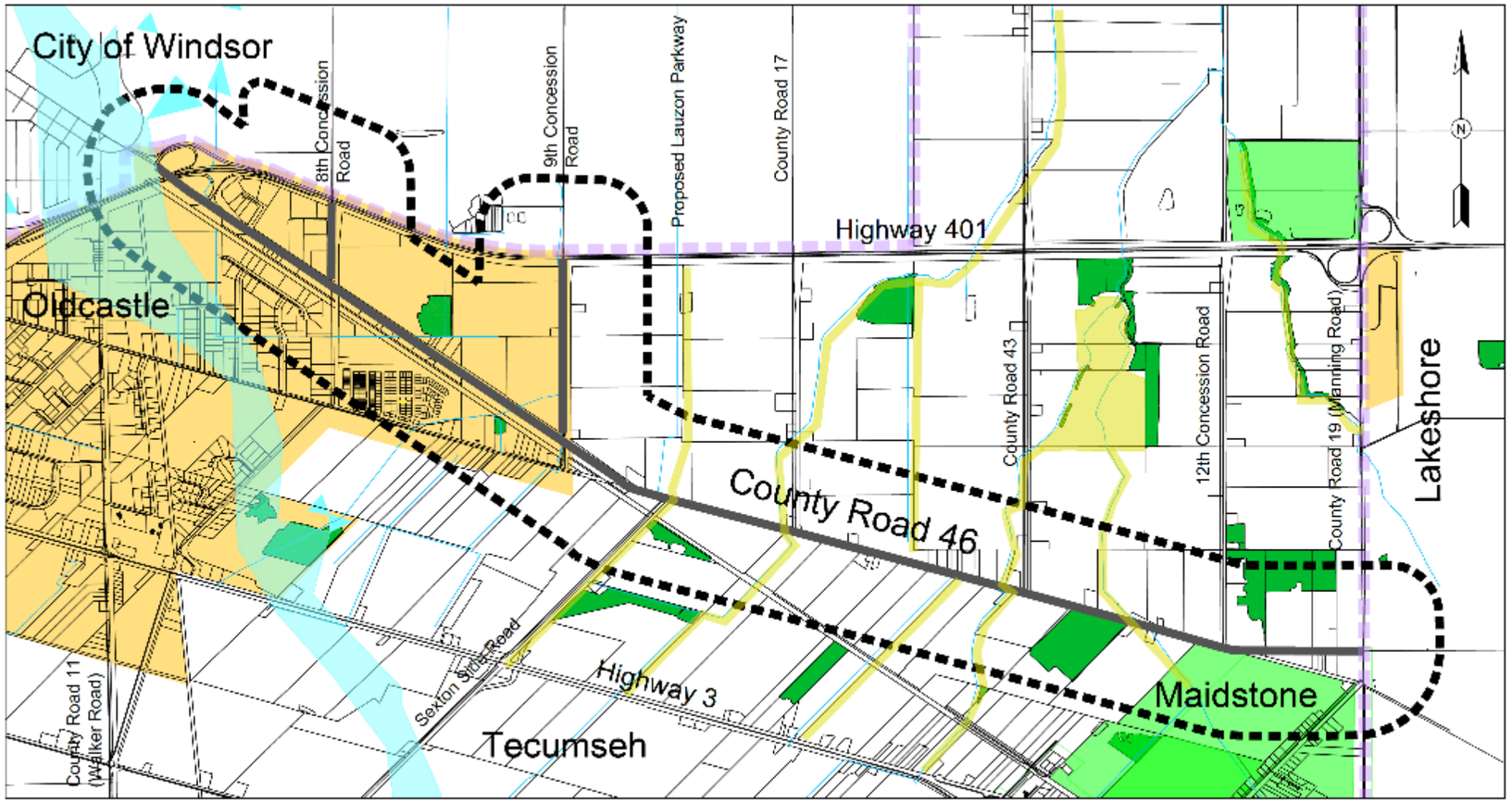
3.4.2.2.1 Essex County TMP (2026)

The County of Essex is developing an updated Transportation Master Plan (TMP) to recommend measures to satisfy the County's transportation requirements to 2051. The updated TMP has been developed in parallel with this study. It establishes projected travel demands to comprehensively address the requirements for the movement of people and goods within the County of Essex including walking, cycling, public transit and motor vehicles.

3.4.2.2.2 County Wide Active Transportation Study Master Plan (2012)

The County Wide Active Transportation Study Master Plan[5] (CWATS) contains recommendations and guidelines for the planning, design, implementation and management of an active transportation network serving all the County of Essex. County Road 46 was identified to include paved shoulders to better accommodate cyclists by providing a linkage to other proposed network facilities in the CWATS. Immediately to the south of the subject section of County Road 46 it identifies a proposed MUP for pedestrians and cyclists utilizing the abandoned Canada Southern rail corridor.

[5] County Wide Active Transportation Study (CWATS) Master Plan, September 2012



Legend

- Natural Environment Overlay
- Secondary Restoration Opportunity Overlay
- Significant Groundwater Recharge Areas (Vulnerable - Low)
- Primary Settlement Areas
- Secondary Settlement Areas
- Municipal Boundary
- Study Area

County of Essex Tecumseh

County of Essex County Road 46 and Town of Tecumseh Concession Roads 8 and 9

County of Essex Official Plan Designations

Sources:

1. County of Essex Official Plan, 2014:
   - 1.1. Schedule A2 Settlement Structure Plan
   - 1.2. Schedule B2 Natural Heritage System
   - 1.3. Schedule B3 Natural Heritage System Restoration Overlay
   - 1.4. Schedule C5 Groundwater Recharge Areas

Figure 8: Essex County Official Plan (2014)

3.4.2.3 Town of Tecumseh Official Plan

The Town of Tecumseh Official Plan, approved by the County of Essex, contains goals, objectives and policies established primarily to manage and direct physical change and the effects on the social, economic and natural environment of the Town.[6] The land uses identified on Schedule "A" are agricultural/Natural Areas outside the Settlement Area boundaries. The largest settlement in the Study Area is identified as the Oldcastle Hamlet located at the west end, adjacent to the City of Windsor. The Hamlet is an Employment Node with Residential Neighbourhoods and Future Growth Areas. Adjacent to County Road 46, along the south side, is a Potential Human Made Linkage, located on an abandoned railway corridor. At the east end of the Study Area is the Hamlet of Maidstone located south of County Road 46. This hamlet is made up of Residential Neighbourhoods with three Commercial Nodes and one Community Node. Refer to **Figure 10**.

Schedule "C" identifies the Natural Heritage System with the Town of Tecumseh. Within the Study Area, outside the hamlets the waterways/municipal drains are identified as Restoration Opportunities Overlay. These areas include the Pike Creek and Little River tributaries. The area's woodlots are designated Natural Environment Overlay, which are second priority natural heritage features.

Schedule "E-1" provides the Road Classifications for the Official Plan. Concession Road 8 is designated a Collector (Urban) and the Concession Road 9 is designated a Collector Road (Rural). The ROW for all Collector Roads is 23 m.

On-Road CWATS is indicated on County Road 46 within the Study Area on Schedule "E-2". Concession Roads 8 and 9 are identified as providing CWATS On- and Off- Road Routes. Also identified is the Proposed ERCA Route along the abandoned railway south of County Road 46.

3.4.2.4 Maidstone Hamlet Secondary Plan

The Maidstone Hamlet Secondary Area provides a framework for the growth and development of the southeastern section of the Town of Tecumseh. This area is specifically outlined in Schedule B3: Maidstone Hamlet Settlement Area Land Use Plan of the Official Plan (Volume 1 - **Figure 9**).

Study Area Boundary: The lands within the Study Area are designated as the "Maidstone Hamlet Secondary Planning Area." The boundary of this area encompasses approximately 47 hectares, primarily following County Roads 19 and 46, and includes a combination of rural and residential lands.

Land Use Designations: The Maidstone Hamlet Secondary Area includes the following land use designations:

Residential Expansion Area: The Residential Expansion Area is intended for the development of approximately 900 new homes. This development will consist primarily of low-density residential housing, including single-detached homes, semi-detached homes, and townhouses, with densities ranging from 10 to 12 units per hectare.

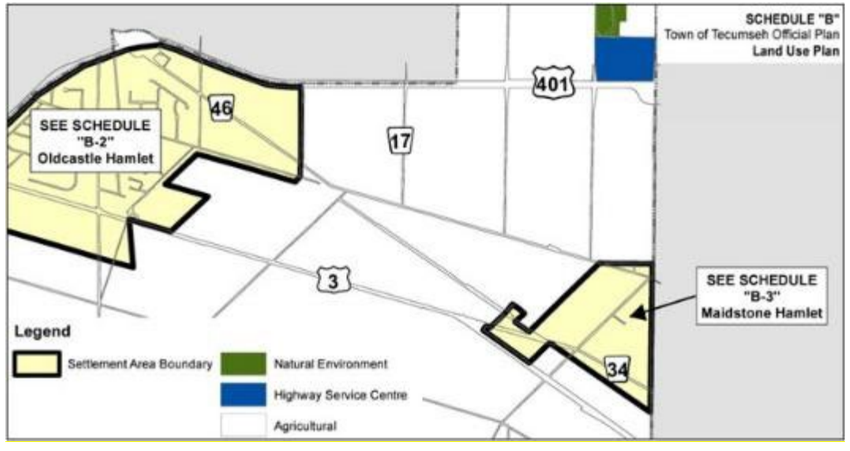


Figure 9: Town of Tecumseh OP Schedule B (Land Use Plan)

Open Space: Open Space areas will serve as green corridors linking residential areas with natural features and recreational amenities. Public access will be facilitated through well-maintained trails and MUPs.

Agricultural/Natural Areas: Portions of the Maidstone Hamlet area are designated for agricultural and natural heritage conservation.

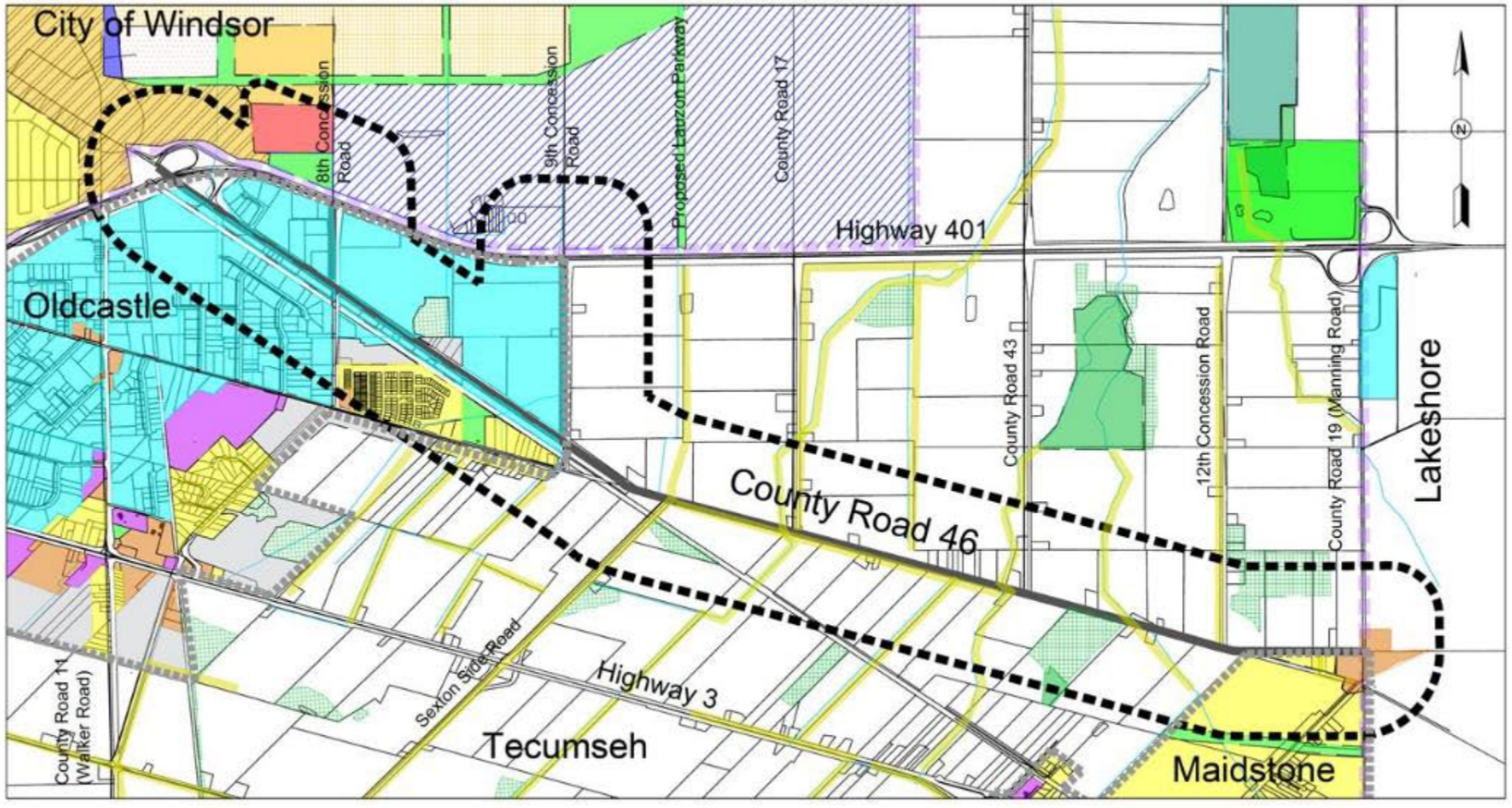
Based on the policies outlined in the Maidstone Hamlet Secondary Area plan and the broader OP the proposed transportation and roadway changes is not expected to be impacted by the secondary plan's provisions. The secondary plan provides a framework that supports residential expansion, including the development of approximately 900 new homes within the Residential Expansion Area.

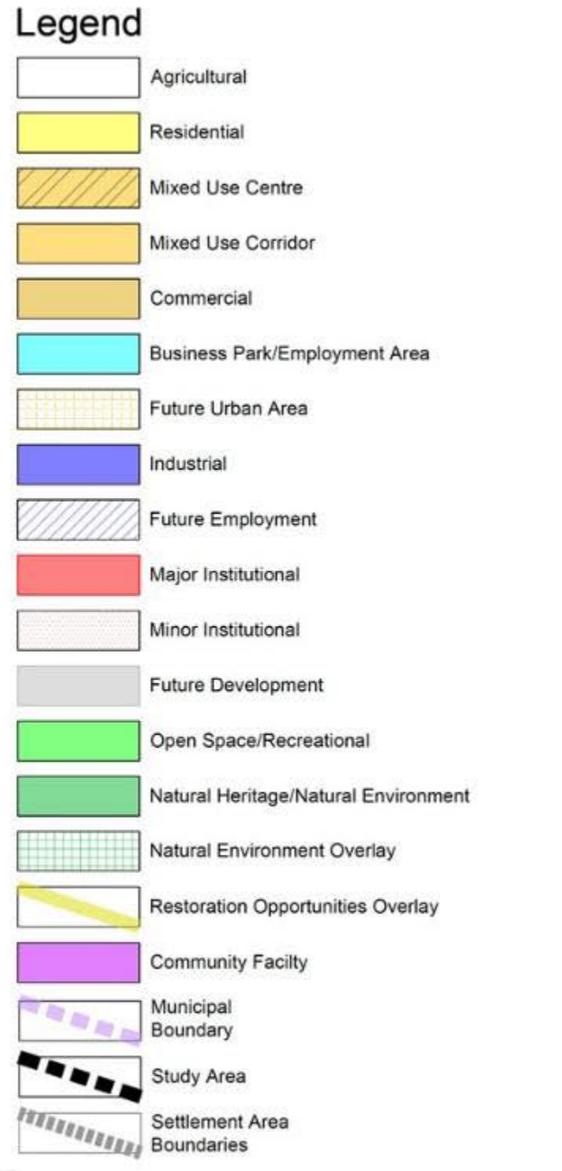
3.4.2.4.1 Maidstone Agricultural Industry

The ADM Agri-Industries Ltd. grain elevator, located at 11632 Talbot Road (N0R 1K0), within the Maidstone Hamlet Settlement Area plays a crucial role in grain storage and processing operations. It is vital to local farmers and the agricultural community. Maintaining safe and efficient access to the facility for farm machinery and heavy vehicle turning movements, as well as adequate commercial vehicle turning movement storage is critical.

[6] Town of Tecumseh Official Plan Council Adopted February 2021.

Official Plan Designations





County of Essex Tecumseh

County of Essex County Road 46 and
Town of Tecumseh Concession Roads 8 and 9
Environmental Assessment Study NTS

Sources:
1. Town of Tecumseh Official Plan, adopted February 2021.
2. City of Windsor Official Plan Volume II Schedule D: Land Use January 15, 2024.
3. Town of Lakeshore Schedule "C.1" Land Use (Rural Area), 2012

Figure 10: Town of Tecumseh, City of Windsor and Town of Lakeshore Official Plans

3.4.2.5 City of Windsor Official Plan

The City of Windsor Official Plan provides direction for the physical development of the municipality over a 20-year period while taking into consideration important social, economic and environmental matters.

The City of Windsor's Sandwich South Planning District is located to the north of County Road 46, 8 and Concession Road 9 Study Area. This Planning District is bounded by the Windsor International Airport to the north, Town of Tecumseh to the east and south and to the west by the Devonshire Planning District boundary. Refer to **Figure 10**.

The 2024 Schedule D Land Use Plan identifies lands to the north of Highway 401 as a large tract of Employment Lands with a site identified for a Major Institutional use along Concession Road 8, in conjunction with Mixed Use designations. To the north a large area has been identified for a Future Urban Area.

Schedule F: Roads and Bikeways provides the roadway classifications for the City of Windsor. The Class I Arterials, shall have a minimum right of way width of 46 m, include:

- Lauzon Parkway
- County Road 42
- Baseline Road
- Concession Road 9
- County Road 17

Class II Collector Roads, shall have a minimum right of way width of 26 m, include:

- Concession Road 7
- Concession Road 8

3.4.2.6 Sandwich South Secondary Planning Area

The Sandwich South Planning Area is 2,530 hectares of land at the eastern limit of Windsor. The area is generally bound by Highway 401 to the south, Concession Road 7 to the west, the EC Row Expressway to the north and the midpoint of County Road 17 and Concession Road 11 to the east.

The lands are largely used for agricultural purposes at the present time, with the exception of the airport in the northwest quadrant. Also within the planning area are a small number of existing small-scale industrial and service commercial uses along County Road 42 and Baseline Road. Small pockets of residential subdivision development also exist within the planning area.

A Boundary Adjustment Agreement was approved for Windsor for the Annexation of the Sandwich South Planning Area, initiating the process for its eventual designation within the City of Windsor Official Plan by the Minister of Municipal Affairs and Housing on December 2002 between the Town of Tecumseh, County of Essex and City of Windsor Plan. The lands were needed by the City of Windsor to accommodate future growth, particularly employment growth as there was a shortage of industrial lands for potential larger scale manufacturing industries at that time.[7]

A Master Planning Study was initiated for the Sandwich South Lands in 2004, which resulted in Official Plan Amendment 60 ("OPA 60"). The study was completed in 2006 and approved by the Ontario Municipal Board ("the Board") in 2007. OPA 60 established the overall land area requirements and general location of various land use categories to accommodate future growth.

3.4.2.6.1 County Road 42 Secondary Plan

Within the Sandwich South Planning District is the County Road 42 Secondary Plan. This Secondary Plan includes the north half of Lot 15, Concessions 8, 9 and 10 to the south; County Road 42 and the Windsor International Airport to the north; Concession Road 8 to the west; County Road 17 to the east. The land uses identified include medium and low-density residential areas with Business Parks along County Roads 42 and 17 and a Regional Institutional Centre Node, for a Regional Hospital in the southeast quadrant of County Road 42 and Concession Road 9.

3.4.2.6.2 East Pelton Planning Area

Within the Sandwich South Planning District is the East Pelton Planning Area. This planning area is located adjacent to the Study Area to the northwest. It is generally bounded by the Concession Road 7 to the west, Baseline Road residential area to the north, Concession Road 8 to the east and Highway 401 to the south. The major land uses include residential areas in the north half and mix use and commercial in the south half with a major institution designation along Concession Road 8. Currently the Provincial South West Detention Centre is located on the major institutional land use designation. The Croatian Soccer Fields are located on the private recreational use at Highway 401 and Concession Road 8.

3.4.2.7 Municipality of Lakeshore Official Plan

The Municipality of Lakeshore is located at the eastern limit of the County Road 46 and Concession Roads 8 and 9 Study Area. The Municipality of Lakeshore Official Plan (the Plan) provides the framework of future growth for the municipality.

The Land Use Schedule "C.1" Land Use identifies the land uses at the intersection County Road 46 east of County Road 19 as Service Commercial. This designation allows commercial uses serving the travelling public, destination oriented commercial uses, and/or space extensive commercial. The larger land use designation is Agricultural adjacent to the county roads. Refer to **Figure 10**.

Schedule "D.1" provides the Road Classification for the Rural Area of the Municipality. County Road 19 is identified as a Rural Secondary Road, with right of way width varying from 24 to 45 m and County Road 46 is a Rural Regional Road, with right of way width varying from 24 to 45 m.

[7] Amendment No. 60 To the Official Plan City of Windsor, March 2007

3.4.2.8 Provincial Planning Statements

The County of Essex Official Plan and subsequent planning studies have been carried out in accordance with the PPS at the time of their creation. Within this Report, **Section 3.4.2** Proposed/Approved Development outlines the undertaking's compliance with the "*A Place to Grow: Growth Plan for the Greater Golden Horseshoe* (2020)".

3.4.2.9 Residential Subdivision

Development of a residential subdivision is currently being planned on a 20.7-hectare parcel of land located at the northeast corner of the intersection of North Talbot Road and Concession Road 8. This residential subdivision which will consist of 220 units, including 132 single-unit dwellings, 6 semi-detached dwellings, and 19 townhouse dwellings, along with designated buffer areas, passive open spaces, multi-purpose pathways, stormwater corridors, and a stormwater pond (**Figure 11**).

The Town's land use designation for the proposed lands is currently Residential/Future Development (**Figure 10**). For more information regarding the Residential and Future Development land use designation please refer to **Section 3.4.2.3**.

Figure 11: Draft Plan of Residential Subdivision

3.4.2.10 Industrial Subdivision

An industrial subdivision is currently being constructed on approximately 29 hectares of greenfield site in the northeast corner of the Provincial Road (County Road 46) and Concession Road 8 intersection. The current stage of the development proposal is conceptual, intending to divide the area into nine distinct leasable lots. Among this, approximately 19.4 hectares are designated for industrial lots, 4.9 hectares will remain as a natural area, 2.1 hectares will serve as a stormwater management facility, and the remaining 2.6 hectares will accommodate roads and buffer zones. The development will unfold in two phases. By 2022, approximately 10.5 hectares will undergo development and occupation (partial build-out), with the remaining 8.9 hectares slated for development and occupation by 2027 (full build-out). The site plan (**Figure 12**) includes two interconnected internal roads. One road will run north-south, connecting to County Road 46, spanning roughly 185 m. The other will run east-west, linking to Concession Road 8, covering approximately 700 m. The eastern terminus of this east-west road will culminate in a cul-de-sac. The two proposed intersections along Concession Road 8 and Provincial Road will operate without traffic signals.

The Town's land use designation for the site is Business Park (**Figure 12**). For more information regarding the Business Park land use designation please refer to **Section 3.4.2.3**.

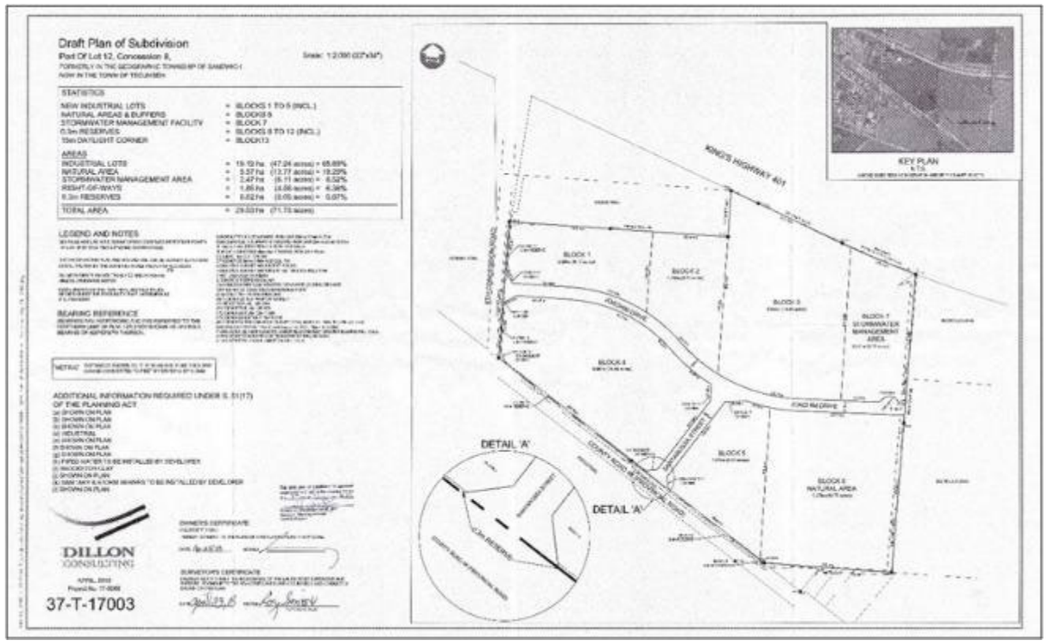


Figure 12: Plan of Industrial Subdivision

3.4.3 Utilities

An existing Natural Gas Liquids (NGL) pipeline owned and operated by Plains Midstream Canada ULC crosses County Road 46 from southwest to northeast, see **Figure 13**. The Plains Midstream Pipeline Memorandum is in **Appendix I**.

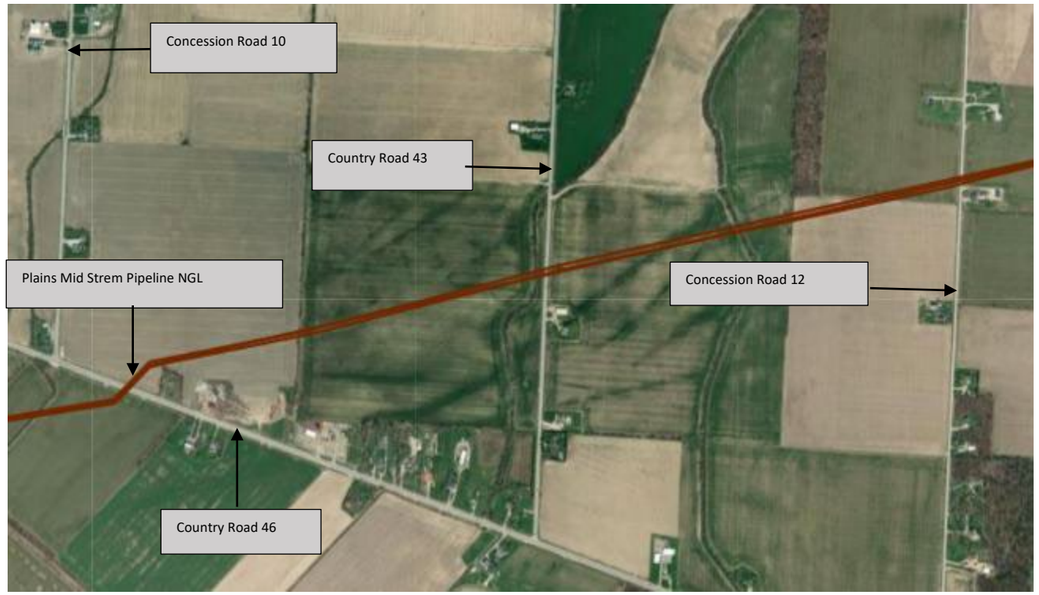


Figure 13: Plains Midstream Canada Pipeline Crossing Country Road 46

Construction operations such as excavation, and raising the road grade, may alter the depth of cover over the pipeline, which could compromise its structural integrity. Additionally, heavy construction equipment operating near or over the pipeline could introduce dynamic loads or vibrations. There may also be conflicts between the pipeline and proposed infrastructure and/or underground utilities. which will need to be evaluated in the design phase. Referring to the technical guideline of Plains Midstream Canada, all work must ensure 1.2 m minimum cover and 3 m maximum cover for paved roads.

Any ground disturbance within 30 m of the pipeline requires Coordination with Plains Midstream Canada.

The pipeline will remain in its existing alignment and be protected in place. This approach will maintain or improve the depth of cover over the pipeline in accordance with Plains Midstream's technical guidelines, which specify that the minimum depth of cover shall be 1.2 m from the top of the pipeline to the final road grade, and the maximum allowable depth of cover shall not exceed 3 m. Additionally, no parking or storage of materials or vehicles is permitted within 3 m of the pipeline's centerline. These requirements will be incorporated into both the design cross sections and construction staging plans to ensure full compliance.

3.4.4 Noise

A noise assessment evaluated existing and projected noise levels. The assessment determined the potential increases in noise levels associated with the proposed transportation improvements and determined if noise mitigation measures are required. Noise from Highway 401 can be heard on County Road 46 and Concession Roads 8 and 9. The assessment looked at noise levels from Highway 401 and if they exceeded the noise levels generated by traffic on County Road 46 and Concession Roads 8 and 9.

Noise contours were developed at 5 dBA intervals, refer to **Figure 14** and **Figure 15**, reflecting changes in topography and traffic volumes without mitigation measures for proposed conditions in 2051. Utilizing the MTO Environmental Guide for road projects (see **Table 2**), the following mitigation effort was considered for the noise assessment along the County Road 46 corridor. The assessment considers mitigation where there is a change equal to or greater than 5 dBA due to proposed improvements, or the projected noise levels are greater than or equal to 65 dBA.

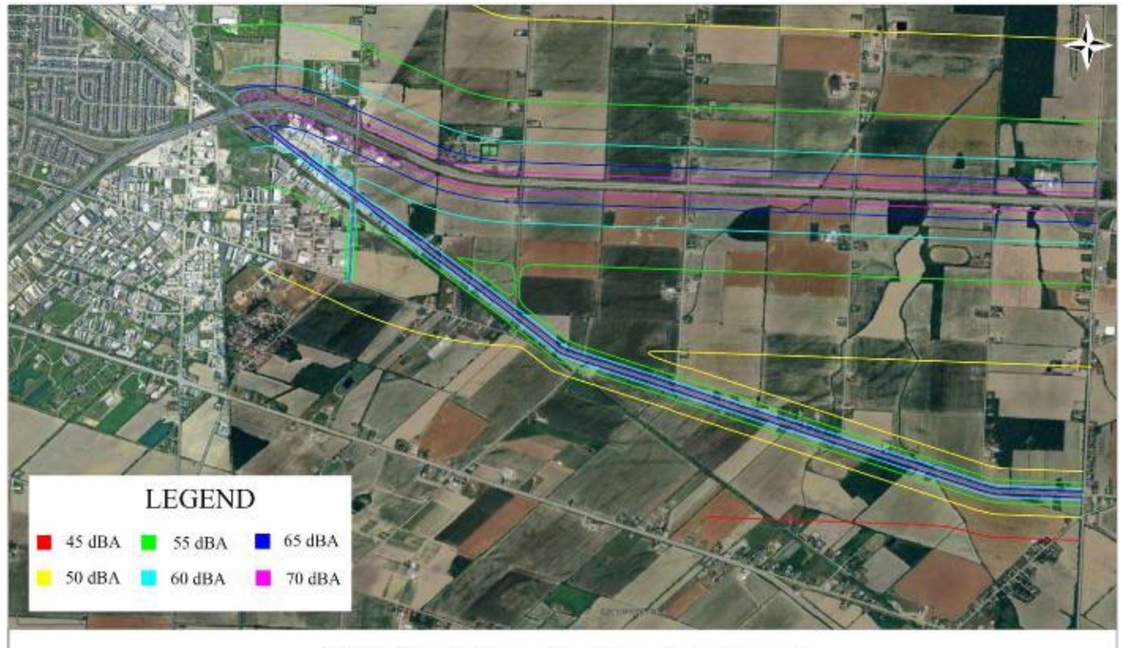
Table 2: Mitigation Abatement Warrant for Consideration Following MTO Environmental Guide for Noise

Change in Noise Level due to Proposed Improvements / Projected Future Build Noise Levels	Mitigation Effort Required
< 5 dB change & < 65 dBA	• None
≥ 5 dB change OR ≥ 65 dBA	• Investigate noise control measures within MTO right-of-way. • Introduce noise control measures within right-of-way and mitigate to a Future No-Build noise levels if technically, economically, and administratively feasible. • Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation averaged over first row receptors (see Appendix A for definition of first row receptors)

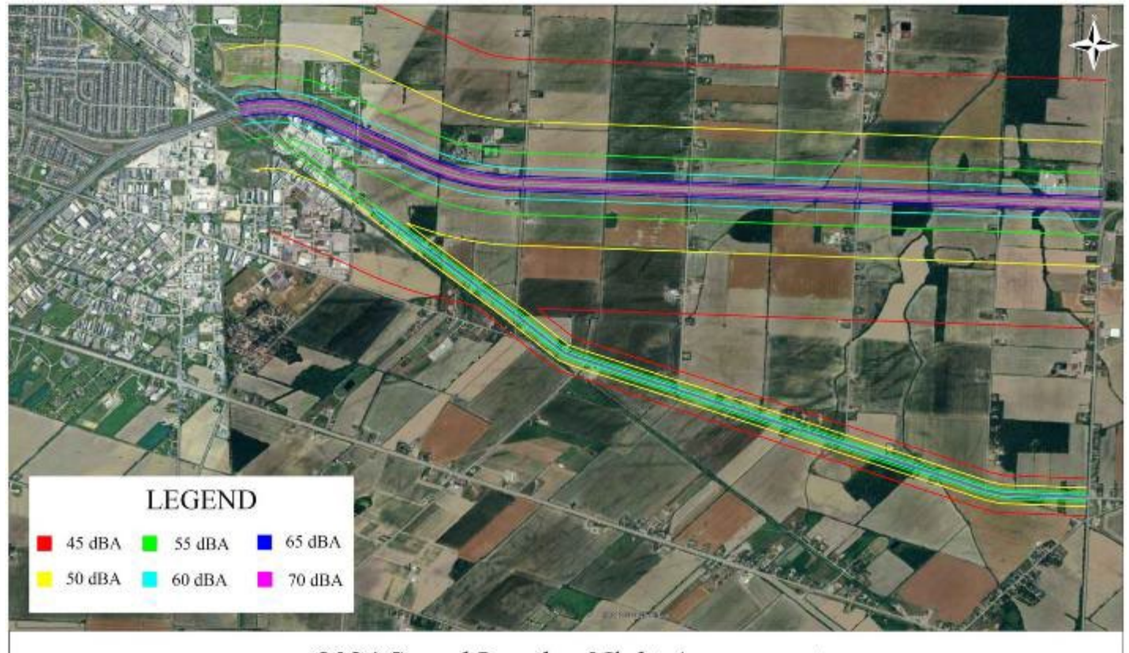
Based on the noise contours generated from STAMSON 5.04, the following properties are projected to experience a 65 dBA sound level in the OLA:

- 8639 County Road 46
- 8559 County Road 46
- 6703 County Road 46
- 5072 County Road 46
- 3955 County Road 46

It is not considered technically feasible to implement noise barriers due to driveway openings, which would make the barrier ineffective, and therefore noise barriers are not recommended for these 5 properties. The Noise Assessment Report is in **Appendix J**.

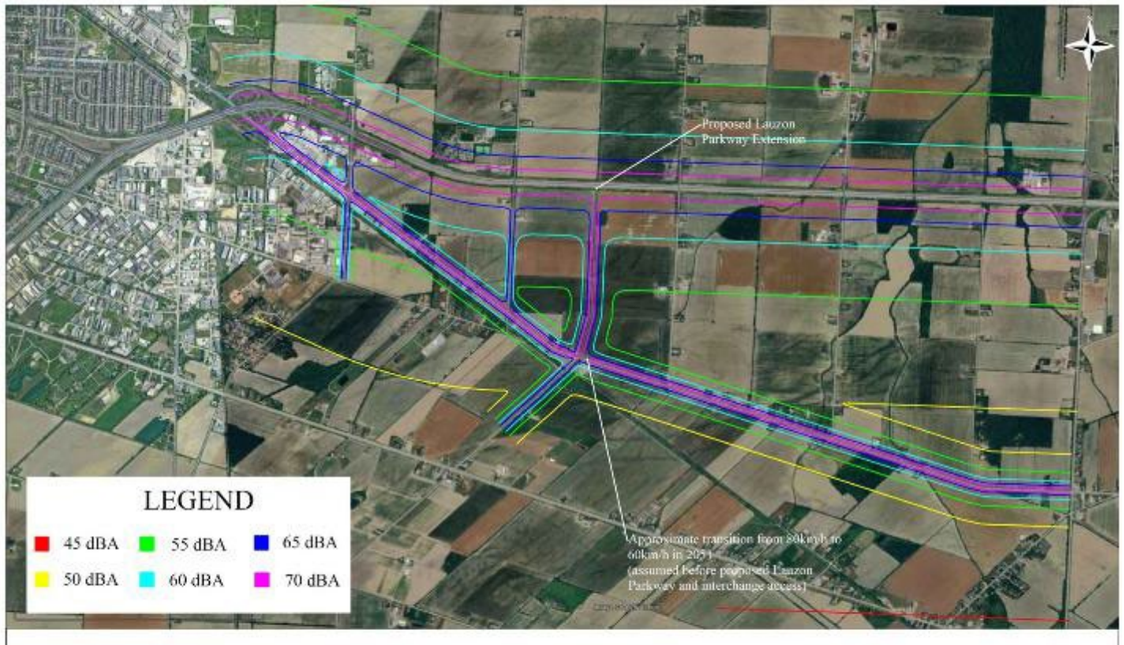


2024 Sound Levels - Day Assessment
County of Essex County Road 46 EA

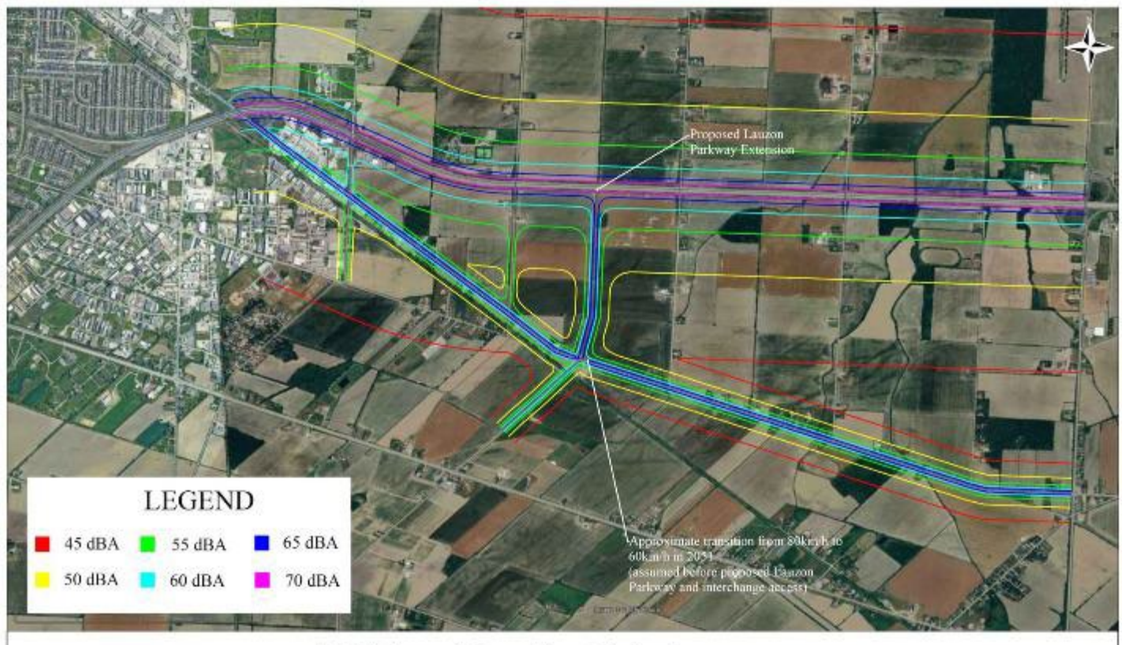


2024 Sound Levels - Night Assessment
County of Essex County Road 46 EA

Figure 14: 2024 Sound Levels – Day and Night Assessment



2051 Sound Levels - Day Assessment
County of Essex County Road 46 EA



2051 Sound Levels - Night Assessment
County of Essex County Road 46 EA

Figure 15: 2051 Sound Levels - Day and Night Assessment

4.0 EVALUATION OF ALTERNATIVES

The analysis and evaluation of alternatives is a central requirement of the MCEA process. Alternative Planning Solutions were generated to define alternatives to the project. Following the selection of the preferred Planning Solution, Preliminary Design Alternatives were developed. Alternatives that were not viable, had significant impacts, or had substantially poorer safety or traffic performance compared with other alternatives, were not considered reasonable alternatives. The Analysis and Evaluation Report is in **Appendix K**.

4.1 Alternatives to the Undertaking – Planning Alternatives

The *Environmental Assessment Act* requires that all reasonable and feasible Planning Solutions be identified and evaluated at the start of the Study. Planning Solutions represent alternative ways or methods of addressing the Problem or Opportunity Statement (**Section 1.2.1**) specific to this study. These alternatives consider the overall needs of the Study Area and identify alternative approaches to address the need for improvements.

The Alternative Planning Solutions for this Study are summarized as follows:

1. Do Nothing - The Do Nothing must be considered as mandated by the MCEA. It represents a baseline from which other approaches can be compared. This alternative would maintain the existing road network and would not construct a new arterial road or interchange.
2. Transportation Demand Management (TDM) and Transportation Systems Management (TSM) - TDM would reduce vehicular demand and encourage alternative work hours, work at home, more active modes of transportation (cycling and walking) and the use of transit. TSM provides a more efficient use of existing infrastructure such as traffic signal optimization to limit or avoid the need for expansion.
3. Active Transportation - This alternative would maintain the existing road network with the addition of bicycle lanes and multi use pathways within the ROW.
4. Roadway Improvements - including:
    a. County Road 46 improvements, including widening, turning lanes and intersection improvements, with connection to the future Lauzon Parkway Extension.
    b. Widen Concession Roads 8 and 9 from County Road 46 to the City of Windsor boundary.

The evaluation of Alternative Planning Solutions selects the most reasonable alternatives that address the Problem and Opportunity Statement. A preliminary assessment of each Alternative Planning Solution is presented in **Table 3.** This assessment was provided for public review and comment.

Based on the preliminary review of Alternative Planning Solutions, Alternative 4 Roadway Improvements is recommended to be carried forward, consistent with the EWRTMP. In addition, TDM, TSM and Active Transportation do not constitute reasonable standalone solutions however together they will be considered as a complimentary solution and may form a part of the overall Recommended Plan for transportation improvements.

4.2 Evaluation Methodology

This section documents the evaluation approach used in this study for selecting the TPAs for cross-sections, alignments and intersections.

4.2.1 Qualitative Evaluation

The qualitative evaluation methodology is used where there are few alternatives and a low number of competing criteria among the alternatives being compared. The qualitative evaluation method involves comparing impacts in narrative terms, without the explicit weighting of criteria or producing numerical ratings. This method uses “professional judgment” to compare alternatives. A qualitative approach was used for the evaluation of the Cross-Section Alternatives and Intersection Alternatives.

Six categories or factor groups were considered for each evaluation when applicable. Within each of these factor groups are sub-criteria, described narratively and ranked with symbols, which define the measure and the relative differences of magnitude of impact or benefit. The factor groups are:

- Transportation
- Natural Environment
- Cultural Environment
- Socio-Economic Environment
- Land Use and Property
- Cost

Where there were no differences between the alternatives in a factor group, then the group was not used to evaluate the alternatives.

Table 3: Planning Alternative Evaluation

Screening Criteria	Alternative 1: Do Nothing	Alternative 2: TDM/TSM	Alternative 3: Active Transportation	Alternative 4: Roadway Improvements
Transportation				
Does the approach satisfy forecast traffic demand?	Does not address forecast demand.	May reduce vehicular demand by mode shift or work at home but will not eliminate need for new or improved infrastructure.	Improves local road access but does not eliminate the need for new or improved infrastructure.	Meets forecast demand.
Does the approach improve safety?	Collisions frequency is expected to increase with increasing congestion.	It would mitigate some of the concerns resulting from the Do Nothing alternative. Will not address vehicular safety concerns but may improve pedestrian and cyclist safety.	It would mitigate some of the concerns.	Reduces collision potential within the overall Study Area by improving intersection control, reducing traffic congestion, and managing speeds.
Does the approach address all modes?	No change.	Addresses active modes of transportation.	Addresses active modes of transportation.	Accommodates all modes of transportation.
Environmental				
What is the magnitude of environmental impacts (natural, social and cultural environment)?	No impacts.	No or low impacts. Low impacts may be associated with active transportation projects/ improvements (i.e. sidewalks, bike lanes).	No or low impacts. Low impacts may be associated with active transportation projects/ improvements (i.e. sidewalks, bike lanes).	Low to medium environmental effect possible with new corridor. Magnitude of effects may be mitigated.
Land Use/Property				
Does the approach support the Official Plan and EWRTMP?	No.	Supports objectives of Official Plan to encourage the development of active transportation facilities within the Municipality.	No. Does not address access issues of the Official Plan or the recommendations of the EWRTMP.	Supports the objectives of the Official Plan and the recommendations of the EWRTMP.
Preliminary Recommendation to Carry Forward?	**X** Not recommended to be carried forward.	✓ Carried forward as a complimentary strategy (not a standalone solution).	✓ Carried forward as a complimentary strategy (not a standalone solution).	✓ Carried forward.

✓ Recommended Planning Solutions

4.3 County Road 46 Evaluation Sections

To accommodate changing site-specific ROW constraints throughout the length of the Study Area, the corridor was divided into three (3) different sections. The advantages of dividing the Study Area include:

- Allows the unique transportation and environmental constraints within each section to influence the evaluation; and
- Permits the evaluation to be divided into mutually exclusive areas.

Each section is described as follows:

Section 1 (Highway 401 to Concession Road 8). Beginning at the Highway 401 Interchange (western end of the Study Area), this section extends easterly from the Town of Tecumseh limits to Concession Road 8. This area is characterized by commercial and industrial land uses.

Section 2 (Concession Road 8 to east of the future Lauzon Parkway Intersection). This section is characterized by both commercial and industrial land uses and agricultural / rural land uses with scattered residences along County Road 46.

Section 3 (Future Lauzon Parkway Intersection to County Road 19 (Manning Road)). This section is characterized by agricultural land uses with scattered residences and farms along County Road 46.

The evaluation sections are illustrated in **Figure 16.**

4.4 County Road 46 Alignment Evaluation

The following section describes the alignment alternatives for each of the Evaluation Sections. All the alternatives carried forward to the detailed evaluation were considered by the Study Team to be reasonable alternatives to the Planning Solution and are described in **Table 4.** These include Alignment Alternatives 1 to 3 that were presented to the public at PCC No. 2. A meandering alignment was developed to avoid existing constraints where possible.

Table 4: County Road 46 Alignment Alternatives

Alternative	Description
Section 1	
Alternative 1 - 1	40 m ROW Widen on-centre
Alternative 1 - 2	40 m ROW Widen to the South
Alternative 1 - 3	40 m ROW Widen to the North
Section 2	
Alternative 2 - 1	40 m ROW Widen on-centre
Alternative 2 - 2	40 m ROW Widen to the South
Alternative 2 - 3	40 m ROW Widen to the North
Alternative 2 - 4	40 m ROW Meandering
Section 3	
Alternative 3 - 1	40 m ROW Widen on-centre
Alternative 3 - 2	40 m ROW Widen to the South
Alternative 3 - 3	40 m ROW Widen to the North
Alternative 3 - 4	40 m ROW Meandering

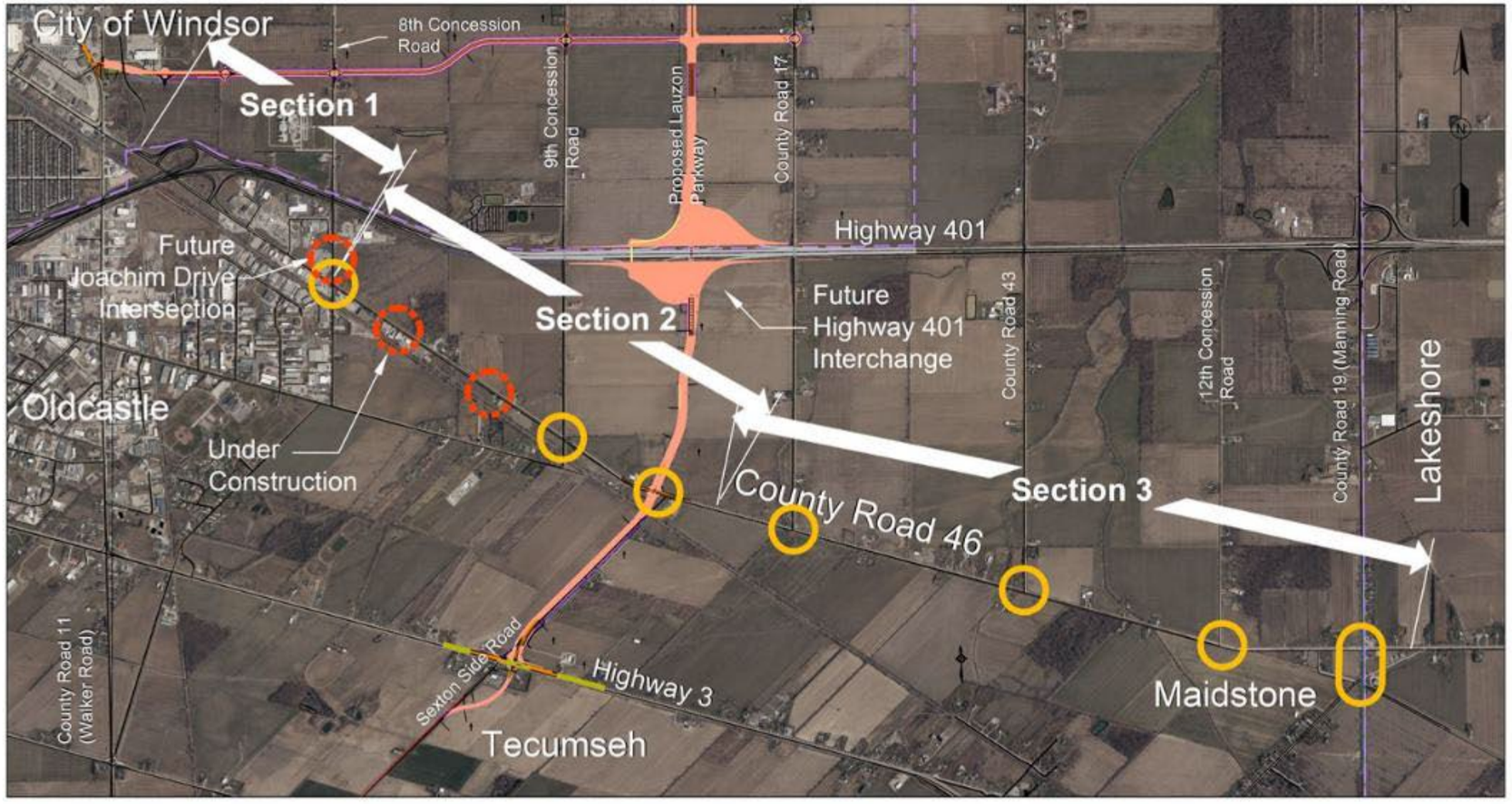


Figure 16: Evaluation Sections

4.4.1 County Road 46 Section 1 (Highway 401 to Concession Road 8) Alignment Evaluation

County Road 46 within Section 1 is approximately 670 m long. The topography is flat throughout. This section has industrial development on both sides of the roadway and primarily services large transport vehicles.

4.4.1.1 Section 1 Alternatives

Three (3) Section 1 Alignment Alternatives were carried forward for evaluation, each alternative has a 40 m ROW.

Alternative 1-1: This alternative widens County Road 46 on the existing centreline, resulting in an additional seven (7) m of land required on both sides of the existing ROW for the road widening. This results in impacts to both sides of the roadway. Moderate impacts include loss of frontage with modifications to existing driveways and parking lots and visual intrusion to existing residence. Refer to **Figure 17.**

Alternative 1-2: Alternative 1-2 widens the roadway to the south, resulting in an additional 14 m on the south side to accommodate the 40 m ROW. This results in the greatest level of impact because most of the existing development on the south side is closer to the roadway than on the north side. Examples of major impacts include the buyout of seven (7) industrial buildings and buyout of one (1) resident. Refer to **Figure 18.**

Alternative 1-3: Alternative 1-3 widens the roadway to the north, resulting in an additional 14 m on the north side to accommodate the 40 m ROW. This results in a moderate level of impact because most of the existing development on the north side is further away from the roadway than on the south side. Parking and entrances will be impacted along the north side. Refer to **Figure 19**.

4.4.1.2 Section 1 Alignment Evaluation

The evaluation of the County Road 46 alignment alternatives is shown in **Table 5**. Alternative 1-1 has the least number of “Poor” ratings and the greatest number of ‘Good’ ratings when compared to the other alternatives.

4.4.1.3 Section 1 Preliminary Alignment Recommendation

The preliminary recommendation is to widen around the centreline (Alternative 1-1) since this is a relatively short section of roadway and it avoids all the major constraints. The County Road 46 TPA is shown on **Figure** 20**.**

Figure 17: County Road 46 Section 1 Alignment Alternative 1-1

Figure 18: County Road 46 Section 1 Alignment Alternative 1-2

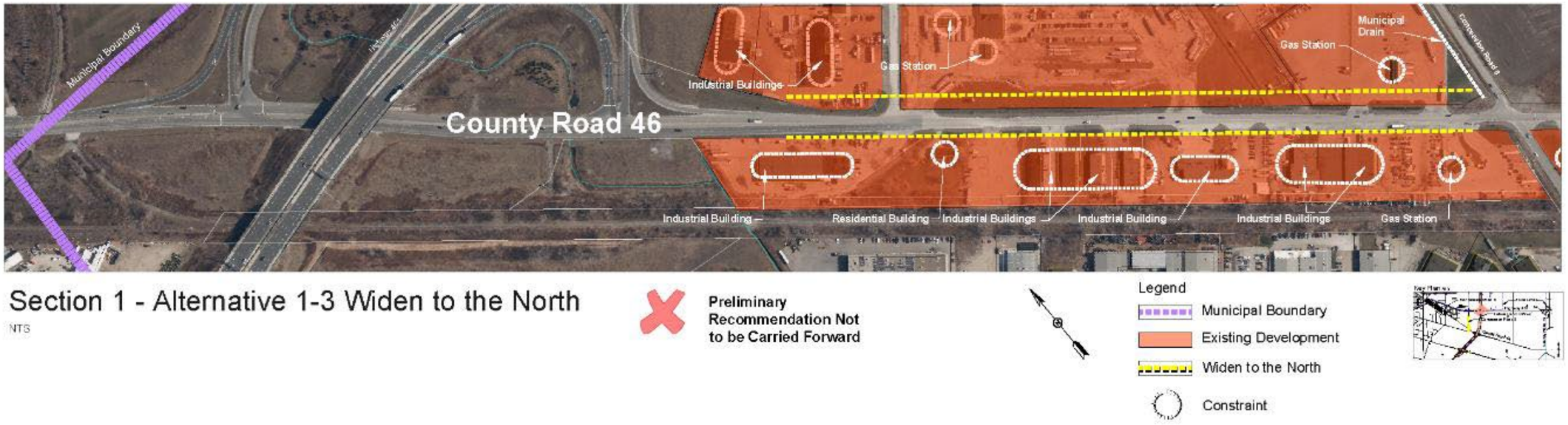


Figure 19: County Road 46 Section 1 Alignment Alternative 1-3

Table 5: County Road 46 Section 1 Alignment Evaluation

Evaluation Criteria	Alternative 1-1 - Widen On-Centre	Alternative 1-2 - Widen to the South	Alternative 1-3 Widen to the North
Active Transportation	— All equal.	— All equal	— All equal
Property Impacts: Loss of access due to entrance changes	— Minor reduction in turning movement ability	✓ No change	× Major reduction in turning movement ability
Employment Area Lands Required	— All equal.	— All equal	— All equal
Residential Visual Intrusion (widening within 100 m)	× 1	✓ 0	✓ 0
Residencial Buyout	✓ 0	× 1	✓ 0
Industrial Buildings Buyouts	✓ 0	× 7	✓ 0
Utility Corridor Relocation	— Minor relocation	✓ No Relocation	× Major relocation
Cost	— All equal	— All equal	— All equal
Recommendation:	✓ **Recommended to be Carried Forward**	× Not recommended to be Carried Forward due to the impact to industrial buildings.	× Not recommended to be Carried Forward due to property impacts.

Legend

Good ✓ Fair — Poor ×

Figure 20: Section 1 Alignment Technically Preferred Alternative

4.4.2 County Road 46 Section 2 (Concession Road 8 to east of the future Lauzon Parkway Intersection) Alignment Evaluation

County Road 46 within the Section 2 is approximately 2.1 km long. The topography is flat throughout. This section of County Road 46 has a mix of land uses, including residential, industrial, commercial and agricultural. Lands to the north are planned as future Business Park/Employment Area in the Town of Tecumseh Official Plan.

4.4.2.1 Section 2 Alignment Alternatives

This section provides a brief description of the County Road 46 Section 2 Alignment Alternatives. Four (4) alignment alternatives were carried forward for evaluation, each alternative has a 40 m ROW.

Alternative 2-1: This alternative widens County Road 46 on the existing centreline, requiring an additional seven (7) m of land on both sides of the existing ROW for the road widening. This results in impacts to both sides of the roadway. Moderate impacts include loss of frontage with modifications to existing driveways and parking lots and visual intrusion to existing residences. Eleven (11) residents will experience increased visual intrusion and lose of frontage. Refer to **Figure 21.**

Alternative 2-2: Alternative 2-2 widens the roadway to the south, resulting in an additional 14 m on the south side to accommodate the 40 m ROW. This results in the greatest level of impact due to having most of the existing development on the south side closer to the roadway than on the north side. Examples of major impacts include the buyout of four (4) industrial buildings and buyout of one (1) resident. In addition, there will be the need to relocate the overhead utilities to the new edge of ROW. Refer to **Figure 22.**

Alternative 2-3: Alternative 2-3 widens the roadway to the north, resulting in an additional 14 m on the north side to accommodate the 40 m ROW. This results in a high level of impact to the existing residences, requiring five (5) buyouts and two (2) with increased visual intrusion. Parking and entrances will be impacted along the north side. No relocation requirements for the overhead utilities along the south side. Refer to **Figure 23**.

Alternative 2-4: The County Road 46 Alignment Alternative 2-4 Meandering is widened on-centre or to the north due to the constraints and to the south approaching the future Lauzon Parkway intersection, refer to **Figure 24**. This alternative requires the least amount of Employment Lands and no residential or industrial buyouts. There will be seven (7) residences impacted by greater visual intrusion due to the ROW widening and a minor relocation of the overhead utilities.

4.4.2.2 Section 2 Alignment Evaluation

The evaluation of the County Road 46 alignment alternatives is shown in **Table 6**. Alternative 2-4 Meandering alignment is the TPA for Section 2 and recommended to be carried forward. Alternative 2-4 has the least number of “Poor” ratings and the greatest number of “Good” ratings when compared to the other alternatives.

4.4.2.3 Section 2 Preliminary Alignment Recommendation

The County Road 46 Section 2 TPA is shown on **Figure 25.** The TPA contains roadway sections where the ROW transitions between widening on-centre and to the north of the existing ROW. The subtle shifts in the alignment avoid most constraints. There is one (1) residential buyout and ten (10) residences with greater visual intrusion. The overhead utilities will require some relocation along the south side of the ROW.

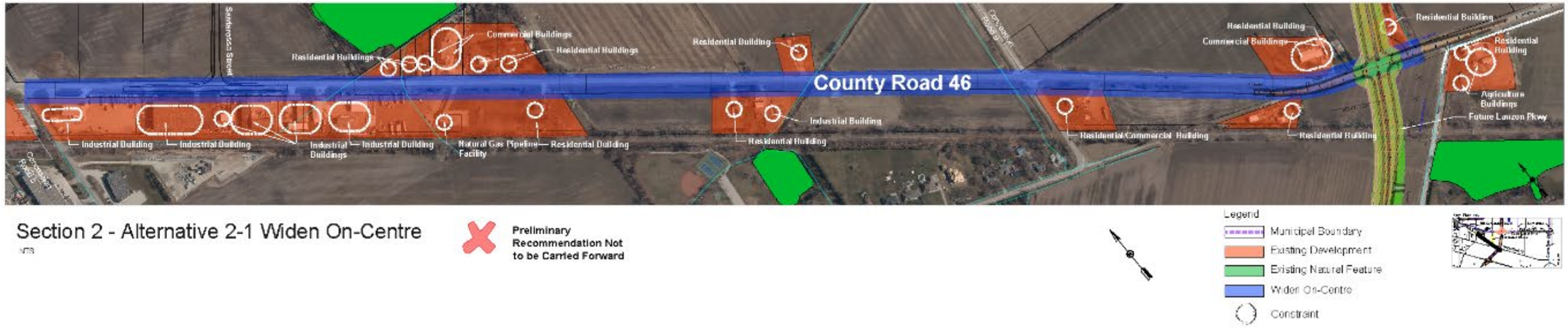


Figure 21: County Road 46 Section 2 Alignment Alternative 2-1

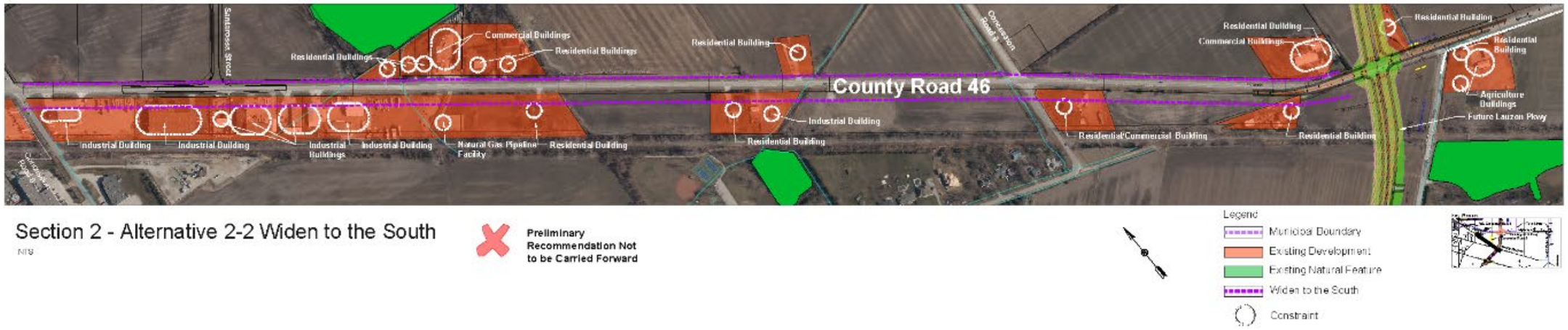


Figure 22: County Road 46 Section 2 Alignment Alternative 2-2

Figure 23: County Road 46 Section 2 Alignment Alternative 2-3

Figure 24: County Road 46 Section 2 Alignment Alternative 2-4

Table 6: County Road 46 Section 2 Preliminary Alignment Evaluation

Evaluation Criteria	Alternative 2-1 - Widen On-Centre	Alternative 2-2 - Widen to the South	Alternative 2-3 Widen to the North	Alternative 2-4 - Meandering
Active Transportation	— All equal	— All equal	— All equal	— All equal
Future Development Lands Required.	— 0.03 ha	✓ 0 ha	— 0.3 ha	— 0.03 ha
Employment Area Lands Required	— 2 ha	× 2.6 ha	— 1.5 ha	✓ 1.2 ha
Agricultural Land Required	— 0.7 ha	× 0.8 ha	✓ 0.5 ha	— 0.6 ha
Residential Visual Intrusion (widening within 100 m)	× 11	— 3	✓ 2	× 7
Residencial Buyout	✓ 0	— 1	× 5	✓ 0
Industrial Buildings Buyouts	✓ 0	× 4	✓ 0	✓ 0
Utility Corridor Relocation	— Relocation	× Major relocation	✓ No relocation	— Relocation
Cost	— All equal	— All equal	— All equal	— All equal
Recommendation:	× Not Carried Forward	× Not Carried Forward	× Not Carried Forward	✓ **Carried Forward**

Legend

Good ✓ Fair — Poor ×

Figure 25: Section 2 Alignment Technically Preferred Alternative

4.4.3 County Road 46 Section 3 (Future Lauzon Parkway Intersection to County Road 19 (Manning Road)) Alignment Evaluation

County Road 46 within the Section 3 is approximately 4.3 km long. The topography is flat throughout. This section of County Road 46 is primarily agricultural with residential and commercial buildings located along both sides. There is one woodlot located midway on the south side and a municipal drain also on the south side in the western half.

4.4.3.1 Section 3 Alignment Alternatives

This section provides a brief description of the County Road 46 Section 3 Alignment Alternatives. Four (4) alignment alternatives were carried forward for evaluation, each alternative has a 40 m ROW.

Alternative 3-1: This alternative widens County Road 46 on the existing centreline, requiring an additional seven (7) m of land on both sides of the existing ROW for the road widening. This results in impacts to both sides of the roadway. Moderate impacts include loss of frontage with modifications to existing driveways and buyouts of two (2) existing residences. Twenty-six (26) residents will experience increased visual intrusion and lose of frontage. This alternative takes the least amount of agricultural land. Refer to **Figure 26.**

Alternative 3-2: Alternative 3-2 widens the roadway to the south, resulting in an additional 14 m on the south side to accommodate the 40 m ROW. Examples of moderate impacts include the buyout of three (3) residential buildings and three (3) residences with increased visual intrusion. In addition, there will be the need to relocate a municipal drain southerly to the new edge of ROW. There is no requirement to relocate the overhead utility along the north edge of the right-of way. Refer to **Figure 27.**

Alternative 3-3: Alternative 3-3 widens the roadway to the north, resulting in an additional 14 m on the north side to accommodate the 40 m ROW. This results in a high level of impact to the existing residences, requiring eleven (11) buyouts and eight (8) with increased visual intrusion. Entrances will be impacted along the north side. No relocation requirements for the municipal along the south side. This alternative impacts the greatest amount of agricultural land. Refer to **Figure 28.**

Alternative 3-4: The County Road 46 Alignment Alternative 3-4 Meandering avoids constraints on both sides of the roadway, refer to **Figure 29**. This alternative requires no residential buyouts. There will be seven (7) residences impacted by greater visual intrusion due to the ROW widening and a minor relocation of the overhead utilities and the municipal drain.

4.4.3.2 Section 3 Alignment Evaluation

The evaluation of the County Road 46 Section 3 Alignment Alternatives is shown in **Table 7**.
Alternative 3- 4 has the least number of “Poor” ratings and the greatest number of ‘Fair’ ratings when compared to the other alternatives.

4.4.3.3 Section 3 Preliminary Alignment Recommendation

The County Road 46 Section 3 TPA is Alternative 3-4 and is shown on **Figure 30**. The TPA contains roadway sections where the ROW transitions between widening on-centre, north or south of the existing ROW and has used subtle shifts in the alignment to avoid short curve radii and has reduced the number of curves required to avoid all constraints. The preferred alignment has two (2) residential buyouts. Other impacts include eight (8) residents with increased visual intrusion and relocation of the municipal drain to the south and minor relocation of the overhead utility lines to the north.

Figure 26: County Road 46 Section 3 Alignment Alternative 3-1

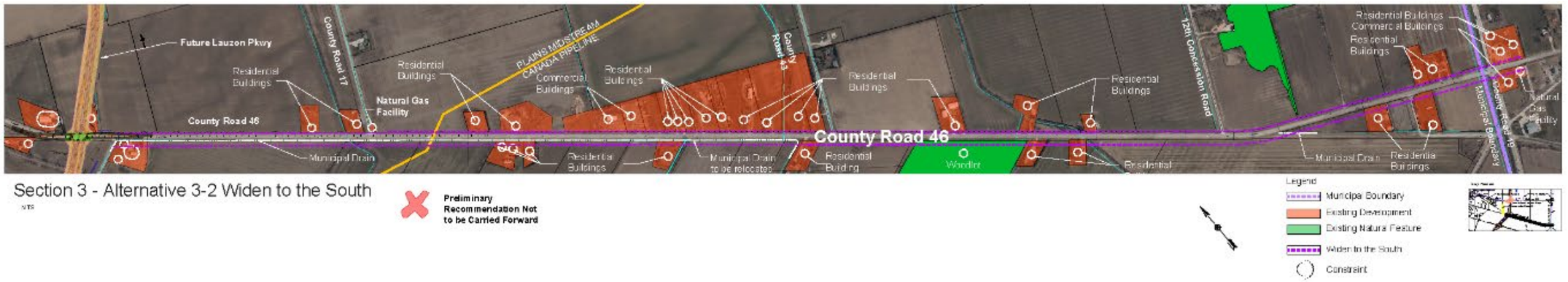


Figure 27: County Road 46 Section 3 Alignment Alternative 3-2

Figure 28: County Road 46 Section 3 Alignment Alternative 3-3

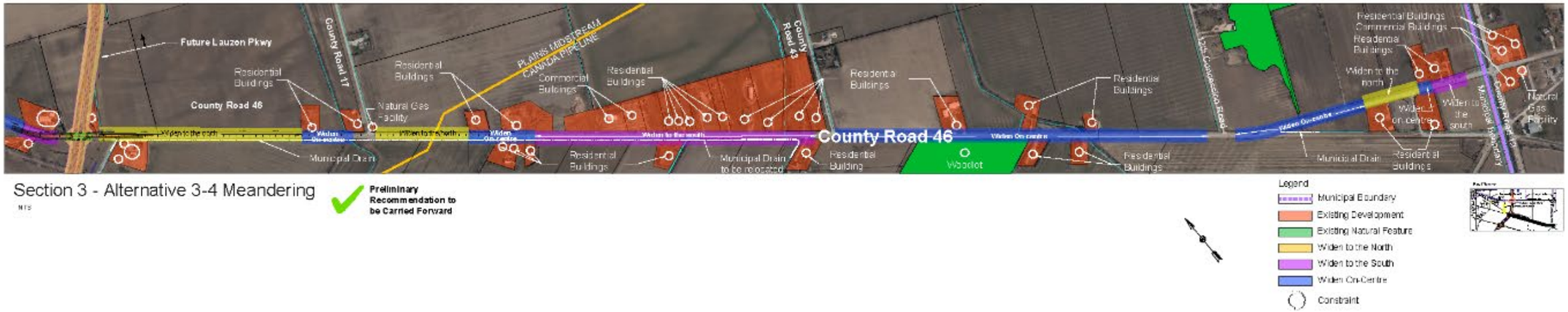


Figure 29: County Road 46 Section 3 Alignment Alternative 3-4

Table 7: County Road 46 Section 3 Preliminary Alignment Evaluation

Evaluation Criteria	Alternative 3-1 - Widen On-Centre	Alternative 3-2 - Widen to the South	Alternative 3-3 Widen to the North	Alternative 3-4 - Meandering
Active Transportation	— All equal	— All equal	— All equal	— All equal
Agricultural Land Required	✓ 1.7 ha	— 3.9 ha	✗ 5.5 ha	— 4.4 ha
Woodlot Impacted	— 0.3 ha	✗ 0.5 ha	✓ 0 ha	— 0.3 ha
Residential Visual Intrusion (widening within 100 m)	✗ 26	✓ 3	— 8	— 7
Residencial Buyout	— 2	— 3	✗ 11	✓ 0
Municipal Drain Relocation	✗ Relocation	✗ Relocation	✓ No relocation	— Partial Relocation
Overhead Utility Relocation	✗ Relocation	✓ No relocation	✗ Major relocation.	— Partial Relocation.
Cost	— All equal	— All equal	— All equal	— All equal
Recommendation:	✗ Not Carried Forward	✗ Not Carried Forward	✗ Not Carried Forward	✓ **Carried Forward**

Legend

Good ✓ Fair — Poor ✗

Figure 30: Section 3 Alignment Technically Preferred Alternative

4.5 Concession Roads 8 and 9 Alignment Evaluation

4.5.1 Concession Road 8 Alignment Evaluation

Concession Road 8 within the Study Area is approximately 436 m long, topography is flat throughout. This section provides a brief description of the Concession Road 8 alignment alternatives.

Four (4) Concession Road 8 alignment alternatives were carried forward for evaluation, each alternative has a 36 m ROW.

Alternative 1: This alternative widens Concession Road 8 on the existing centreline, requiring an additional eight (8) m of land on both sides of the existing ROW for the road widening. This results in impacts to both sides of the roadway. Moderate impacts include loss of frontage with modifications to existing driveways and relocation of an existing municipal drain. Refer to **Figure 31.**

Alternative 2: Alternative 2 widens the roadway to the west, resulting in an additional 16 m on the west side to accommodate the 36 m ROW. Examples of major impacts include the buyout of one (1) commercial building and one (1) industrial building. In addition, there will be the need to relocate a municipal drain westerly to the new edge of ROW. This alternative impacts the greatest amount of existing Employment lands on the west side. Refer to **Figure 32.**

Alternative 3: Alternative 3 widens the roadway to the east, resulting in an additional 16 m on the east side to accommodate the 36 m ROW. This results in a minor level of impact to the existing parking on the east side. No relocation requirements for the municipal drains along the east side. This alternative impacts the greatest amount of future Employment lands on the east side. Refer to **Figure 33.**

Alternative 4: The Concession Road 8 Alignment Alternative 4 Meandering avoids some constraints on both sides of the roadway, refer to **Figure 34**. The south half of the roadway is widened to the east to avoid the municipal drain along the west half and the north half is widened on centre to align with the Highway 401 overpass. This alternative does not require any buyouts. There will be a section of the municipal drain in the north half that will need to be relocated.

The evaluation of the Concession Road 8 alignment alternatives is shown in **Table 8**. Alternative 4 Meandering alignment is the technically preferred alternative and recommended to be carried forward. Alternative 4 has no “Poor” scores and the greatest number of “Fair” scores when compared to the other alternatives. The TPA aligns with the existing Highway 401 overpass. The Concession Road 8 Alignment TPA is shown on **Figure 35**.

Figure 31: Concession Road 8 Alignment Alternative 1

Figure 32: Concession Road 8 Alignment Alternative 2

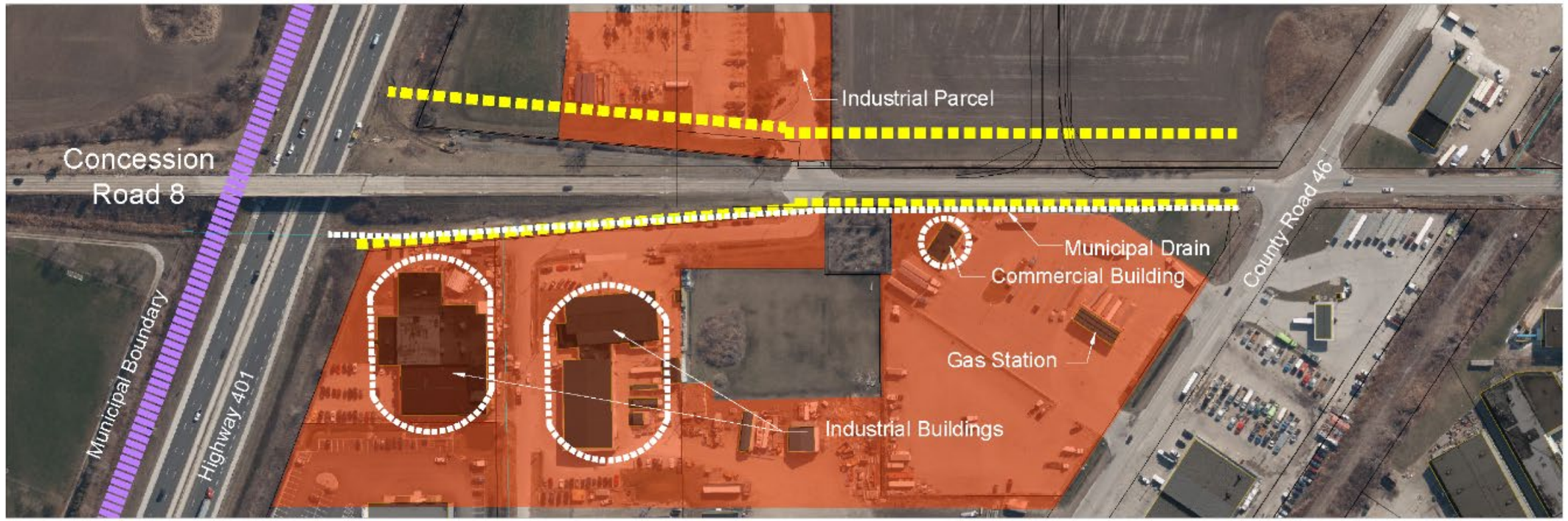


Figure 33: Concession Road 8 Alignment Alternative 3

Figure 34: Concession Road 8 Alignment Alternative 4

Table 8: Concession Road 8 Preliminary Alignment Evaluation

Evaluation Criteria	Alternative 1 - Widen On-Centre	Alternative 2 - Widen to the West	Alternative 3 Widen to the East	Alternative 4 - Meandering
Active Transportation	— All equal.	— All equal.	— All equal.	— All equal.
Aligns with Highway 401 Overpass	✓ Yes	✗ No	✗ No	✓ Yes
Employment Land Required	✓ 0.5 ha	✗ 0.7 ha	✓ 0.5 ha	✓ 0.5 ha
Municipal Drain Impacted	✗ 460 m	✗ 460 m	✓ 0 m	— 230 m
Commercial Building Buyout	✗ 1	✗ 1	✓ 0	✓ 0
Overhead Utility Relocation	— Relocation.	✗ Major relocation .	✓ No relocation.	— Relocation.
Cost	— All equal.	— All equal.	— All equal.	— All equal.
Recommendation:	✗ Not Carried Forward.	✗ Not Carried Forward.	✗ Not Carried Forward.	✓ **Carried Forward**.

Legend

Good ✓ Fair — Poor ✗

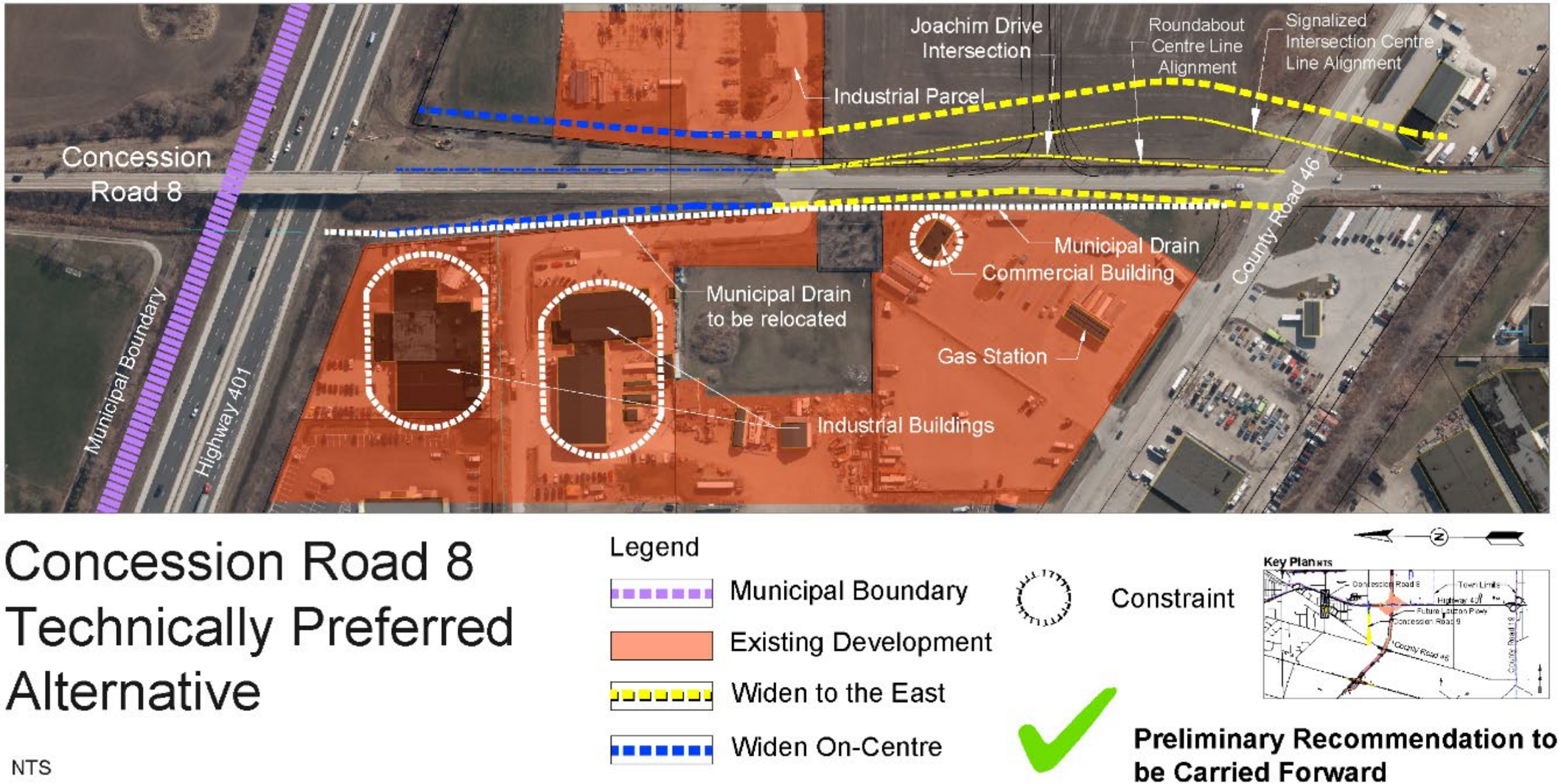


Figure 35: Concession Road 8 Alignment Technically Preferred Alternative

4.5.2 Concession Road 9 Alignment Evaluation

Concession Road 9 within the Study Area is approximately 1 km long, ROW width is approximately 31 m and topography is flat throughout. This section provides a brief description of the Concession Road 9 Alignment Alternatives.

Four (4) alignment alternatives were carried forward for evaluation, each alternative has a 36 m ROW.

Alternative 1: This alternative widens Concession Road 9 on the existing centreline, requiring an additional two and half (2.5) m of land on both sides of the existing ROW for the road widening. This results in impacts to both sides of the roadway. Minor impacts include loss of frontage with modifications to existing driveways and relocation of an existing municipal drain. Refer to **Figure 36.**

Alternative 2: Alternative 2 widens the roadway to the west, resulting in an additional five (5) m on the west side to accommodate the 36 m ROW. Examples of major impacts include the buyout of one (1) residential building. In addition, there will be the need to relocate a municipal drain westerly to the new edge of ROW. This alternative does not align with the MTO overpass. Refer to **Figure 37.**

Alternative 3: Alternative 3 widens the roadway to the east, resulting in an additional five (5) m on the east side to accommodate the 36 m ROW. This results in a minor level of impact to the existing driveway on the east side. No relocation requirements for the municipal along the west side. This alternative does not align with the MTO overpass. Refer to **Figure 38.**

Alternative 4: The Concession Road 9 Alignment Alternative 4 Meandering avoids constraints on both sides of the roadway, refer to **Figure 39**. The south three-quarters of the roadway is widened to the east to avoid the municipal drain along the west half and the north quarter is widened on-centre to align with the MTO overpass. This alternative does not require any buyouts. There will be a section of the municipal drain in the north half that will need to be relocated and minor modifications to the driveways.

The evaluation of the Concession Road 9 alignment alternatives is shown in **Table 9**. Alternative 4 Meandering alignment is tied with Alternative 3 with the same number of good criteria and poor criteria. However Alternative 4 aligns with the Highway 401 overpass. Subsequently Alternative 4 is the technically preferred alternative and recommended to be carried forward. The Concession Road 9 Alignment TPA is shown on **Figure 40**.

Figure 36: Concession Road 9 Alignment Alternative 1

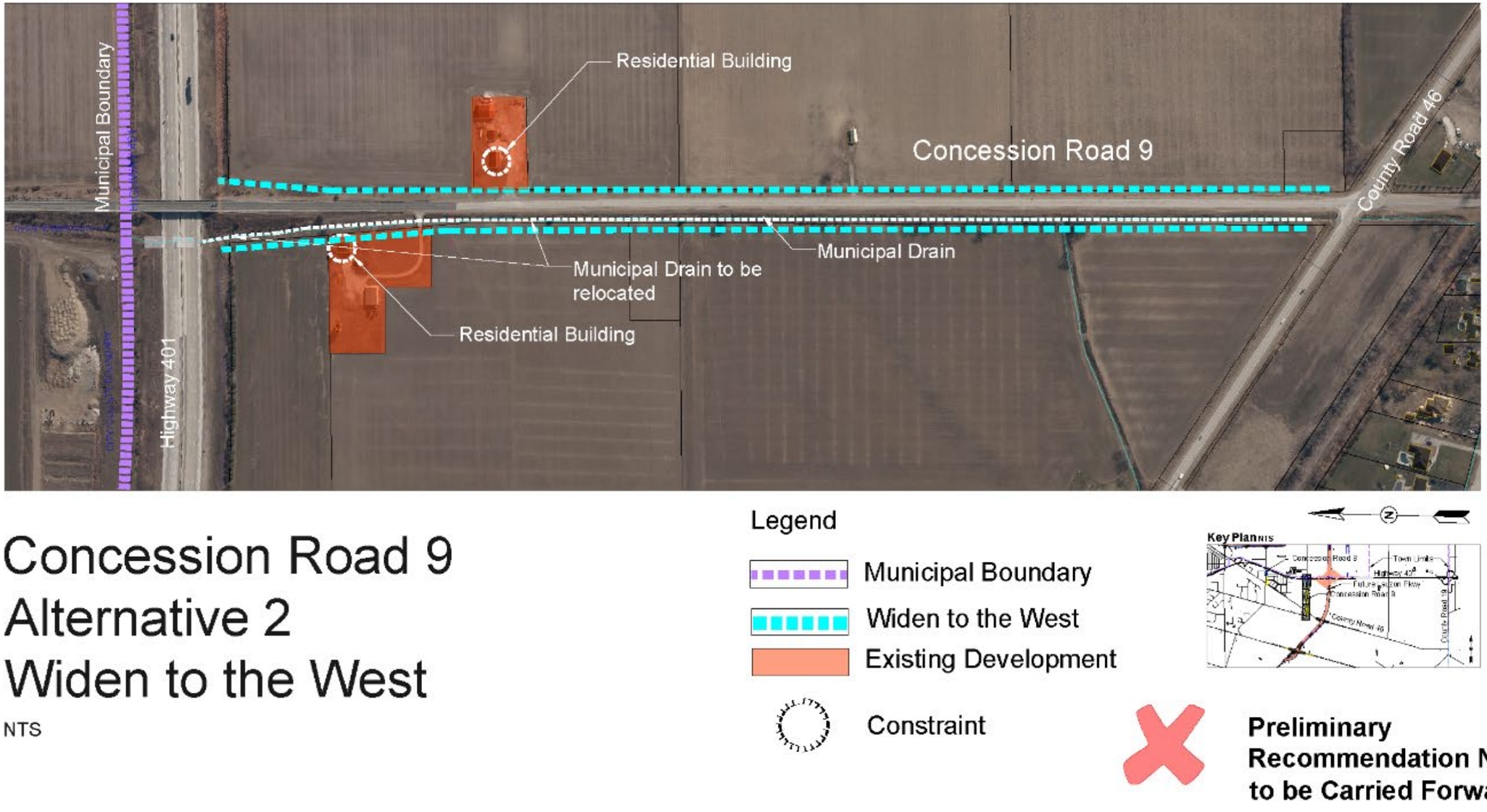
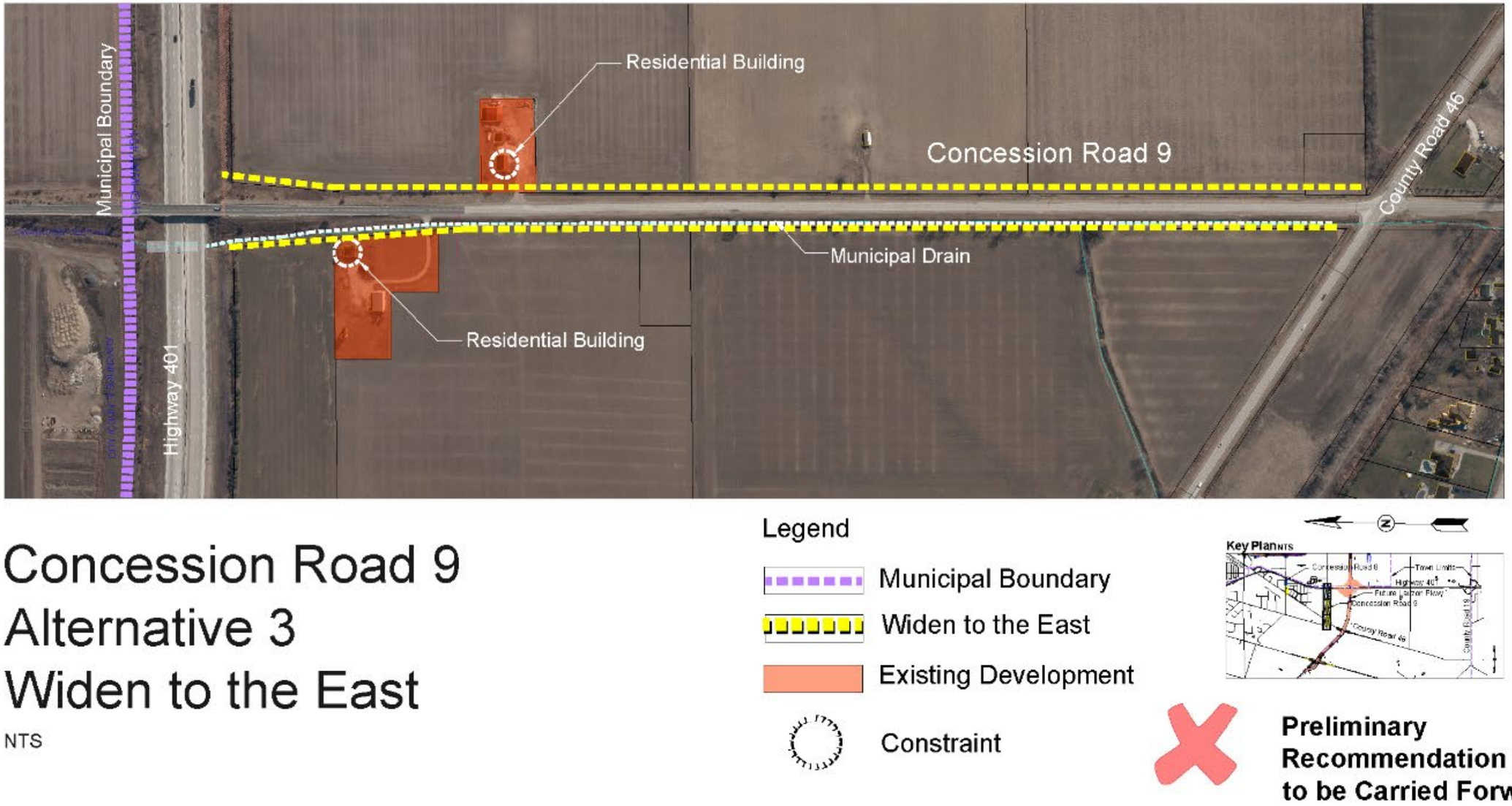


Figure 37: Concession Road 9 Alignment Alternative 2



Concession Road 9 Alternative 3 Widen to the East

NTS

Figure 38: Concession Road 9 Alignment Alternative 3

Figure 39: Concession Road 9 Alignment Alternative 4

Table 9: Concession Road 9 Preliminary Alignment Evaluation

Evaluation Criteria	Alternative 1 - Widen On-Centre	Alternative 2 - Widen to the West	Alternative 3 Widen to the East	Alternative 4 - Meandering
Active Transportation	▬ All equal.	▬ All equal.	▬ All equal.	▬ All equal.
Aligns with Highway 401 Overpass	✓ Yes	× No	× No	✓ Yes
Agricultural Land Required	▬ 0.6 ha	▬ 0.6 ha	▬ 0.6 ha	▬ 0.6 ha
Municipal Drain Impacted	× 1 km	× 1 km	✓ 0 m	▬ 270 m
Residential Building Buyout	✓ 0	× 1	✓ 0	✓ 0
Visual Intrusion	× 2	✓ 0	▬ 1	× 2
Overhead Utility Relocation	▬ Relocation	✓ No relocation .	▬ Relocation.	▬ Relocation.
Cost	▬ All equal.	▬ All equal.	▬ All equal.	▬ All equal.
Recommendation:	× Not Carried Forward.	× Not Carried Forward.	× Not Carried Forward.	✓ **Carried Forward**. This alternative aligns with the MTO overpass.

Legend

Good ✓ Fair ▬ Poor ×

Figure 40: Concession Road 9 Technically Preferred Alternative

4.6 County Road 46 Cross Section Evaluation

This section documents the coarse screening of the County Road 46 cross section alternatives.

4.6.1 Section 1 Cross Section Evaluation

Section 1 is in an urban area with commercial and industrial development on both sides of County Road 46.

4.6.1.1 Section 1 Cross Section Alternatives

Four (4) urban cross section alternatives were considered for the arterial roadway in Section 1 and are shown in **Figure 41** to **Figure 44**. The TPA for the alignment in Section 1 widens on-centre, refer to **Section 4.4.1.2.** All cross sections have a 40 m ROW and include bike lanes, a MUP and/or sidewalk and stormwater services. The Section 1 Cross Section Alternatives considered:

- Alternative 1 – 2-Lane Urban Cross Section;
- Alternative 2 – 3-Lane Urban Cross Section;
- Alternative 3 – 4-Lane Urban Cross Section; and
- Alternative 4 – 5-Lane Urban Cross Section.

All alternatives provide active transportation; however, the implementation of the MUP may be a feature that can be phased in with the ERCA proposed MUP along the south side of the ROW.

The coarse screening of the Section 1 cross section alternatives is shown in **Table 10.** The recommended cross sections for further study are:

- Alternative 3 – 4-Lane Urban Cross Section; and
- Alternative 4 – 5-Lane Urban Cross Section.

4.6.1.2 Section 1 Recommended Cross Section

Alternative 4 – 5-Lane Urban Cross Section provides the greatest flexibility for future growth and includes active transportation for pedestrians and cyclists in addition to the future MUP located to the south of County Road 46. The 5-Lane Urban Cross Section is the technically preferred cross section and is shown on **Figure 44.**

4.6.1.3 Section 1 Cross Section Refinements

Refinements to the Section 1 Cross Section, shown at PCC 3, included a larger ditch on the northside to accommodate stormwater runoff, space for existing utilities and a 1.8 m sidewalk on the northside and utilize the future rail line trail to the south for pedestrians and cyclists, as shown on **Figure 45**.

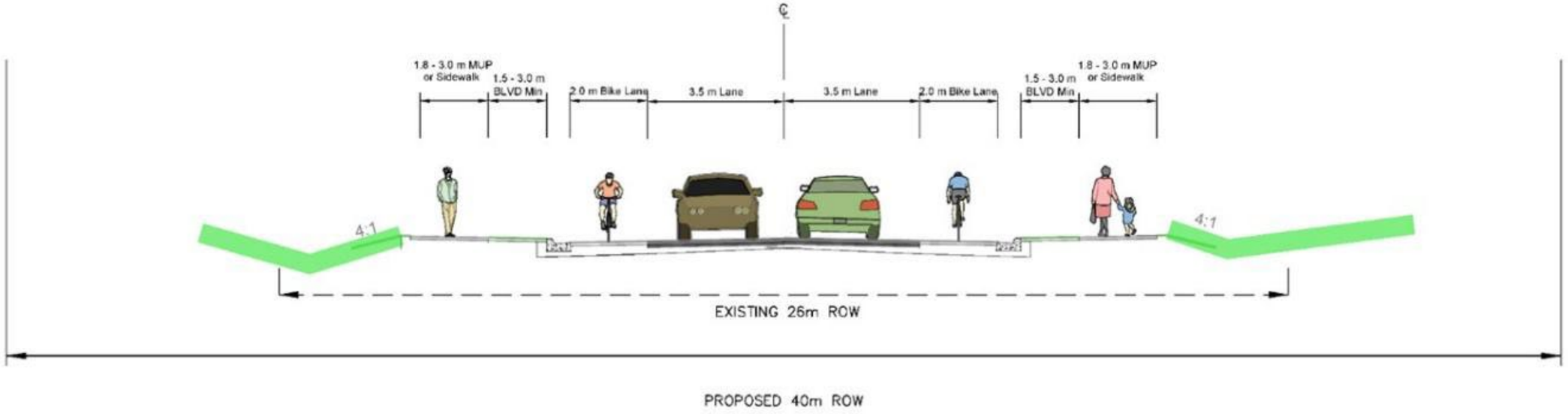


Figure 41: Section 1 Alternative 1 - 2-Lane Urban Cross Section

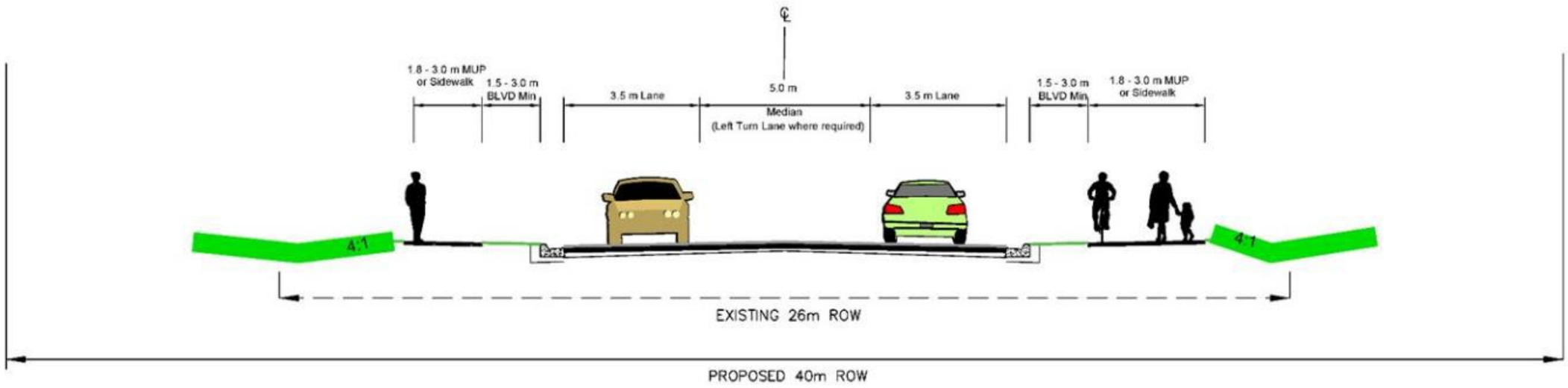


Figure 42: Section 1 Alternative 2 – 3-Lane Urban Cross Section

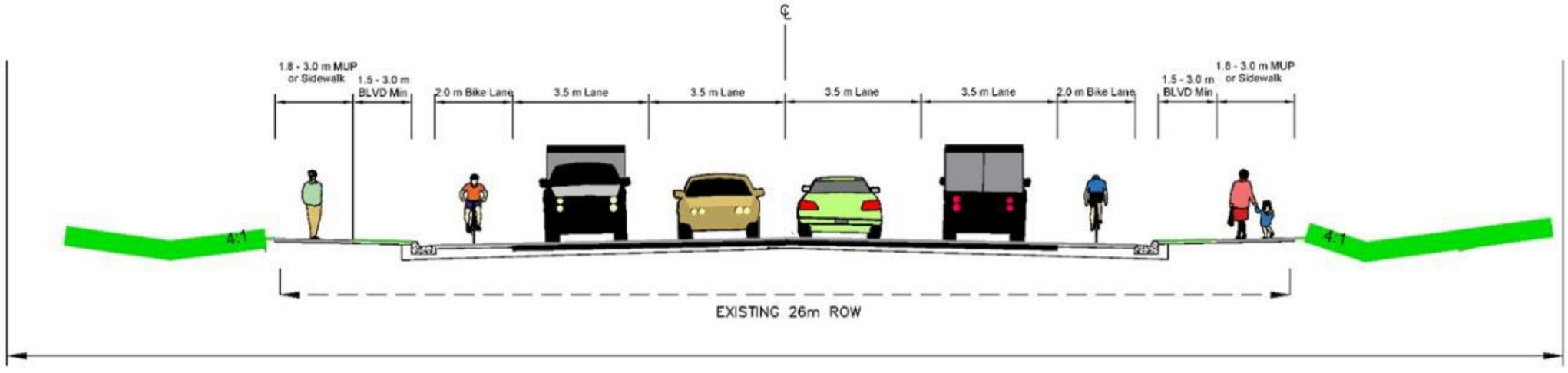


Figure 43: Section 1 Alternative 3 – 4-Lane Urban Cross Section

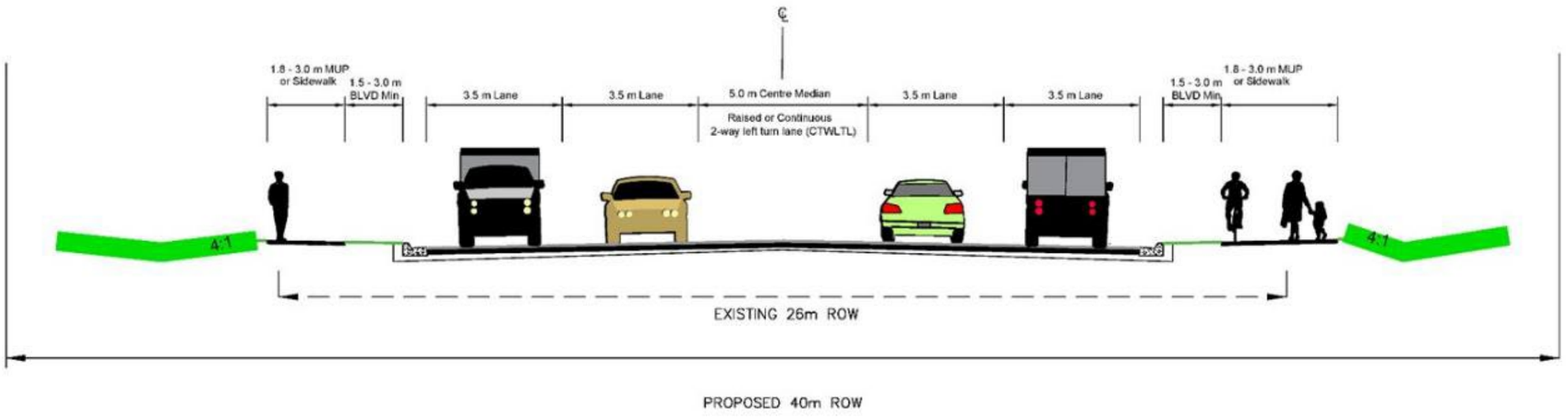


Figure 44: Section 1 Alternative 4 – 5-Lane Urban Cross Section

Table 10: Section 1 Cross Section Evaluation

Evaluation Criteria	Alternative 1 – 40 m ROW 2-Lane Urban Cross Section with MUP/Sidewalk	Alternative 2 – 40 m ROW 3-Lane Urban Cross Section with MUP/Sidewalk	Alternative 3 – 40 m ROW 4-Lane Urban Cross Section with MUP/Sidewalk	Alternative 4 – 40 m ROW 5-Lane Urban Cross Section with MUP/Sidewalk
Active Transportation	▬ All equal	▬ All equal	▬ All equal	▬ All equal
Meets Future Travel Demand	✖ Does not meet future travel demand	✖ Does not meet future travel demand	✓ Meets future travel demand by providing 4-laning	✓ Meets future travel demand by providing 4-laning
Provide a left-turn lane	✖ No Left-turn lane	✓ Left-turn Lane provided	✖ No Left-turn lane	✓ Left-turn Lane provided
Impacts to Business Park/ Employment Area	▬ All alternatives considered equal	▬ All alternatives considered equal	▬ All alternatives considered equal	▬ All alternatives considered equal
Construction Cost	✓ 2-lane roadway width lowest cost	▬ 3-lane roadway width median cost	✖ 4-lane roadway width higher cost	✖ 5-lane roadway width highest cost
Recommendation:	✖ Not Carried Forward. Does not meet travel demand.	✖ Not Carried Forward. Does not meet travel demand.	✓ Carry Forward for further study	✓ Carry Forward for further study

Legend

Good ✓ Fair ▬ Poor ✖

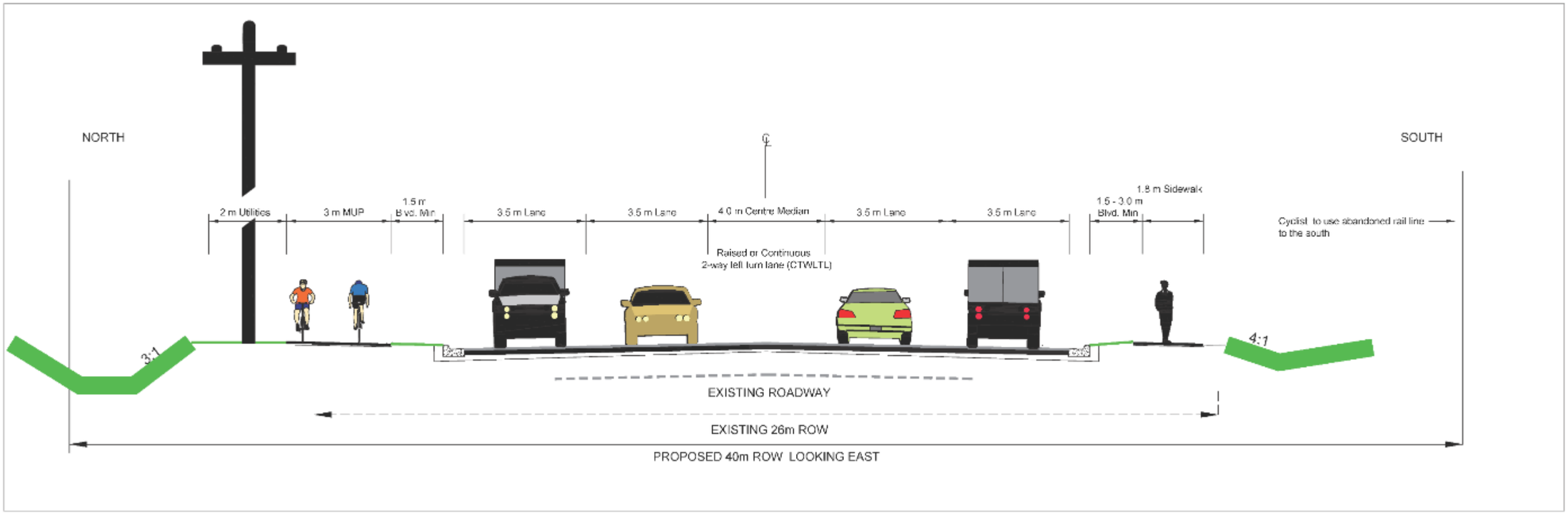


Figure 45: Section 1 Cross Section Technically Preferred Alternative

4.6.2 Section 2 Cross Section Evaluation

Section 2 is located in an urban area with a mix commercial, industrial and residential development on the south side of County Road 46 and an approved industrial subdivision being developed to the north.

4.6.2.1 Section 2 Cross Section Alternatives

Rural and urban cross section alternatives were considered for this section of the arterial roadway. The eight (8) cross section alternatives are shown in **Figure 46** to **Figure 53**. Urban cross sections have a 40 m ROW and include bike lanes, MUP and/or sidewalk, stormwater service and/or ditching. Rural cross sections have a 40 m ROW with paved shoulders for bikes and ditching. Pedestrians may be accommodated by the future MUP to the south. The TPA for the alignment in Section 2 meanders, refer to **Section 4.4.2.2**. The alternatives are listed as follows:

- Alternative 1 – 2-Lane Rural Cross Section
- Alternative 2 – 2-Lane Urban Cross Section;
- Alternative 3 – 3-Lane Rural Cross Section;
- Alternative 4 – 3-Lane Urban Cross Section;
- Alternative 5 – 4-Lane Rural Cross Section;
- Alternative 6 – 4-Lane Urban Cross Section;
- Alternative 7 – 5-Lane Rural Cross Section; and
- Alternative 8 – 5-Lane Urban Cross Section.

Implementation of the MUP may be a feature that can be phased in conjunction with the proposed MUP to the south of the ROW by ERCA.

The coarse screening of the Central Section 2 cross section alternatives is shown in **Table 11**. The recommended cross sections for further study are:

- Alternative 5 – 40 m ROW 4-Lane Rural Cross Section;
- Alternative 6 – 40 m ROW 4-Lane Urban Cross Section;
- Alternative 7 – 40 m ROW 5-Lane Rural Cross Section; and
- Alternative 8 – 40 m ROW 5-Lane Urban Cross Section.

4.6.2.2 Section 2 Recommended Cross Section

Within this section it is recommended that two cross sections be carried forward. Within the Oldcastle area Alternative 8 Urban cross section be carried forward (matching Section 1) to Concession Road 9. To the east of Concession Road 9 Alternative 7 – 5-Lane Rural Cross Section provides the greatest flexibility for future growth, accommodates farm vehicles and includes active transportation for cyclists in addition to the future MUP located to the south of County Road 46. Alternatives 7 and 8 are the technically preferred cross sections for Section 2. The Section 2 Cross Sections TPA are shown on **Figure 54.**

4.6.3 Section 2 Cross Section Refinement

Section 2 was subsequently modified to an urban cross section within the commercial area to accommodate existing driveways and parking.

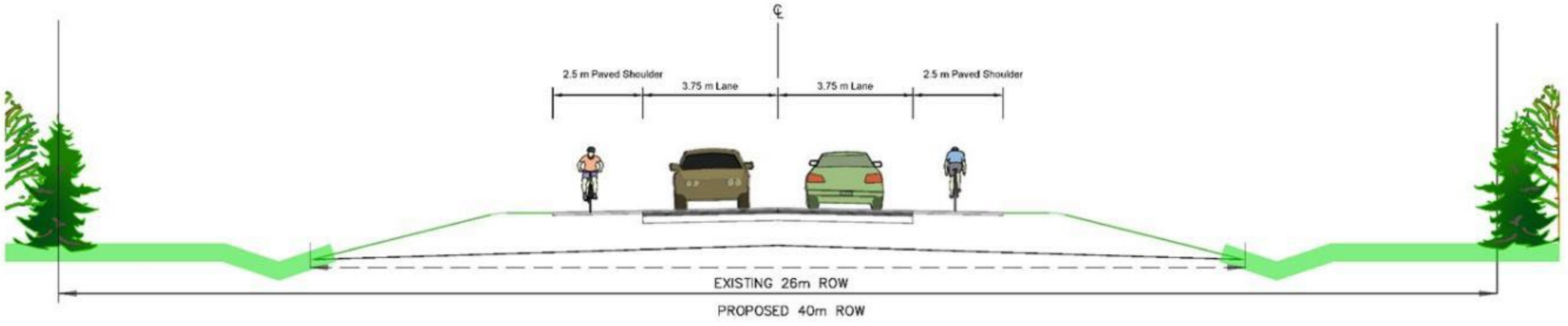


Figure 46: Section 2 Alternative 1 - 2-Lane Rural Cross Section

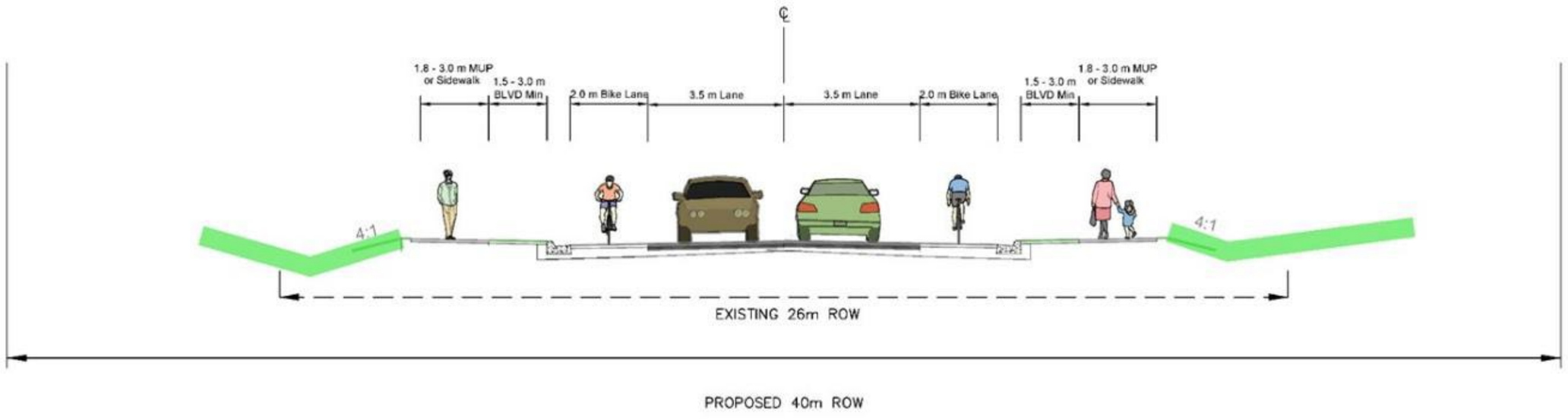


Figure 47: Section 2 Alternative 2 – 2-Lane Urban Cross Section

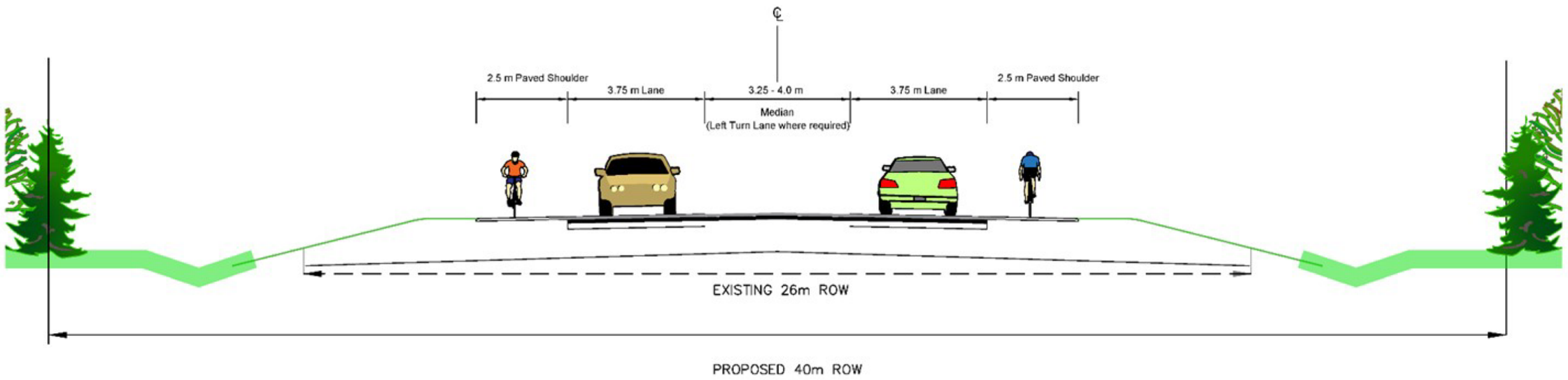


Figure 48: Section 2 Alternative 3 - 3-Lane Rural Cross Section

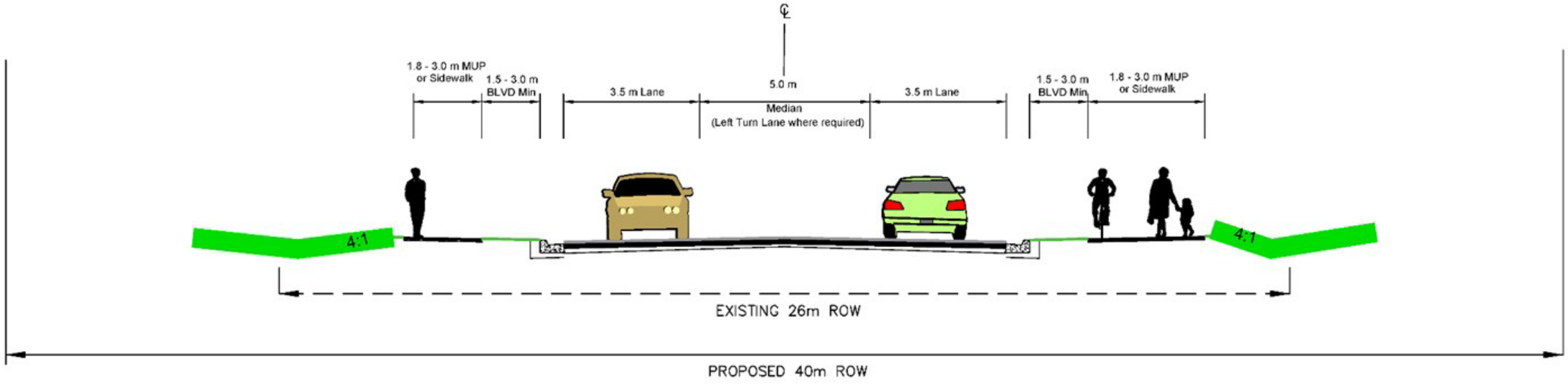


Figure 49: Section 2 Alternative 4 - 3-Lane Urban Cross Section

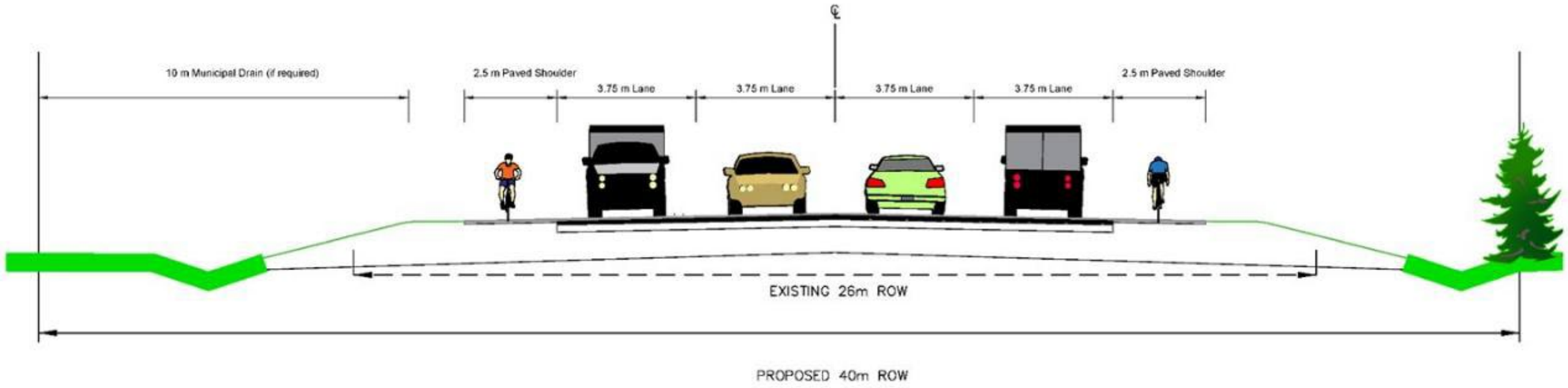


Figure 50: Section 2 Alternative 5 - 4-Lane Rural Cross Section

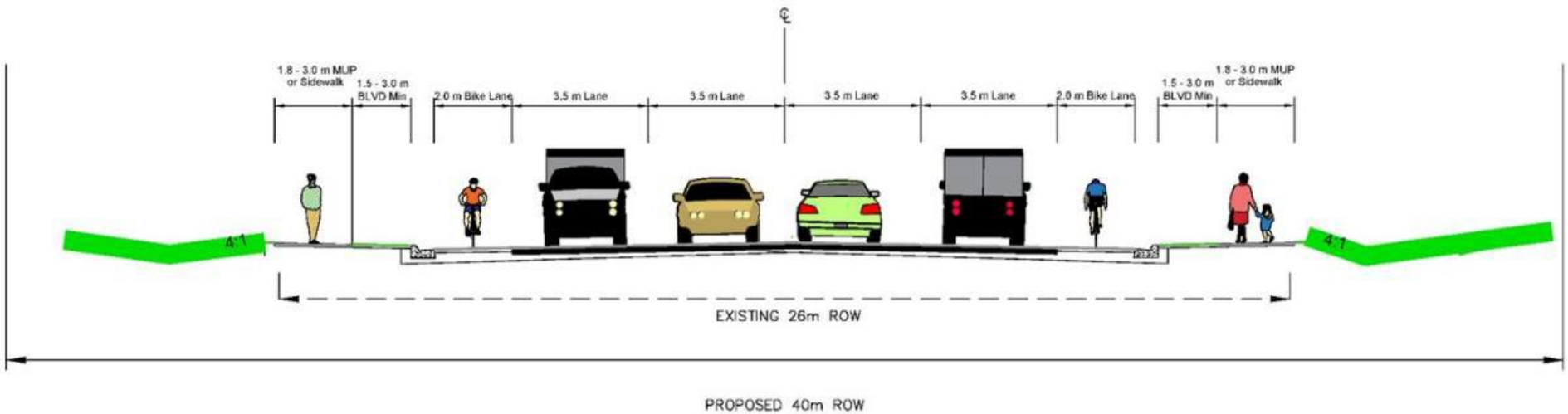


Figure 51: Section 2 Alternative 6 - 4-Lane Urban Cross Section

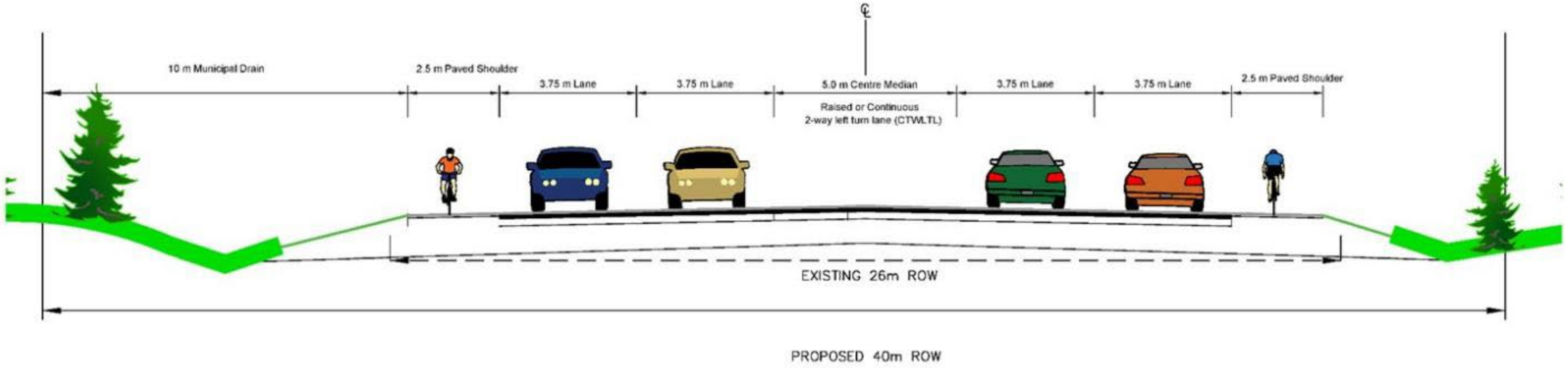


Figure 52: Section 2 Alternative 7 - 5-Lane Rural Cross Section

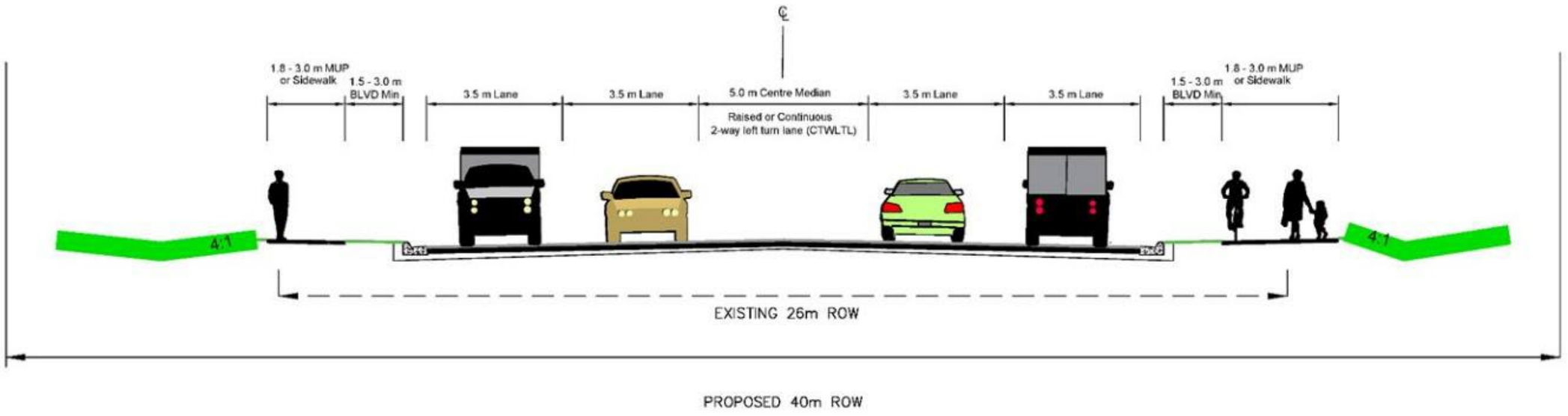


Figure 53: Section 2 Alternative 8 - 5-Lane Urban Cross Section

Table 11: Section 2 Cross Section Evaluation

Evaluation Criteria	Alternative 1 – 2-Lane Rural Cross Section	Alternative 2 – 2-Lane Urban Cross Section	Alternative 3 – 3-Lane Rural Cross Section	Alternative 4 – 3-Lane Urban Cross Section	Alternative 5 – 4-Lane Rural Cross Section	Alternative 6 – 4-Lane Urban Cross Section	Alternative 7– 5-Lane Rural Cross Section	Alternative 8 – 5-Lane Urban Cross Section
Meets Future Travel Demand	✗ Does not meet future travel demand.	✗ Does not meet future travel demand.	✗ Does not meet future travel demand.	✗ Does not meet future travel demand.	✓ Meets future travel demand by providing 4-laning.	✓ Meets future travel demand by providing 4-laning.	✓ Meets future travel demand by providing 4-laning.	✓ Meets future travel demand by providing 4-laning.
Provide a left-turn lane	✗ No left-turn lane.	✓ Left-turn lane provided	✓ Left-turn lane provided	✓ Left-turn lane provided	✗ No left-turn lane	✗ No left-turn lane	✓ Left-turn lane provided	✓ Left-turn lane provided
Accommodates pedestrians (Pedestrian may use the future MUP.)	✗ No	✓ Yes	✗ No	✓ Yes	✗ No	✓ Yes	✗ No	✓ Yes
Accommodates municipal drain within the ROW.	✓ Yes	✗ No	✓ Yes	✗ No	✓ Yes	✗ No	✓ Yes	✗ No
Construction Cost	✓ 2-lane rural roadway width lowest cost	✓ 2-lane urban roadway width second lowest cost	— 3-lane rural roadway width third lowest cost	— 3-lane urban roadway width fourth lowest cost	— 4-lane rural roadway width 5th highest cost	— 4-lane urban roadway 6th highest cost	✗ 5-lane rural roadway second highest cost	✗ 5-lane urban roadway highest cost
Recommendation:	✗ Not Carried Forward. Does not meet travel demand.	✗ Not Carried Forward. Does not meet travel demand.	✗ Not Carried Forward. Does not meet travel demand.	✗ Not Carried Forward. Does not meet travel demand.	✓ Carry Forward for further study	✓ Carry Forward for further study	✓ Carry Forward for further study	✓ Carry Forward for further study

Legend

Good ✓ Fair — Poor ✗

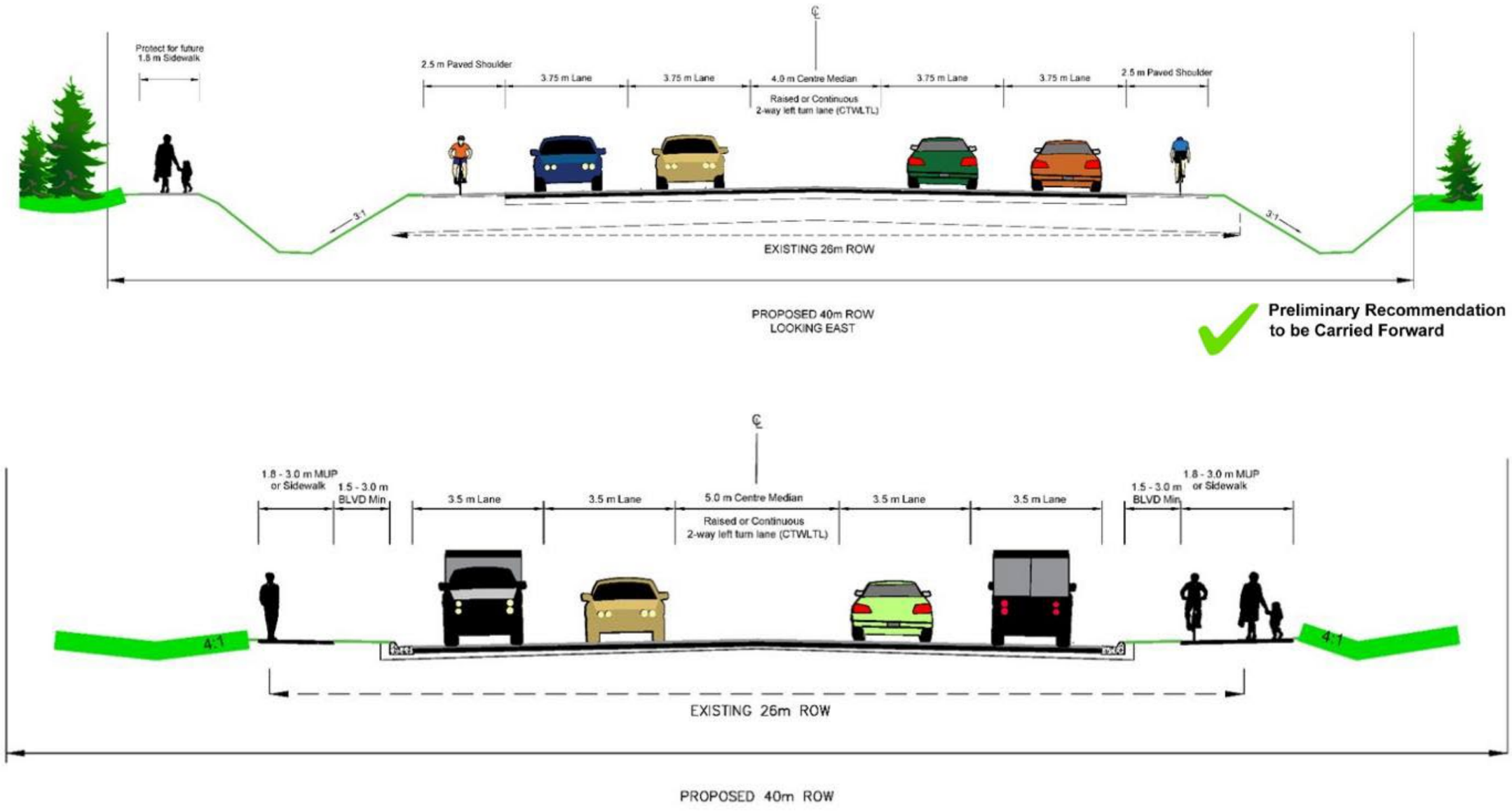


Figure 54: Section 2 Urban and Rural Cross Sections Technically Preferred Alternative's

4.6.4 Section 3 Cross Section Evaluation

Section 3 is located within a rural area, of primarily agricultural land uses to the north and south side with residences scattered along the roadway.

4.6.4.1 Section 3 Cross Section Alternatives

Only rural cross section alternatives were considered for this section of the arterial roadway. The four (4) rural cross section alternatives are shown in **Figure 55** to **Figure 58.** All cross sections have a 40 m ROW widening either on-centre, to the north or to the south of the existing ROW and include bike lanes, and ditches. The TPA for the alignment in Section 3 meanders to avoid constraints, refer to **Section 4.4.3.2**. The alternatives are listed as follows:

- Alternative 1 – 2-Lane Rural Cross Section;
- Alternative 2 – 3-Lane Rural Cross Section;
- Alternative 3 – 4 -Lane Rural Cross Section; and
- Alternative 4 – 5-Lane Rural Cross Section;

The evaluation of the coarse screening for the Section 3 cross section alternatives is shown in **Table 12**. Two (2) alternative cross sections are recommended for further study:

- Alternative 3 – 4-Lane Rural Cross Section; and
- Alternative 4 – 5-Lane Rural Cross Section.

4.6.4.2 Section 3 Recommended Cross Section

Alternative 4 – 5-Lane Rural Cross Section provides the greatest flexibility for future growth, accommodates farm vehicles and includes active transportation for cyclists. Alternative 4 is the TPA for Section 3 and is shown on **Figure 59.**

4.6.4.3 Section 3 Cross Section Refinements

Two refinements were considered for Section 3 Cross Section Alternative 4 – 5-Lane Rural Cross Section east of Lauzon Parkway to minimize impacts on the municipal drain and were shown at PCC 3.

- **Refinement 1**: Keeps the municipal drain where it is and widens the ROW to the north, as shown on **Figure 60.**
- **Refinement 2**: Widen the ROW to the north. The municipal drain remains as is, in a separate easement from the arterial road ROW, as shown on **Figure 61.**

The refinements were shown to the public at PCC 3. Refinement 1 was recommended to be carried forward to minimize property impacts to the north.

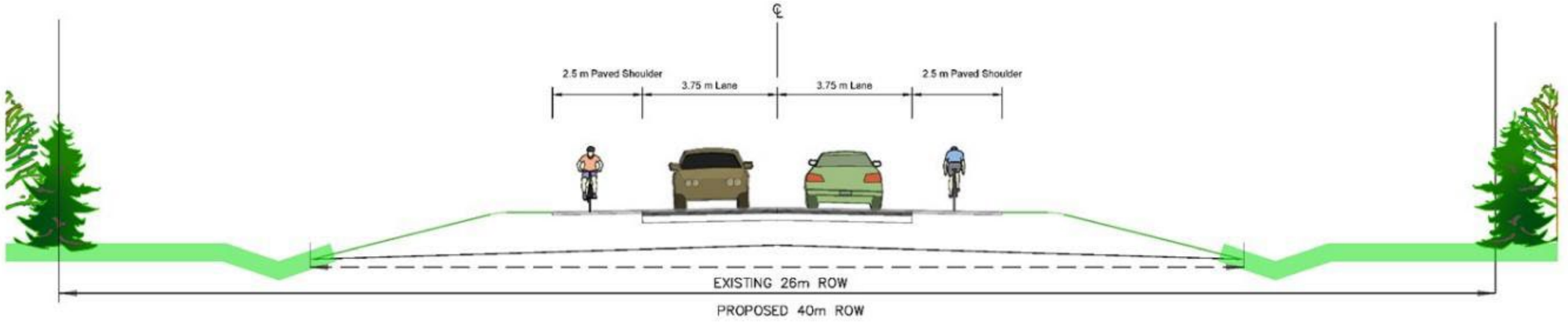


Figure 55: Section 3 Alternative 1 - 2-Lane Rural Cross Section

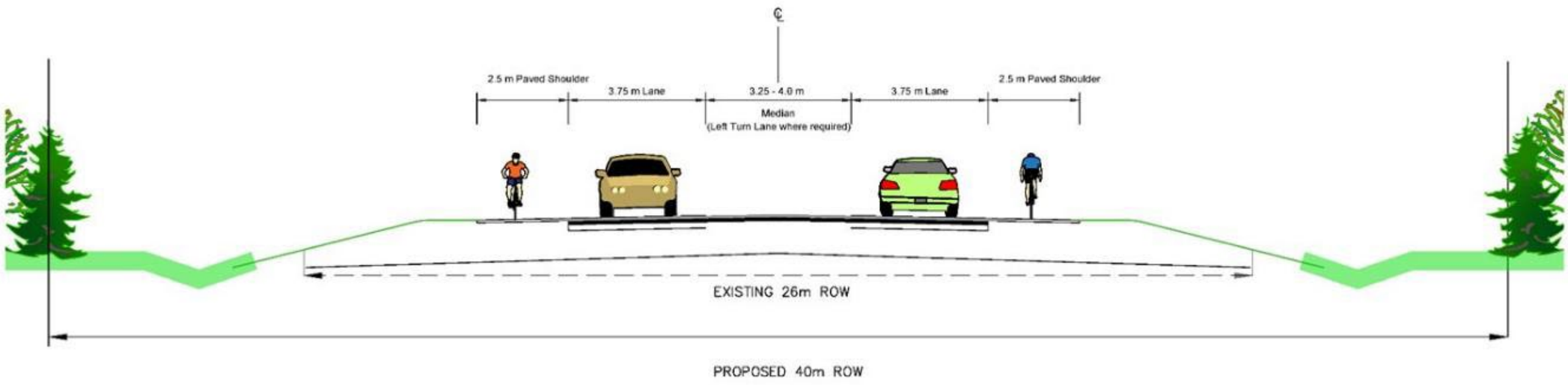


Figure 56: Section 3 Alternative 2 – 3-Lane Rural Cross Section

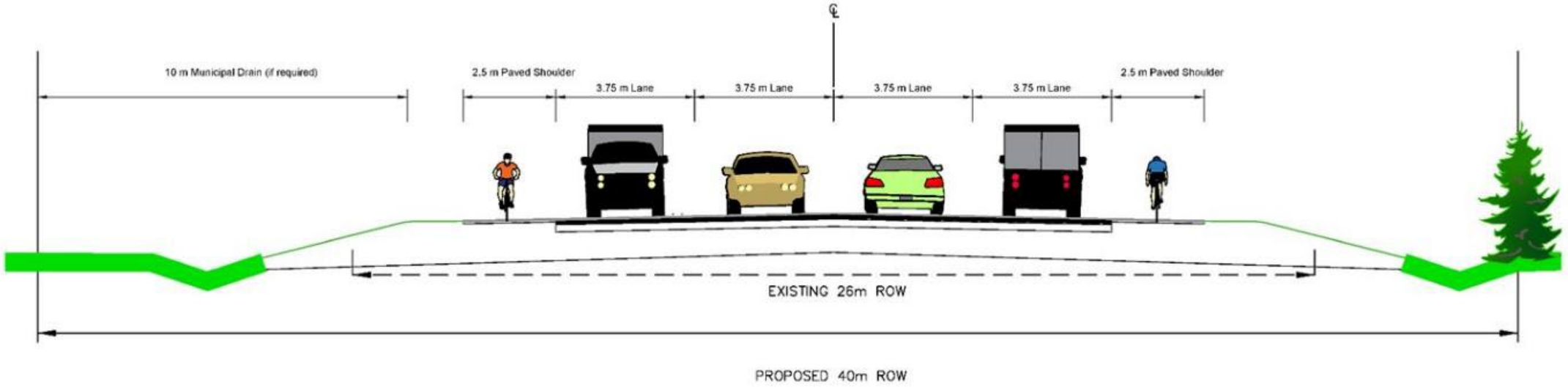


Figure 57: Section 3 Alternative 3 – 4-Lane Rural Cross Section

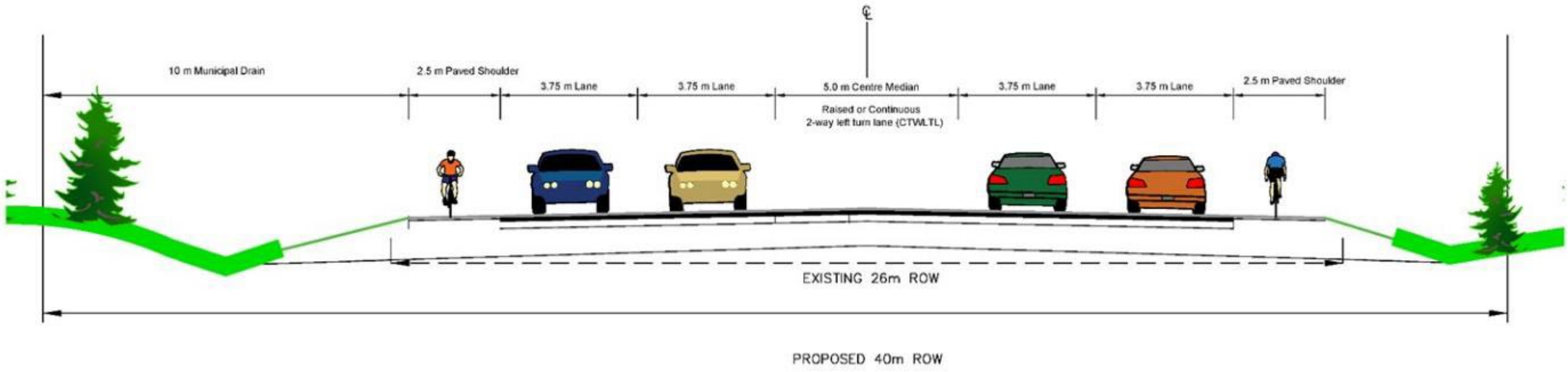


Figure 58: Section 3 Alternative 4 – 5-Lane Rural Cross Section

Table 12: Section 3 Cross Section Evaluation

Evaluation Criteria	Alternative 1 2-Lane Rural	Alternative 2 3-Lane Rural	Alternative 3 4-Lane Rural	Alternative 4 5-Lane Rural
Active Transportation	— All equal.	— All equal.	— All equal.	— All equal.
Meets Future Travel Demand	✗ Does not meet future travel demand.	✗ Does not meet future travel demand.	✓ Meets future travel demand.	✓ Meets future travel demand.
Provides a left-turn lane	✗ No Left-turn Lane.	✓ Left-turn Lane.	✗ No Left-turn Lane.	✓ Left-turn Lane.
Construction Cost	✓ 2-lane roadway width lowest cost.	— 3-lane roadway width medium cost.	— 4-lane rural roadway width higher cost.	✗ 5-lane rural roadway width highest cost.
Recommendation:	✗ Not Carried Forward. Does not meet travel demand.	✗ Not Carried Forward. Does not meet travel demand.	✗ Not recommended.	✓ **Recommended to be Carried Forward**.

Legend

Good ✓ Fair — Poor ✗

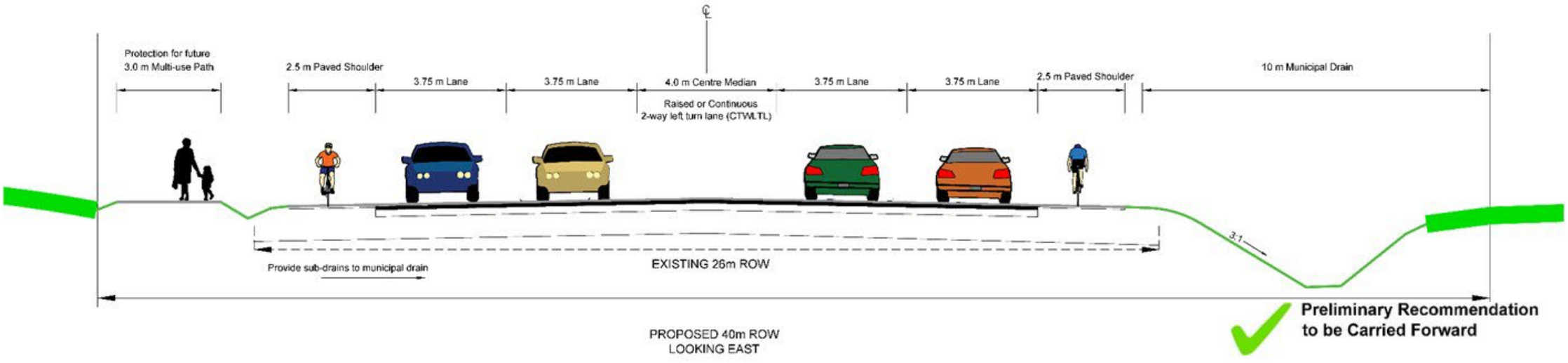
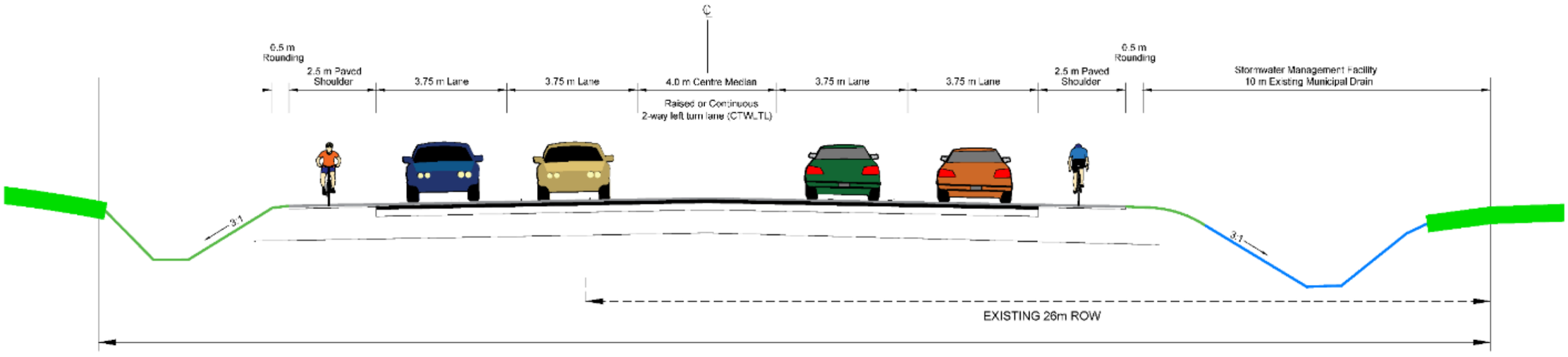


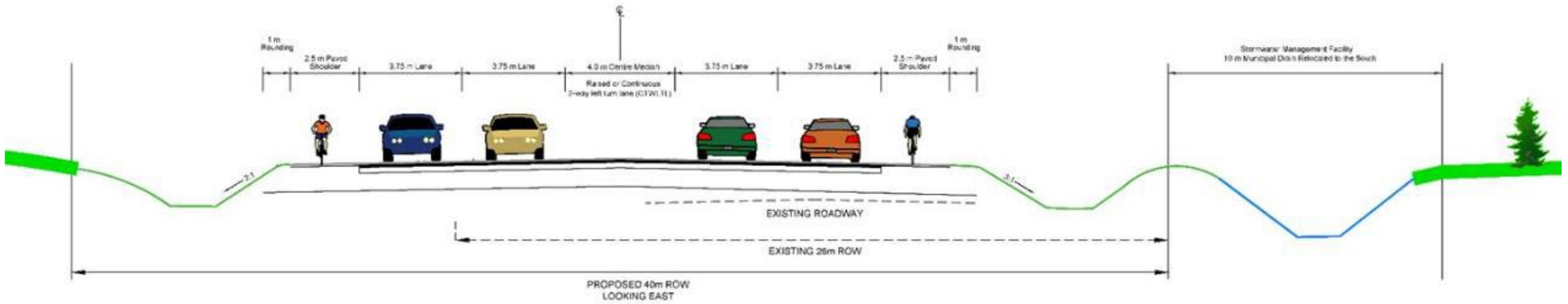
Figure 59: Section 3 Cross Section Technically Preferred Alternative



Preliminary Recommendation to be Carried Forward

SECTION 3 PRELIMINARY CROSS SECTION - REFINEMENT 1

Figure 60: Section 3 Cross Section Refinement 1



SECTION 3 PRELIMINARY CROSS SECTION - REFINEMENT 2
EAST OF LAUZON PARKWAY TO WEST OF COUNTY ROAD 43

Figure 61: Section 3 Cross Section Refinement 2

4.7 Concession Roads 8 and 9 Cross Section Evaluation

4.7.1 Concession Road 8

Concession Road 8 is located within the Town of Tecumseh and will be servicing the developing Business Park/Employment Areas north of County Road 46. It continues northerly into the City of Windsor, north of Highway 401, where lands are also undergoing expansion for employment and residential areas. Urban and rural cross section alternatives were considered. A municipal drain is located along the west side.

4.7.1.1 Concession Road 8 Cross Section Alternatives

The four (4) cross section alternatives are shown in **Figure 62** to **Figure 65.** All cross sections have a 36 m ROW. Alternatives with cycle tracks are proposed to match the City of Windsor's planned roadway design for Concession Roads 8 north of Highway 401. The cross-section alternatives include:

- Alternative 1 – 2-Lane Rural Cross Section with bike lanes and a MUP (one side);
- Alternative 2 – 2-Lane Urban Cross Section with cycle tracks with a sidewalk and/or a MUP (one side);
- Alternative 3 – 3-Lane Rural Cross Section with bike lanes and a MUP (one side) (utilized at intersections only); and
- Alternative 4 – 3-Lane Urban Cross Section with cycle tracks with a sidewalk on one side and a MUP on the other (utilized at intersections only).

The coarse screening of the Concession Road 8 cross section alternatives is shown in **Table 13**. The recommended cross sections for further study are:

- Alternative 1 – 2-Lane Rural Cross Section with bike lanes and a MUP (one side);
- Alternative 2 – 2-Lane Urban Cross Section with cycle tracks and sidewalks and/or MUP; and
- Alternative 4 – 3-Lane Urban Cross Section with cycle tracks with a sidewalk on one side and a MUP on the other (utilized at intersections only).

4.7.1.2 Concession Road 8 Recommended Cross Section

The technically preferred cross section for Concession Road 8 is a 2-Lane Urban cross section. This cross section provides the greatest flexibility for future growth in combination with a 3-lane cross section at the intersections. This cross-section will include active transportation for pedestrians and cyclists. Refer to **Figure 63**.

4.7.1.3 Concession Road 8 Cross Section Refinements

Refinements to the technically preferred alternative, refer to **Figure 66** were shown at PCC 3 and include:

- Semi – urban cross section;
- East side MUP to accommodate cyclists and pedestrians; and
- Narrower shoulder and an armourstone wall along the west side to accommodate the municipal drain and provide additional space for utilities on the west side.

All the above refinements were recommended to be carried forward.

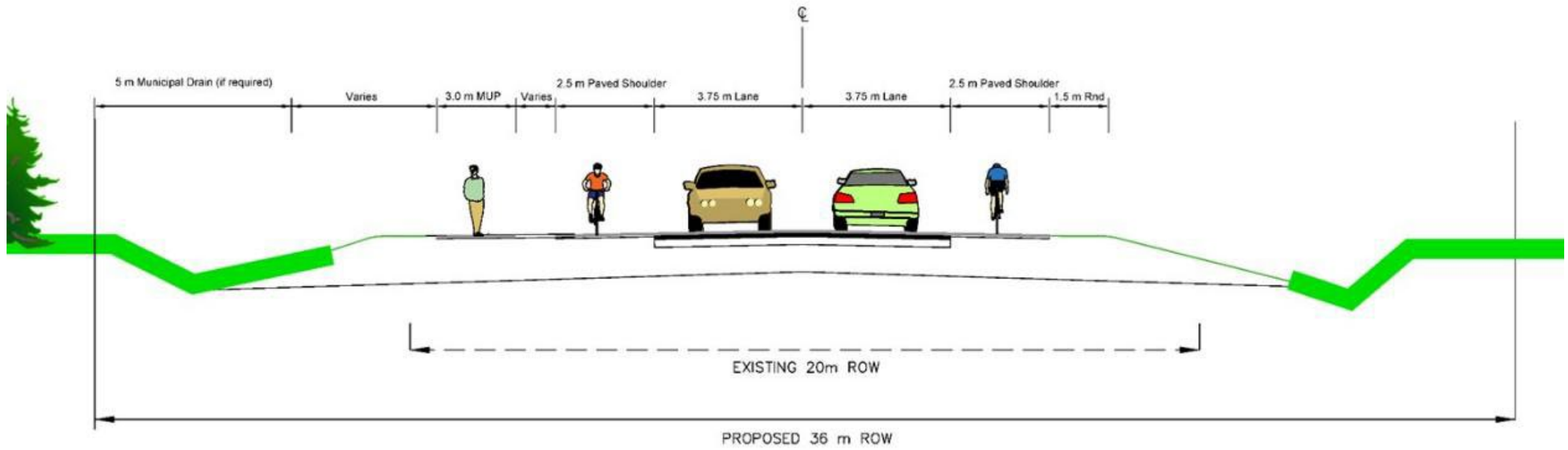


Figure 62: Concession Roads 8 and 9 – Alternative 1 - 2-Lane Rural Cross Section with Bike Lanes and a MUP

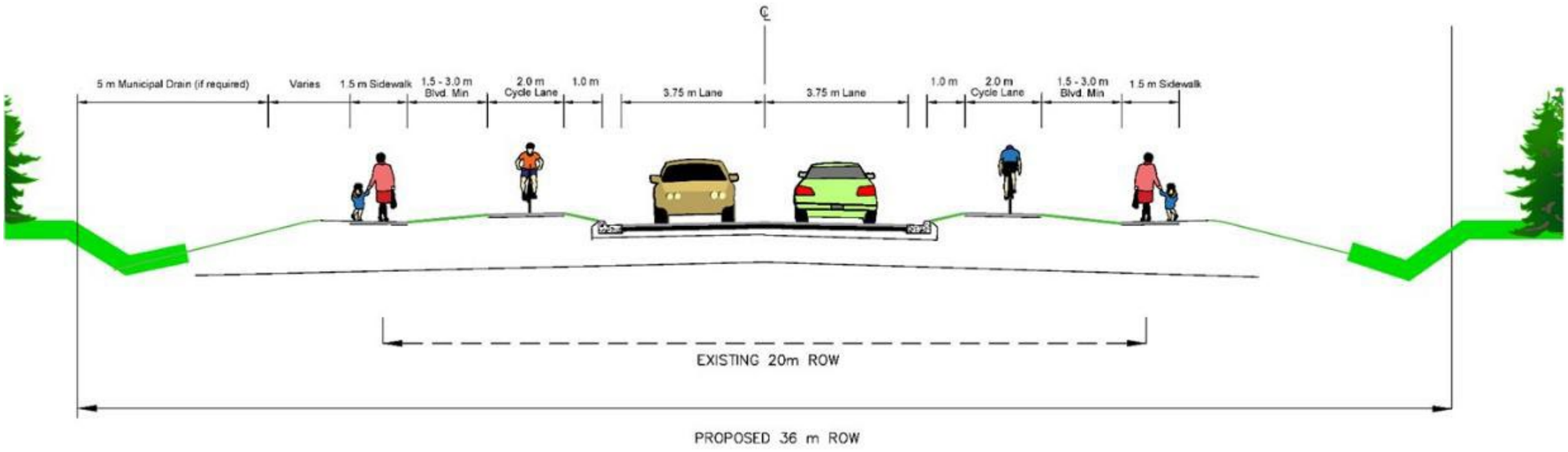


Figure 63: Concession Roads 8 and 9 – Alternative 2 - 2-Lane Urban Cross Section with Cycle Tracks and Sidewalks and/or MUP

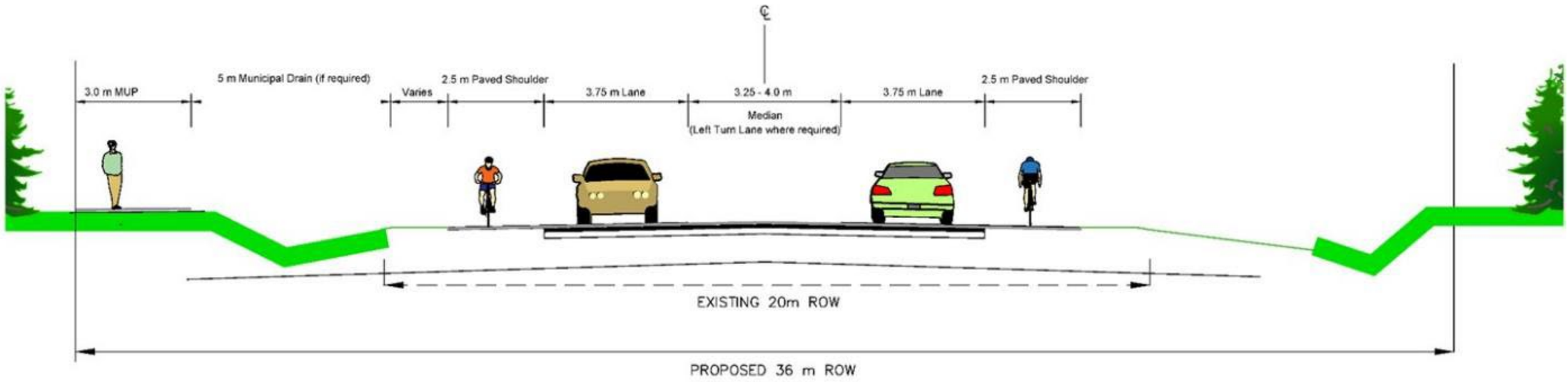


Figure 64: Concession Roads 8 and 9 – Alternative 3 – 3-Lane Rural Cross Section with Bike Lanes and a MUP

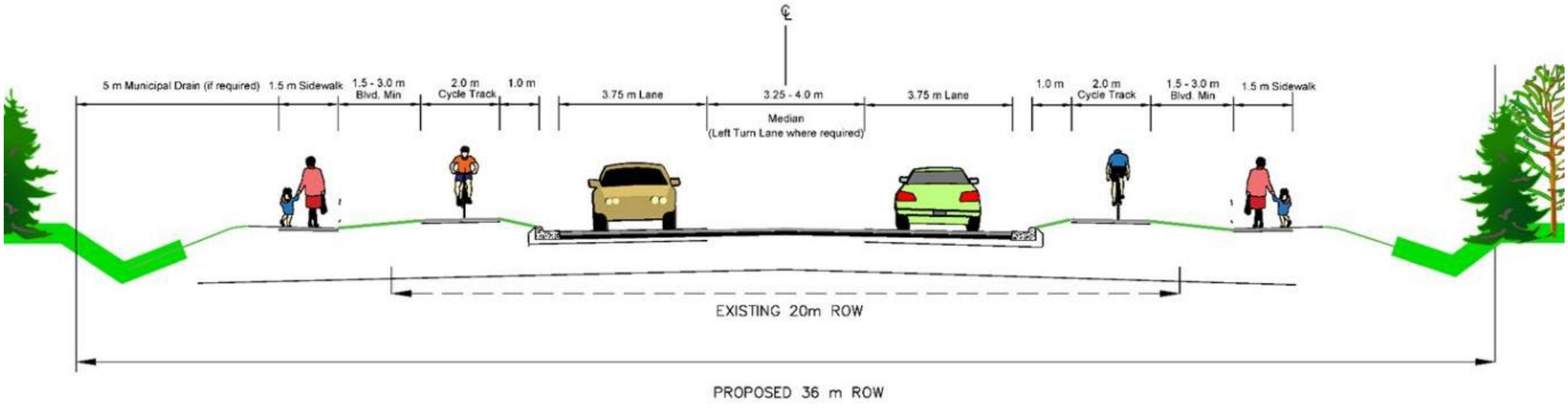


Figure 65: Concession Roads 8 and 9 – Alternative 4 – 3-Lane Urban Cross Section with Cycle Tracks and Sidewalks

Table 13: Concession Road 8 – Coarse Screening of Cross Sections

Evaluation Criteria	Alternative 1 – 2-Lane Rural	Alternative 2 – 2-Lane Urban	Alternative 3 – 3-Lane Rural	Alternative 4 – 3-Lane Urban
Active Transportation	— All equal	— All equal	— All equal	— All equal
Meets Future Travel Demand	✓ Meets future travel demand by providing 2-laning	✓ Meets future travel demand by providing 2-laning	✗ Exceeds future travel demand by providing 3-laning	✗ Exceeds future travel demand by providing 3-laning
Matches the City of Windsor planning north of Highway 401	✗ No	✓ Yes	✗ No	✓ Yes
Provide a left-turn lane	✗ No Left-turn Lane	✗ No Left-turn Lane	✓ Left-turn Lane provided	✓ Left-turn Lane provided
Accommodates farm vehicles	✓ Yes	✗ No	✓ Yes	✗ No
Impacts to Natural Environment / Storm Water Quality	— All alternatives considered equal	— All alternatives considered equal	— All alternatives considered equal	— All alternatives considered equal
Construction Cost	✓ 2-lane rural roadway lowest cost	✓ 2-lane urban roadway 2nd lowest cost	✗ 3-lane rural roadway higher cost	✗ 3-lane urban roadway highest cost
Recommendation	✓ **Carry Forward for further study**.	✓ Carry Forward for further study.	✗ Not Carried Forward. Exceeds travel demand.	✓ **Carry Forward for further study at intersections.**

Legend

Good ✓ Fair — Poor ✗

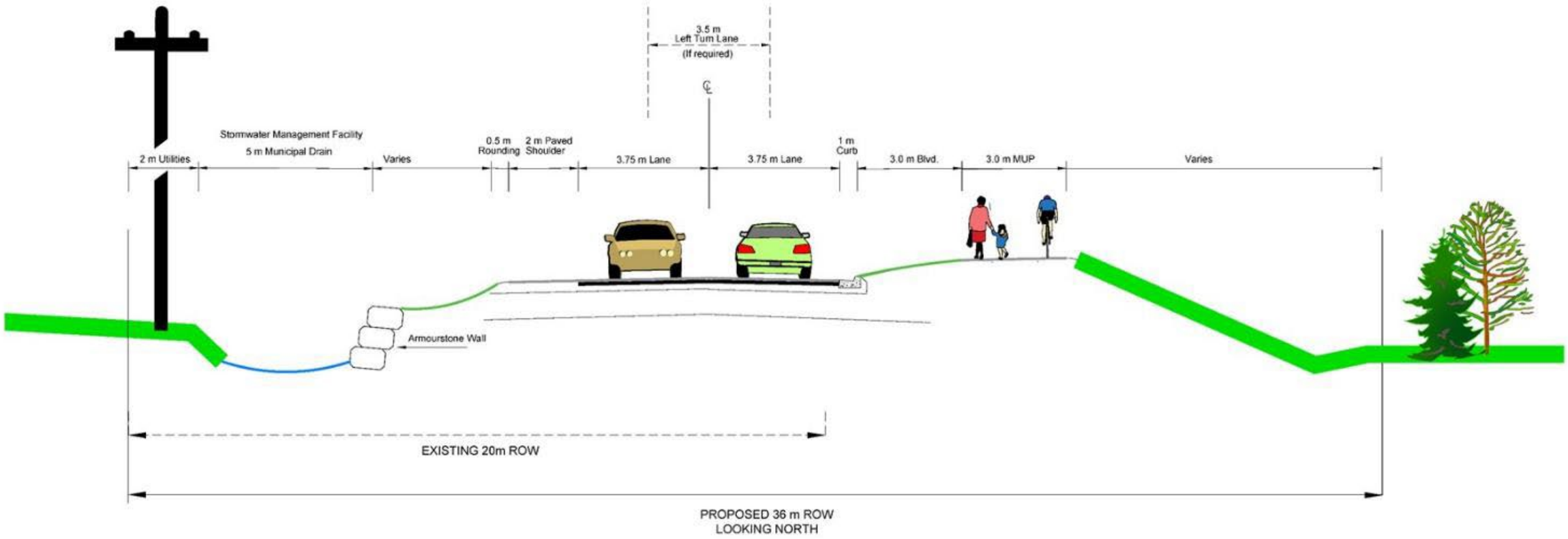


Figure 66: Concession Road 8 Cross Section Refinements

4.7.2 Concession Road 9

Concession Road 9 is located within the Town of Tecumseh and will be servicing the developing Business Park/Employment Areas north of County Road 46 and west of Concession Road 9. The lands to the east are agricultural and a municipal drain is located along the west side. This roadway continues northerly into the City of Windsor, north of Highway 401, where lands are also undergoing expansion for employment and residential areas. Urban and rural cross section alternatives were considered.

4.7.2.1 Concession Road 9 Cross Section Alternatives

The four (4) cross section alternatives are shown in **Figure 62** to **Figure 65.** All cross sections have a 36 m ROW. Alternatives with cycle tracks are proposed to match the City of Windsor's planned roadway design for Concession Roads 9 north of Highway 401. The cross-section alternatives include:

- Alternative 1 – 2-Lane Rural Cross Section with bike lanes and a MUP (one side);
- Alternative 2 – 2-Lane Urban Cross Section with cycle tracks and sidewalks and/or a MUP (one side);
- Alternative 3 – 3-Lane Rural Cross Section with bike lanes and a MUP (one side) (utilized at intersections only); and
- Alternative 4 – 3-Lane Urban Cross Section with cycle tracks and sidewalks) (utilized at intersections only).

The coarse screening of the Concession Road 9 cross section alternatives is shown in **Table 14**. The recommended cross sections for further study are:

- Alternative 1 – 2-Lane Rural Cross Section with bike lanes and a MUP (one side);
- Alternative 2 –-2-Lane Urban Cross Section with cycle tracks and sidewalk and/or MUP (one side); and
- Alternative 4 – 3- Lane Urban Cross Section with cycle tracks with a sidewalk on one side and a MUP on the other (utilized at intersections only).

4.7.2.2 Concession Road 9 Recommended Cross Section

The technically preferred cross section for Concession Road 9 is a 2-Lane Urban cross section. This cross section provides the greatest flexibility for future growth in combination with a 3-lane cross section at the intersections. This recommendation includes active transportation for pedestrians and cyclists. Refer to **Figure 63.**

4.7.2.3 Concession Road 9 Cross Section Refinements

Refinements to the technically preferred alternative, refer to **Figure 67**, were shown at PCC 3 and include:

- Semi – urban cross section;
- East side MUP to accommodate cyclists and pedestrians; and
- A narrower shoulder and an armourstone wall along the west side to accommodate the municipal drain and provide additional space for utilities on east side.

All the above refinements were recommended to be carried forward.

Table 14: Concession Road 9 – Coarse Screening of Cross Sections

Evaluation Criteria	Alternative 1 – 2-Lane Rural	Alternative 2 – 2-Lane Urban	Alternative 3 – 3-Lane Rural	Alternative 4 – 3-Lane Urban
Active Transportation	— All equal.	— All equal.	— All equal.	— All equal.
Meets Future Travel Demand	✓ Meets future travel demand by providing 2-laning.	✓ Meets future travel demand by providing 2-laning.	✗ Exceeds future travel demand by providing 3-laning.	✗ Exceeds future travel demand by providing 3-laning.
Matches the City of Windsor planning north of Highway 401	✗ No	✓Yes	✗ No	✓Yes
Provide a left-turn lane	✗ No Left-turn Lane.	✗ No Left-turn Lane.	✓ Left-turn Lane provided.	✓ Left-turn Lane provided.
Accommodates farm vehicles	✓Yes	✗ No	✓ Yes	✗ No
Impacts to Natural Environment / Storm Water Quality	— All alternatives considered equal.	— All alternatives considered equal.	— All alternatives considered equal.	— All alternatives considered equal.
Construction Cost	✓ 2-lane rural roadway lowest cost.	✓ 2-lane urban roadway 2nd lowest cost.	✗ 3-lane rural roadway higher cost.	✗ 3-lane urban roadway highest cost.
Recommendation	✓ **Carry Forward for further study.**	✓ **Carry Forward for further study.**	✗ Not Carried Forward. Exceeds travel demand.	✓ **Carry Forward for further study at intersections.**

Legend

Good ✓ Fair — Poor ✗

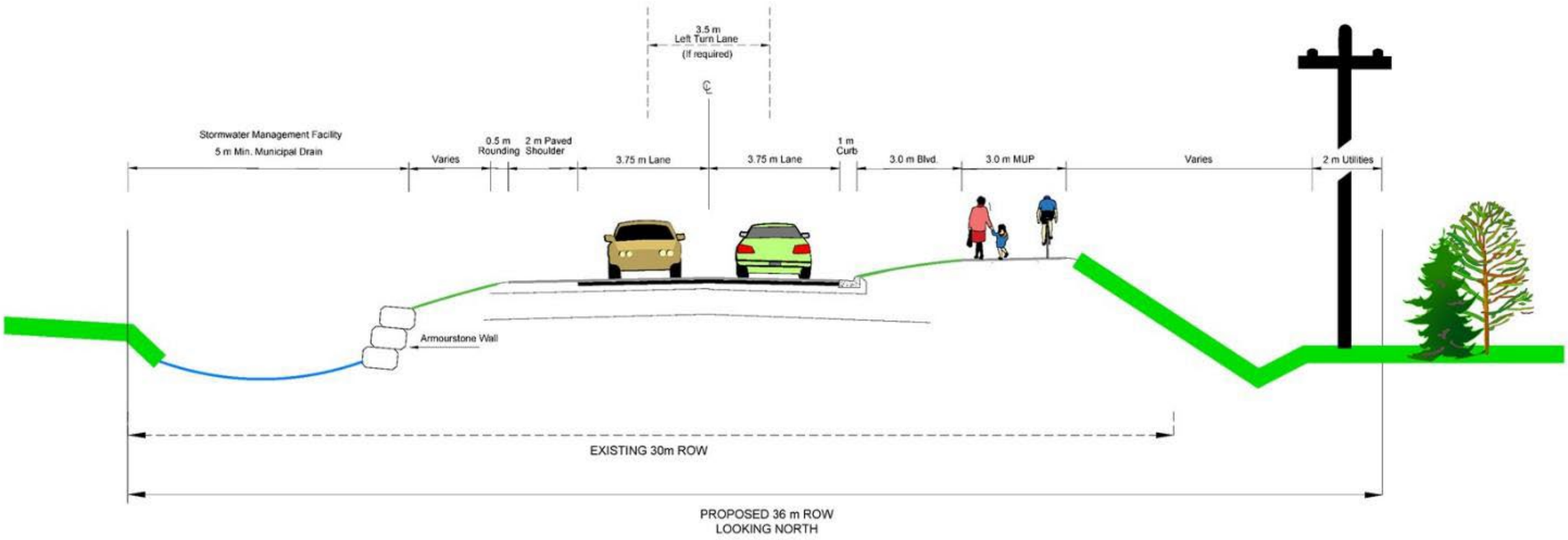


Figure 67: Concession Road 9 Cross Section Refinements

Preliminary Recommendation to be Carried Forward

4.8 County Road 46 Intersection Evaluation

The five (5) intersections under review are shown in **Figure 68**. They include Concession Road 8, Concession Road 9, County Road 17, County Road 43 and Concession Road 12. Future intersections, including the new Joachim Drive and Santarossa Street, have not been included in this evaluation. Previously approved intersections design for Lauzon Parkway and County Road 19 are carried forward unchanged. In addition, Sexton Sideroad will be closed when Lauzon Parkway is constructed and is not included in this evaluation.

The following section describes the trade-offs that were considered at the intersections on County Road 46 within the Study Area:

Traffic Operation (favours roundabout control): Traffic signals provide conventional operation for drivers but may result in longer delays than a roundabout.

Traffic Safety (favours roundabout control): Roundabouts feature channelized, curved approaches that reduce vehicle speed, entry yield control that gives ROW to circulating traffic, and counterclockwise flow around a central island that minimizes conflict points. The net result of lower speeds and reduced conflicts at roundabouts compared to a traffic signal is a lower collision risk because the likelihood of injury or fatality crashes is reduced.

Pedestrian and Cyclist Safety (favours single lane roundabout control): The lower vehicular speeds and reduced conflict environment at a roundabout create a more suitable environment for walking and bicycling. The roundabout design can allow cyclists to operate in a single lane roundabout or outside the roundabout on a multi use path.

***Large Agricultural Equipment and Transport Trucks (favours signalized intersections)*:** A roundabout centre island can be designed to accommodate oversized vehicles. A recent roundabout project in southern Ontario was designed to accommodate trucks transporting wind turbine blades. The proposed roundabout designs are based on accommodating large combines with an overall length of 24 m.

Construction Cost (favours signalized intersections): From a cost perspective, a signalized intersection is typically 20%-50% lower cost than a roundabout control design. A roundabout may also require the purchase of additional property. The higher cost is typically associated with traffic staging to construct the roundabout.

Future Longer Term Operational Costs (favours roundabout control): Future longer term operational costs typically favour roundabout control.

Property Impacts (favours signalization): A roundabout requires more property than a signalized intersection.

Intersection Spacing (favours roundabout control): *The* desirable spacing of arterial road intersections is 400 to 500 m. This distance allows for the coordination of adjacent traffic signals (if required), would normally accommodate the increased traffic queuing at a traffic signal while allowing for the left-turn storage lanes, signage, driver recognition of the intersection and directional signage requirements.

In developing intersection alternatives, several general principles and objectives were considered for arterial road operation and safety. These include:

- Meeting the traffic demand forecast for the next 20 – 30 years.
- Intersection spacing.
- Technical feasibility of construction, operation and maintenance.
- Provide for the efficient movement of people and goods.
- Minimize environmental impacts.
- Emergency service response objectives.
- Cost

The planning process includes the generation of all possible alternatives. Alternatives that were not considered viable, had significant impacts, or had substantially poorer safety or traffic performance compared with other alternatives, were coarse screened, as described in the following sections

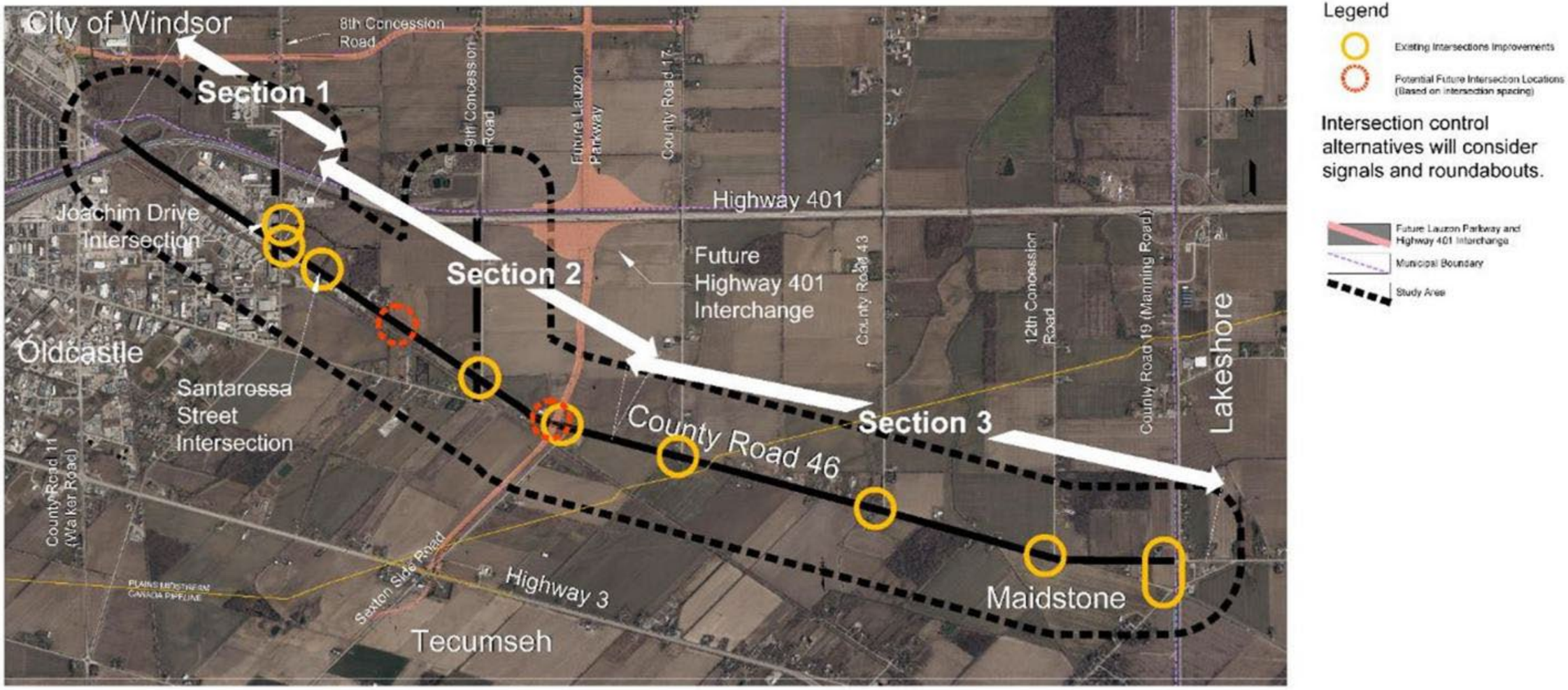


Figure 68: Intersection Locations

4.8.1 County Road 46 and Concession Road 8 Intersection

The following are the intersection alternatives carried forward for the County Road 46 and Concession Road 8 intersection.

Alternative A – Do Nothing: The existing intersection is signalized with a significant skew on the north and south legs. Disadvantages of this alternative include increased delays to accommodate turning movements; and higher occurrence/severity of collisions based on higher operating speeds and number of conflict points.

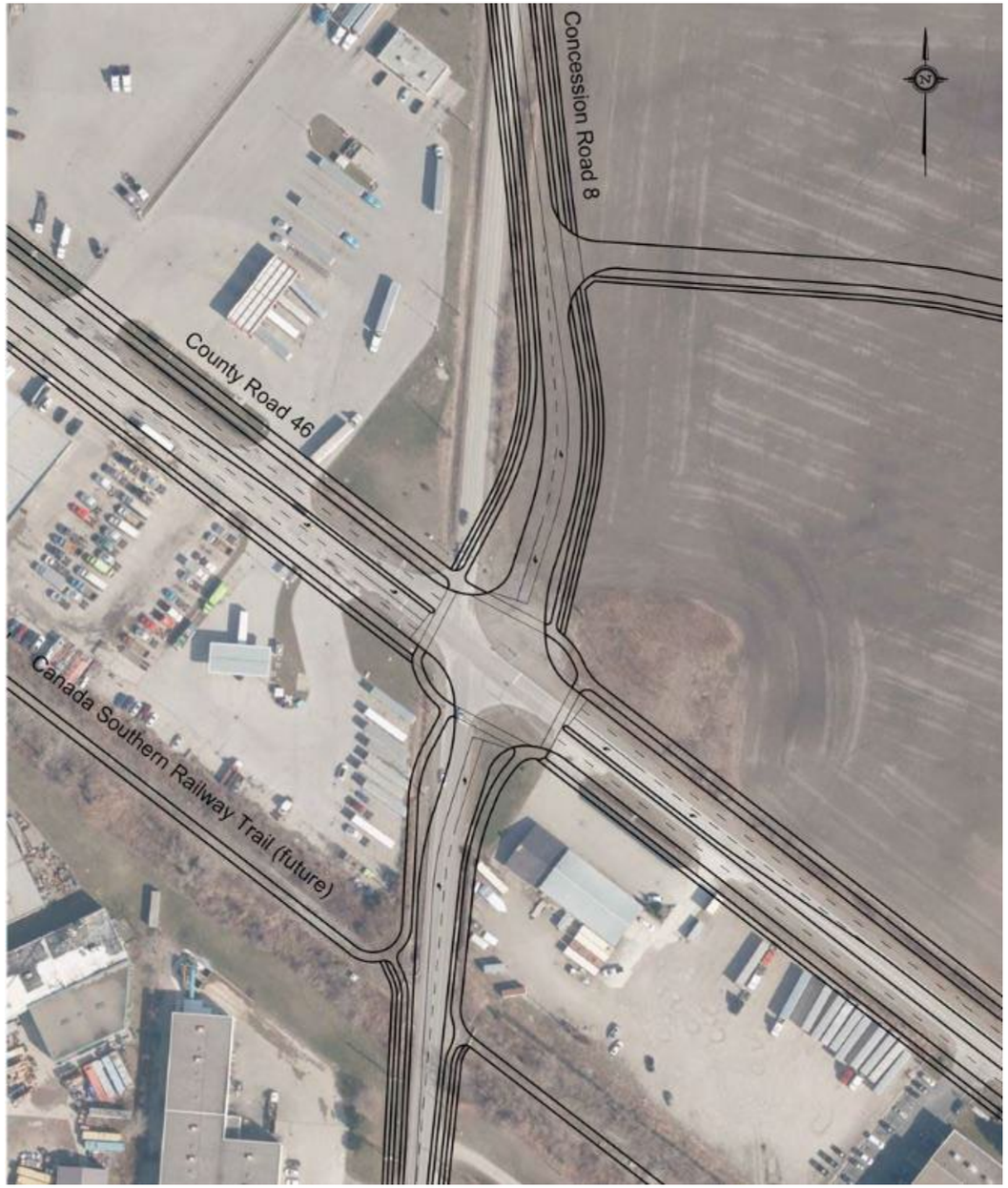
Alternative B - Signalized Intersection: Disadvantages of this alternative include increased delays to accommodate turning movements; and higher occurrence/severity of collisions based on higher operating speeds and number of conflict points. Refer to **Figure 69**.

Alternative C – 2-lane Roundabout: Advantages of this alternative include greater level of service, lower long-term costs. Cyclists will be directed to ride outside the roundabout. For the future employment areas to the north, a roundabout typically results in better traffic operations during both high and low traffic demand periods and provides a gateway opportunity for the Business Park / Employment Area. Refer to **Figure 70**.

Table 15 summarizes the evaluation of the County Road 46 and Concession Road 8 preferred intersection alternatives.

The preliminary recommendation would be to choose roundabout control, accepting the increase in capital cost associated with this solution.

For the future employment areas to the north and northwest, a roundabout typically results in better traffic operations during both high and low traffic demand periods and provides a gateway opportunity for the Business Park / Employment Area.



NTS

Figure 69: County Road 46 and Concession Road 8 Intersection Alternative B

NTS

Figure 70: County Road 46 and Concession Road 8 Intersection Alternative C

Table 15: Evaluation of County Road 46 and Concession Road 8 Intersection Evaluation

Criteria	Alternative A Do Nothing	Alternative B Signalized Intersection	Alternative C Roundabout
Future Development	× Does not meet future traffic requirements.	✓ Does meet future traffic requirements.	✓ Does meet future traffic requirements.
Traffic Operations	× Reduced level of service on County Road 46 and Concession Road 8 due to skew angle on Concession Road 8.	× Reduced level of service on County Road 46 and Concession Road 8 due to traffic delays.	✓ • Improves the level of service on County Road 46 and Concession Road 8.
Property Impacts	✓ No property impacts.	× Major property impacts to realign Concession Road 8 to reduce skew.	— Moderate property impacts.
Construction Cost	✓ Least cost.	— Moderate cost.	× Highest cost.
Recommendation	× Not Recommended to be Carried Forward	× Not Recommended to be Carried Forward	✓ **Recommended to be Carried Forward**

Legend: ✓ Good — Neutral/Fair × Poor

4.8.2 County Road 46 and Concession Road 9 Intersection

The following are the intersection alternatives carried forward for the County Road 46 and Concession Road 9 intersection.

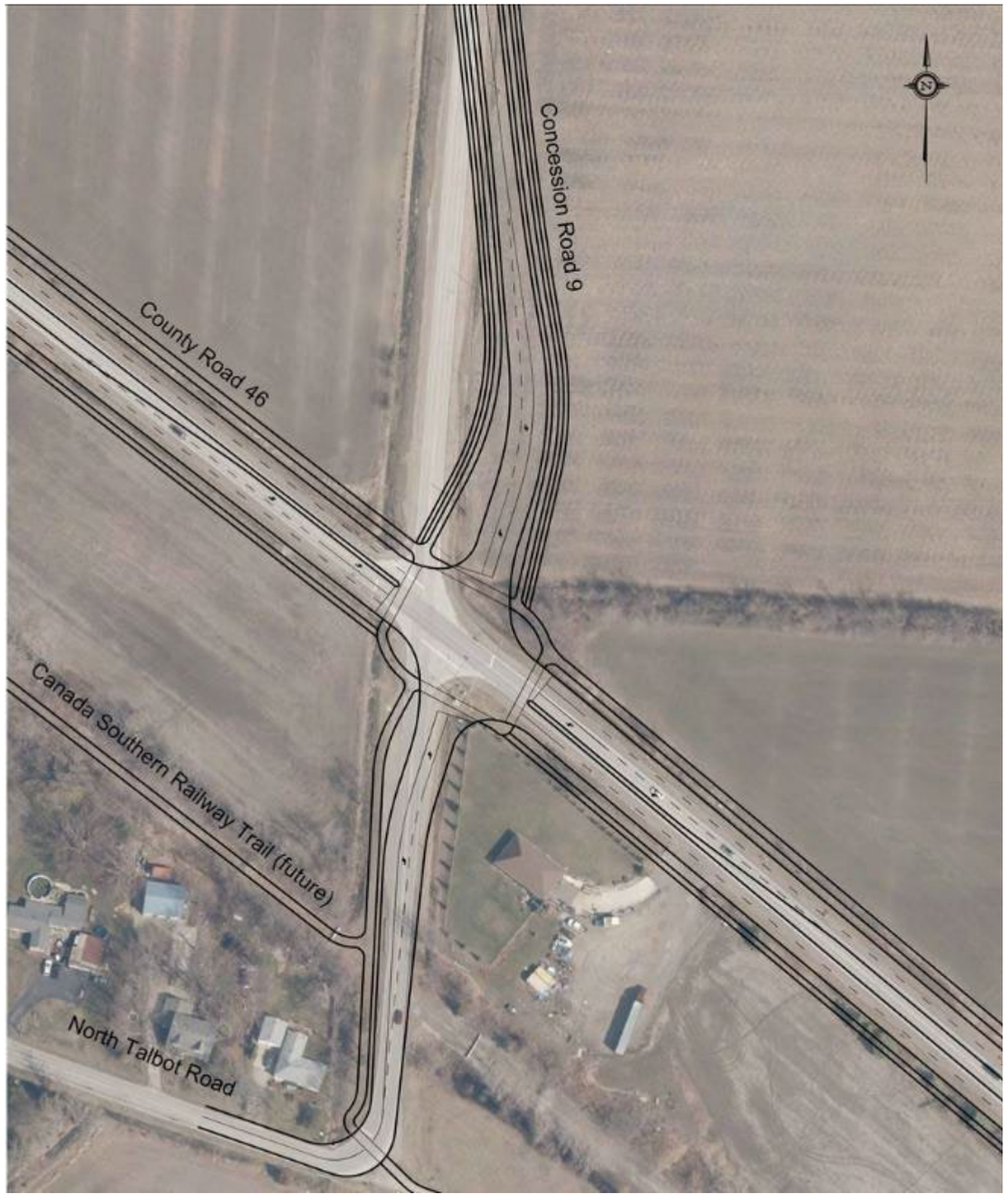
Alternative A – Do Nothing: The existing intersection is signalized with a significant skew on the north and south legs. Disadvantages of this alternative include increased delays to accommodate turning movements; and higher occurrence/severity of collisions based on higher operating speeds and number of conflict points.

Alternative B - Signalized Intersection: Disadvantages of this alternative include increased delays to accommodate turning movements; and higher occurrence/severity of collisions based on higher operating speeds. Refer to **Figure 71**.

Alternative C - Roundabout: Advantages of this alternative include greater level of service, lower long-term costs. For the future employment areas to the north, a roundabout typically results in better traffic operations during both high and low traffic demand periods and provides a gateway opportunity for the Business Park / Employment Area. Refer to **Figure 72**.

Table 16 summarizes the evaluation of the County Road 46 and Concession Road 9 preferred intersection alternatives.

The preliminary recommendation would be to choose roundabout control, accepting the increase in capital cost associated with this solution.



NTS

Figure 71: County Road 46 and Concession Road 9 Intersection Alternative B

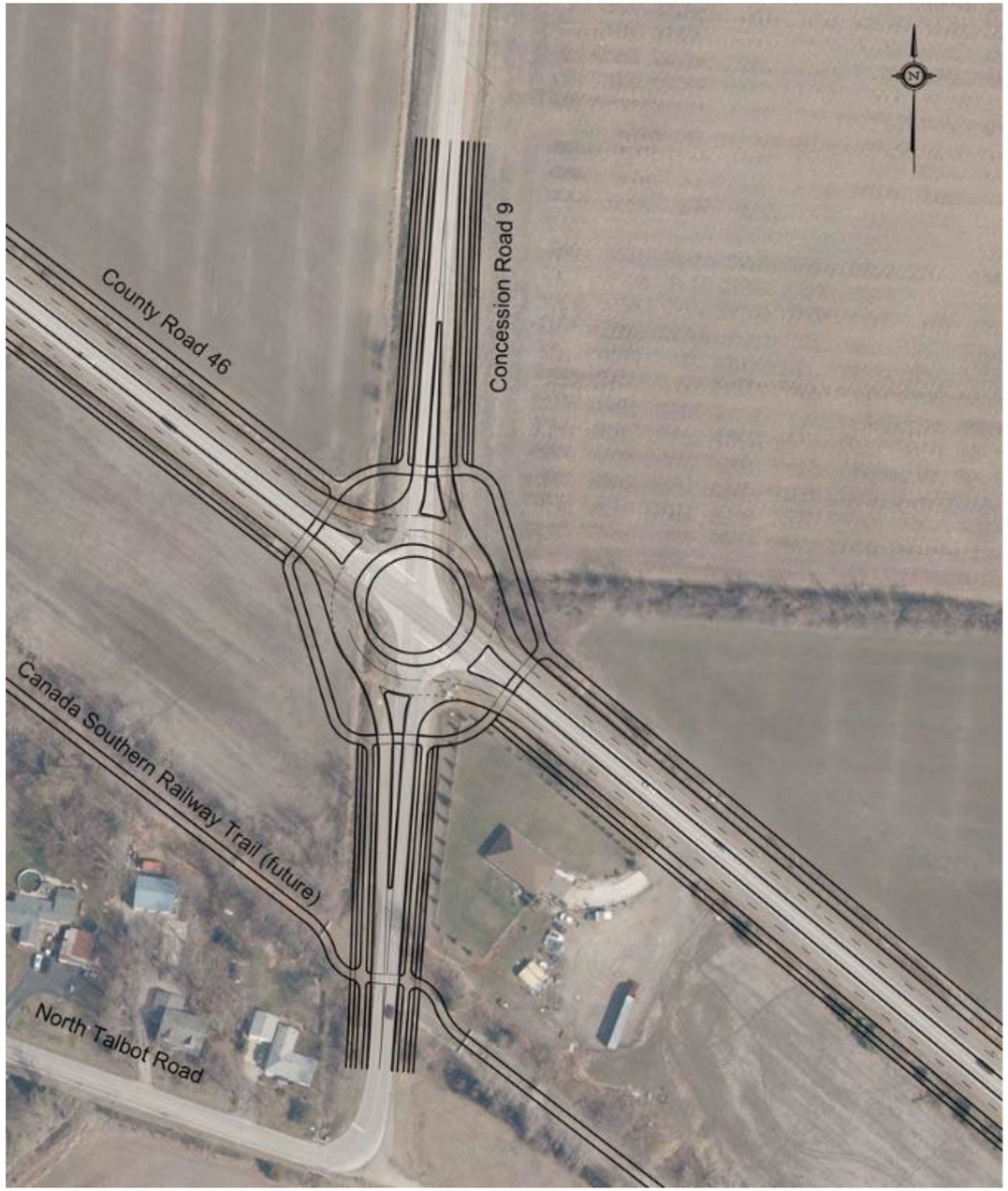


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Figure 72: County Road 46 and Concession Road 9 Intersection Alternative C

Table 16: Evaluation of County Road 46 and Concession Road 9 Intersection Evaluation

Criteria	Alternative A Do Nothing (Retain Unsignalized Intersection)	Alternative B Signalized Intersection	Alternative C Roundabout
Future Development	× Does not meet future traffic requirements.	✓ Does meet future traffic requirements.	✓ Does meet future traffic requirements.
Traffic Operations	× Reduced level of service on County Road 46 and Concession Road 9 due to skew angle on Concession Road 9.	× Reduced level of service on County Road 46 and Concession Road 9 due to traffic delays.	✓ Improves the level of service on County Road 46 and Concession Road 9.
Property Impacts	✓ No property impacts.	× Major property impacts to realign Concession Road 9 to reduce intersection skew.	— Moderate property impacts.
Construction Cost	✓ Least cost.	— Moderate cost.	× Highest cost.
Overall Rating	× Not Recommended to be Carried Forward	× Not Recommended to be Carried Forward	✓ **Recommended to be Carried Forward**

Legend: ✓ Good — Neutral/Fair × Poor

4.8.3 County Road 46 and County Road 17 Intersection

The following are the intersection alternatives carried forward for the County Road 46 and County Road 17 intersection.

Alternative A –Do Nothing (Retain Stop-Controlled Intersection): The existing intersection is a three-way, unsignalized intersection with a minor skew on the north leg. Refer to **Figure 73**.

Alternative B - Roundabout: Disadvantages of this alternative lower level of service due to low traffic volume on County Road 17. Refer to **Figure 74**.

Table 17 summarizes the evaluation of the County Road 46 and County Road 17 preferred intersection alternatives.

The preliminary recommendation is to remain an unsignalized intersection. MTO has confirmed County Road 17 will be closed at Highway 401 and will become a low volume roadway.

NTS

Figure 73: County Road 46 and County Road 17 Intersection Alternative A

NTS

Figure 74: County Road 46 and County Road 17 Intersection Alternative B

Table 17: Evaluation of County Road 46 and County Road 17 Intersection Evaluation

Criteria	Alternative A Do Nothing Stop Control Intersection	Alternative B Roundabout
Future Development	✓ Meets future traffic requirements.	× Exceeds future traffic requirements.
Traffic Operations	✓ Meets required level of service on County Road 46 and County Road 17.	✓ Reduced level of service on County Road 46.
Property Impacts	✓ Minor property impacts.	— Moderate property impacts.
Utility Impacts	— Minor natural gas facility impacts in the northeast quadrant.	× Major natural gas facility impacts in the northeast quadrant.
Construction Cost	✓ Least cost.	— Highest cost.
Overall Rating	✓ **Recommended to be Carried Forward**	× Not recommended to be Carried Forward (County Road 17 will be closed at Highway 401)

Legend: ✓ Good — Neutral/Fair × Poor

4.8.4 County Road 46 and County Road 43

The following are the intersection alternatives carried forward for the County Road 46 and County Road 43 intersection.

Alternative A – Do Nothing (Retain unsignalized Intersection). The existing intersection is a three-way, unsignalized intersection with a minor skew on the north leg. Refer to **Figure 75**.

Alternative B – Roundabout: Disadvantage of this alternative is reduced LOS on County Road 43. Refer to **Figure 76**.

Table 18 summarizes the evaluation of the County Road 46 and County Road 43 preferred intersection alternatives.

The preliminary recommendation would be to choose Stop Control intersection control with protection for signals.

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Figure 75: County Road 46 and County Road 43 Intersection Alternative A

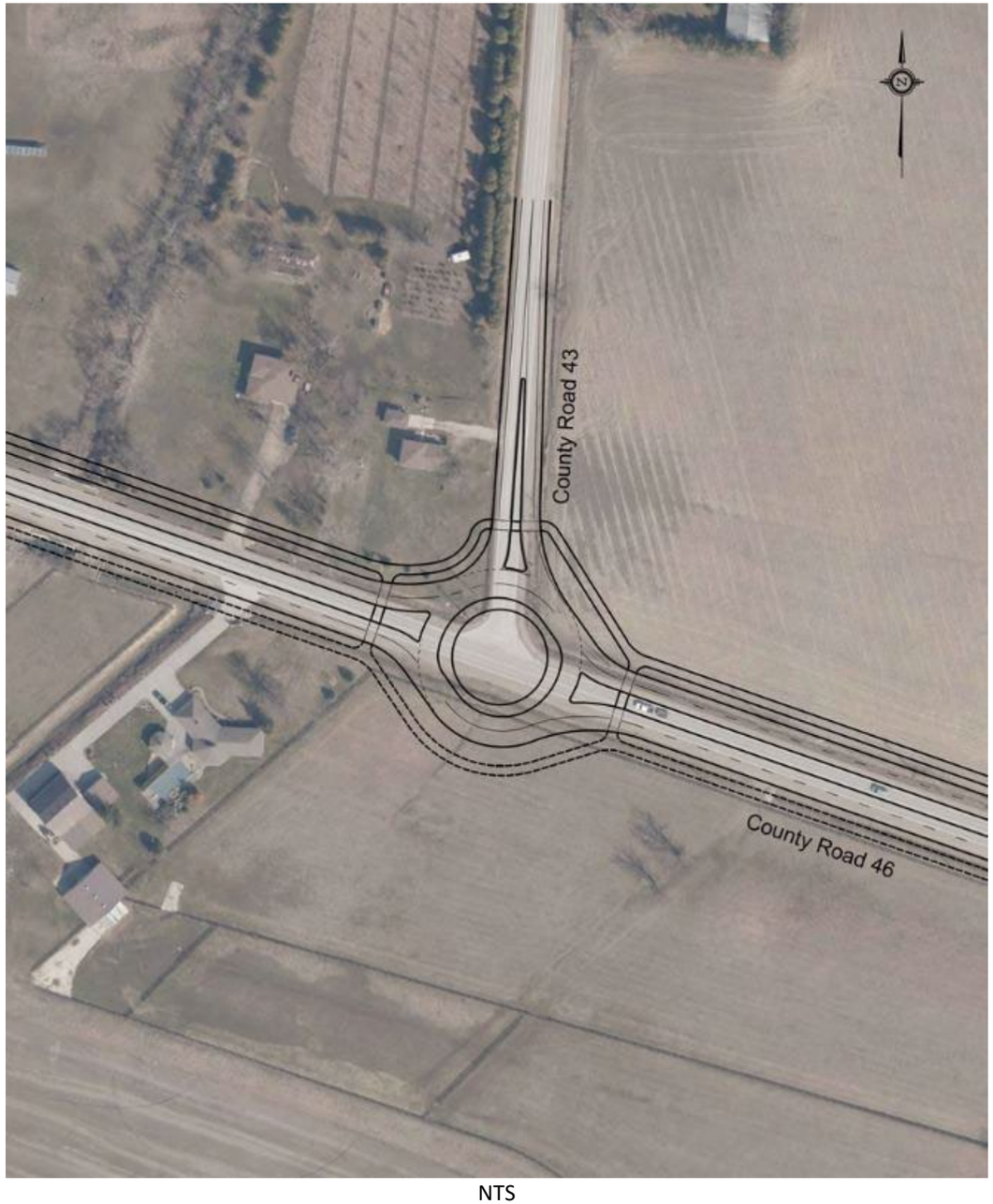

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Figure 76: County Road 46 and County Road 43 Intersection Alternative B

Table 18: Evaluation of County Road 46 and County Road 43 Intersection Evaluation

Criteria	Alternative A Do Nothing (Retain Unsignalized Intersection)	Alternative B Roundabout
Future Development	✓ Meets future traffic requirements.	× Exceeds future traffic requirements.
Traffic Operations	✓ Meets level of service required on County Road 46 and County Road 43.	✓ Reduces level of service on County Road 46 .
Property Impacts	✓ Minor property impacts.	— Moderate property impacts.
Construction Cost	✓ Least cost.	— Highest cost.
Overall Rating	✓ **Recommended to be Carried Forward** With protection for signals	× Not recommended to be Carried Forward

Legend: ✓ Good — Neutral/Fair × Poor

4.8.5 County Road 46 and Concession Road 12

The following are the intersection alternatives carried forward for the County Road 46 and Concession Road 12 intersection.

Alternative A - Do Nothing–Retain Unsignalized Intersection. The existing intersection is a three-way, unsignalized intersection with a minor skew on the north leg. Refer to **Figure 77**.

Alternative B - Roundabout: Advantages of this alternative include consistency with other roundabout controlled intersections. Refer to **Figure 78**.

Table 19 summarizes the evaluation of the County Road 46 and Concession Road 12 preferred intersection alternatives.

The preliminary recommendation would be to choose conventional intersection control.

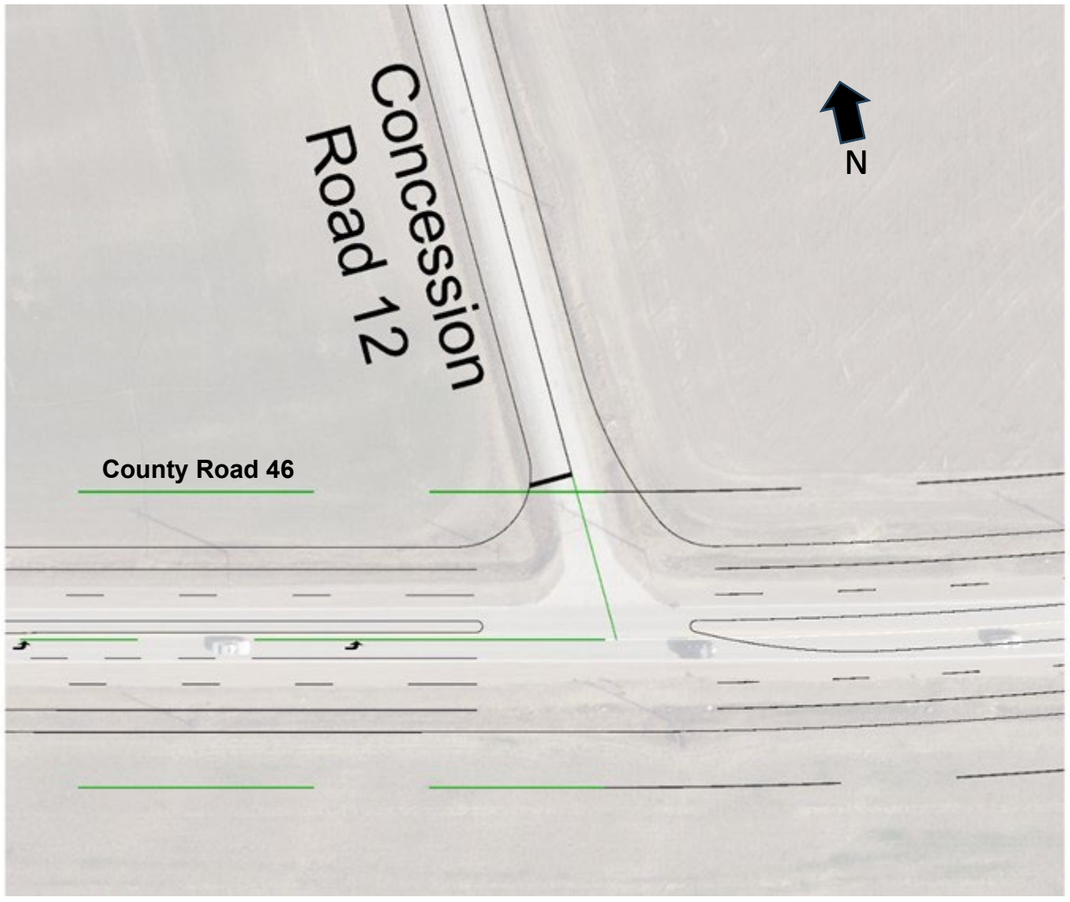

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Figure 77: County Road 46 and Concession Road 12 Intersection Alternative A

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Figure 78: County Road 46 and Concession Road 12 Intersection Alternative B

Table 19: Evaluation of County Road 46 and Concession Road 12 Intersection Evaluation

Criteria	Alternative A Retain Unsignalized Intersection	Alternative B Roundabout
Future Development	✓ Meets future traffic requirements.	× Exceeds future traffic requirements.
Traffic Operations	✓ Meets required level of service on County Road 46 and Concession Road 12.	✓ Exceeds the level of service on County Road 46 and Concession Road 12.
Property Impacts	✓ Minor property impacts.	— Moderate property impacts.
Construction Cost	✓ Least cost.	— Highest cost.
Overall Rating	✓ **Recommended to be Carried Forward**	× Not recommended to be Carried Forward

Legend: ✓ Good — Neutral/Fair × Poor

4.8.6 Summary of Preliminary Intersection Recommendations

The preliminary recommendation for Concession Roads 8 and 9 would be to choose roundabout control, accepting the minor increase in capital cost associated with this solution. For the future employment areas in the northwest quadrant of the Study Area, a roundabout typically has better operations during both high and low traffic demand periods and provides the opportunity for a gateway treatment.

Unsignalized intersections are recommended for County Roads 17 and 43 and Concession Road 12.

4.9 Previous Intersection EA Recommendations

Lauzon Parkway Intersection

In January 2014 the Lauzon Parkway Improvement Class ESR was filed for public review and documented the Recommended Plan for the Lauzon Parkway Extension. The recommended intersection provides signalized traffic control with provision for a Multi Use Path on the west side.

County Road 19 and CR 46 Intersection

The Recommended Plan included widening County Road 19 from two to four lanes with a signalized intersection at County Road 46. Refer to **Figure 79**. The County Road 46 intersection was designed to accommodate the future four lane section on County Road 46 west of County Road 19. This intersection was designed to accommodate the turning movement of a WB-17.5 tractor-semitrailer combination.

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Figure 79: County Road 19 and County Road 46 Intersection

5.0 RECOMMENDED PLAN

Following PCC No.3, the TPA was subject to refinements based on community input as described in **Section 2.5**. The TPP is shown on **Figure 83** to **Figure 85** for County Road 46 and **Figure 88** and **Figure 89** for Concession Roads 8 and 9, County Road 43, County Road 17 and Lauzon Parkway**.**

The County Road 46 Recommended Plan includes:

- 40 m ROW;
- Meandering alignment (either side of centreline as required) to avoid constraints;
- 4-lane urban cross section within Oldcastle (Highway 401 to Concession Road 9) with sidewalk on the southside. Cyclists to use a Multi Use Path on the northside or the Canadian Southern Railway Trail south of County Road 46, refer to **Figure 80**;
- A 4-lane rural cross section between Concession Road 9 and County Road 19 to accommodate large agricultural vehicles, refer to **Figure 81** and **Figure 82.** The rural cross-section will have 2 m paved shoulders to accommodate cyclists;
- 1.8 m sidewalk between Highway 401 and the future Lauzon Parkway. The sidewalk is located on the southside between Highway 401 and Concession Road 9 and the northside from Concession Road 9 to Lauzon Parkway;
- Stormwater management ponds (locations and size not finalized);
- Roundabouts at Concession Road 8 and 9 intersections;
- Unsignalized intersections at County Road 17 and 43 and Concession Road 12;
- Municipal drains located within the ROW except the Washbrook Drain is proposed to be relocated to the County Road 46 and Concession Road 9 ROW; and
- Previously approved signalized intersections at the future Lauzon Parkway and County Road 19 (Manning Road).

The Concession Roads 8 and 9 Recommended Plans include:

- 36 m ROW;
- Widening equally from centreline
- 2-lane semi-urban cross section, refer to **Figure 86** and **Figure 87**;
- 2 metre paved shoulder on the west side and a 3 m MUP on the east side to accommodate cyclists and pedestrians;
- No change to Municipal drains and they will be located within the ROW;
- Conceptual stormwater management ponds; and
- Roundabouts at County Road 46 intersections.

STATEMENT OF FLEXIBILITY

The Recommended Plan contains key features with flexibility for refinements during detail design including:

- The location and sizing of stormwater management ponds to be determined in detail design;
- Allow sidewalk or MUP on either the north or south side (or both) of the ROW; and
- Possibility of realigning the Washbrook Drain to Concession Road 9 Municipal Drain.

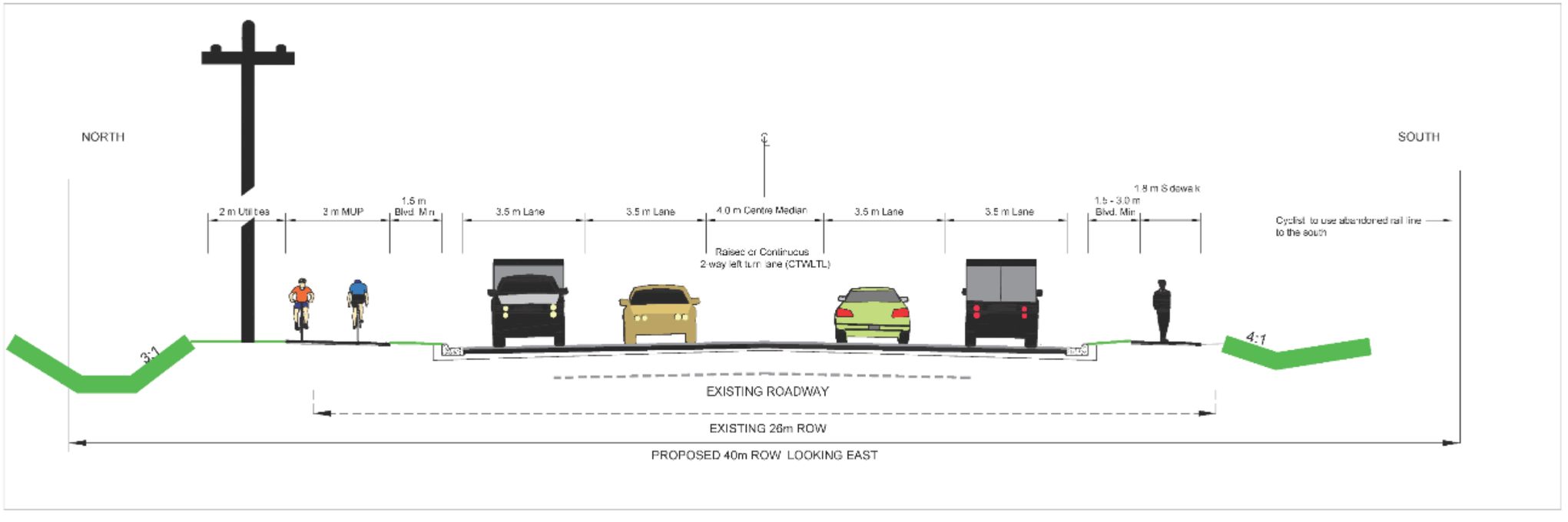

Figure 80: Section 1 and 2 (Highway 401 to Concession Road 9) Recommended Cross Section

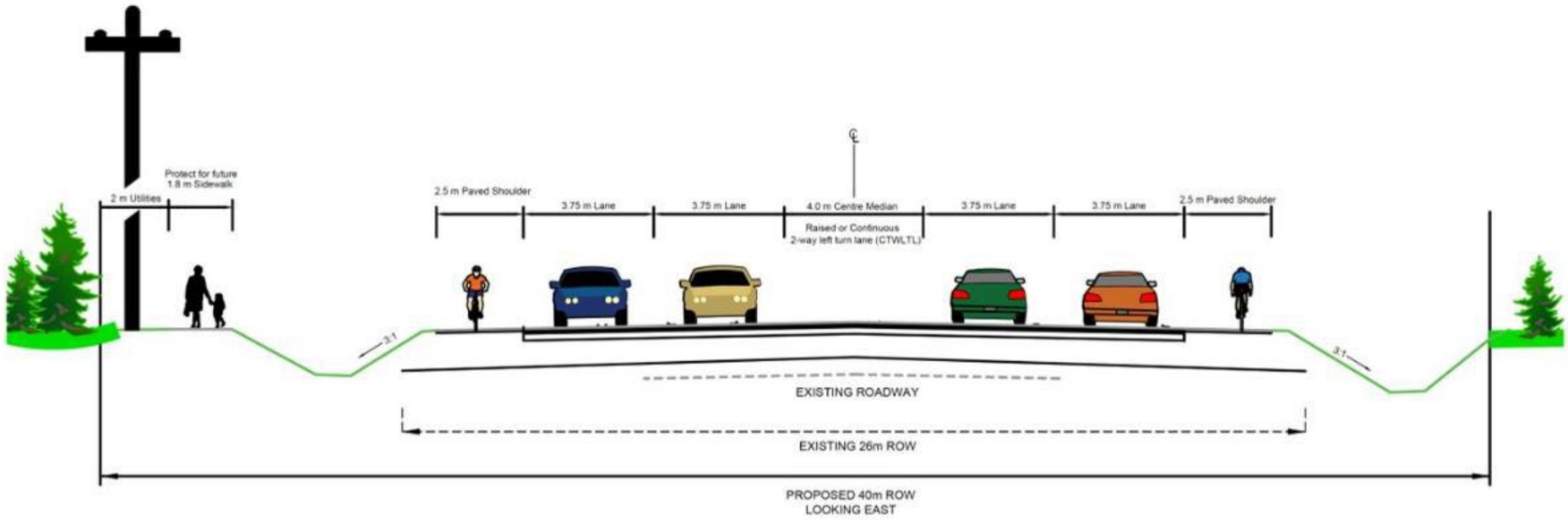

Figure 81: Section 2 (Concession Road 9 easterly) Recommended Cross Section

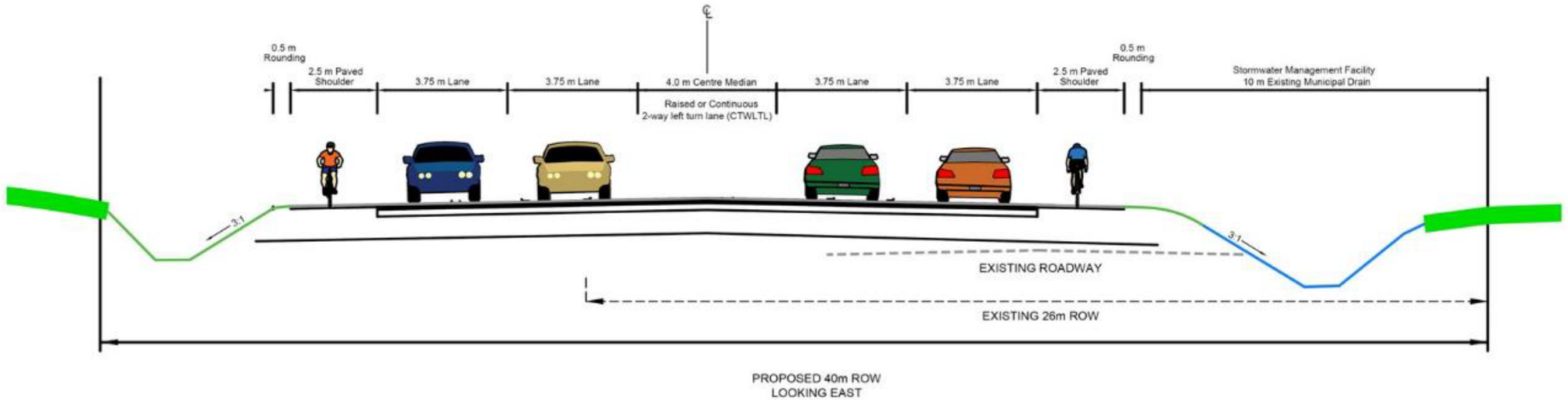

Figure 82: Section 3 Recommended Cross Section

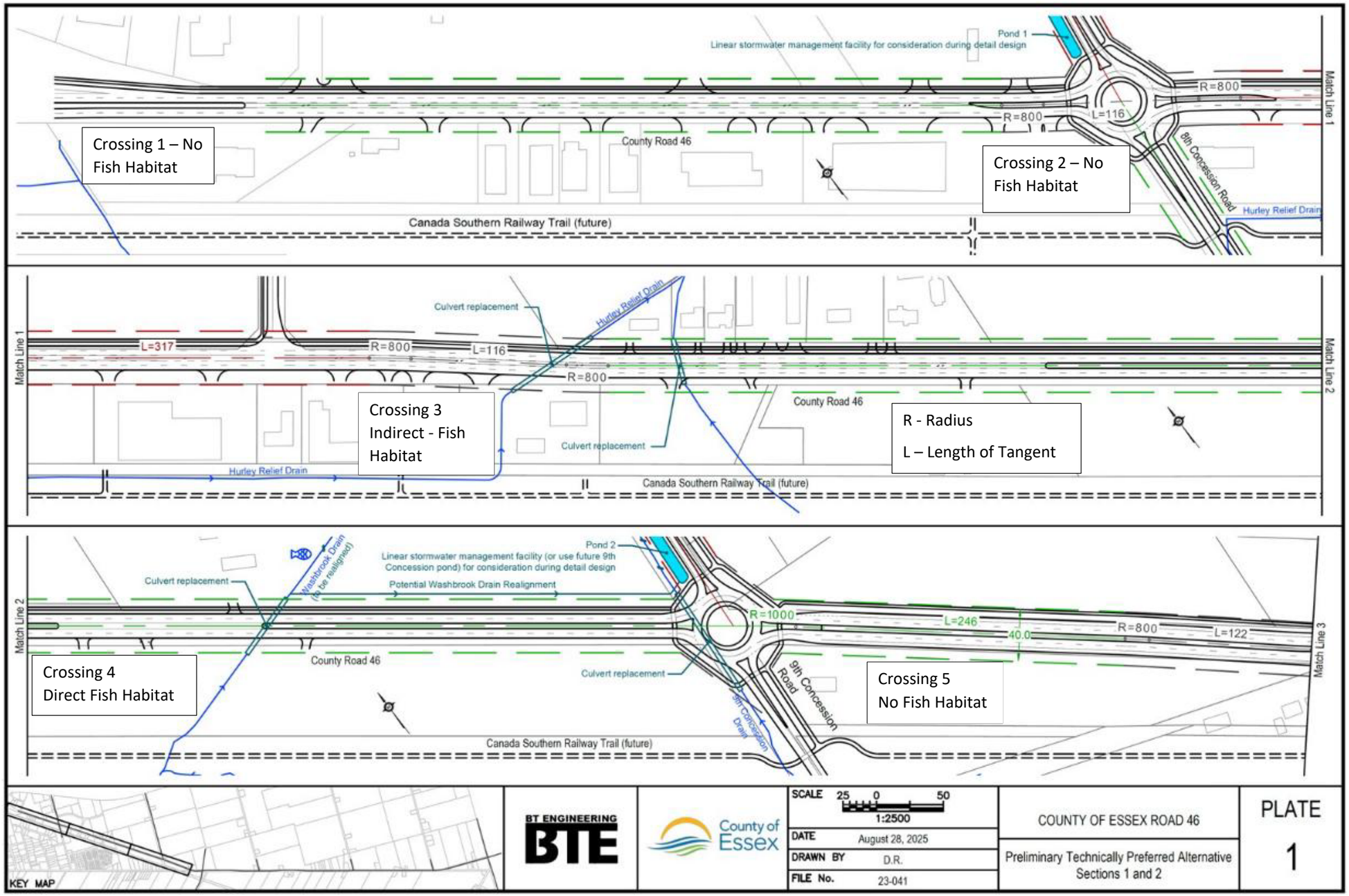

Figure 83: County Road 46 Recommended Plan Section 1 and 2

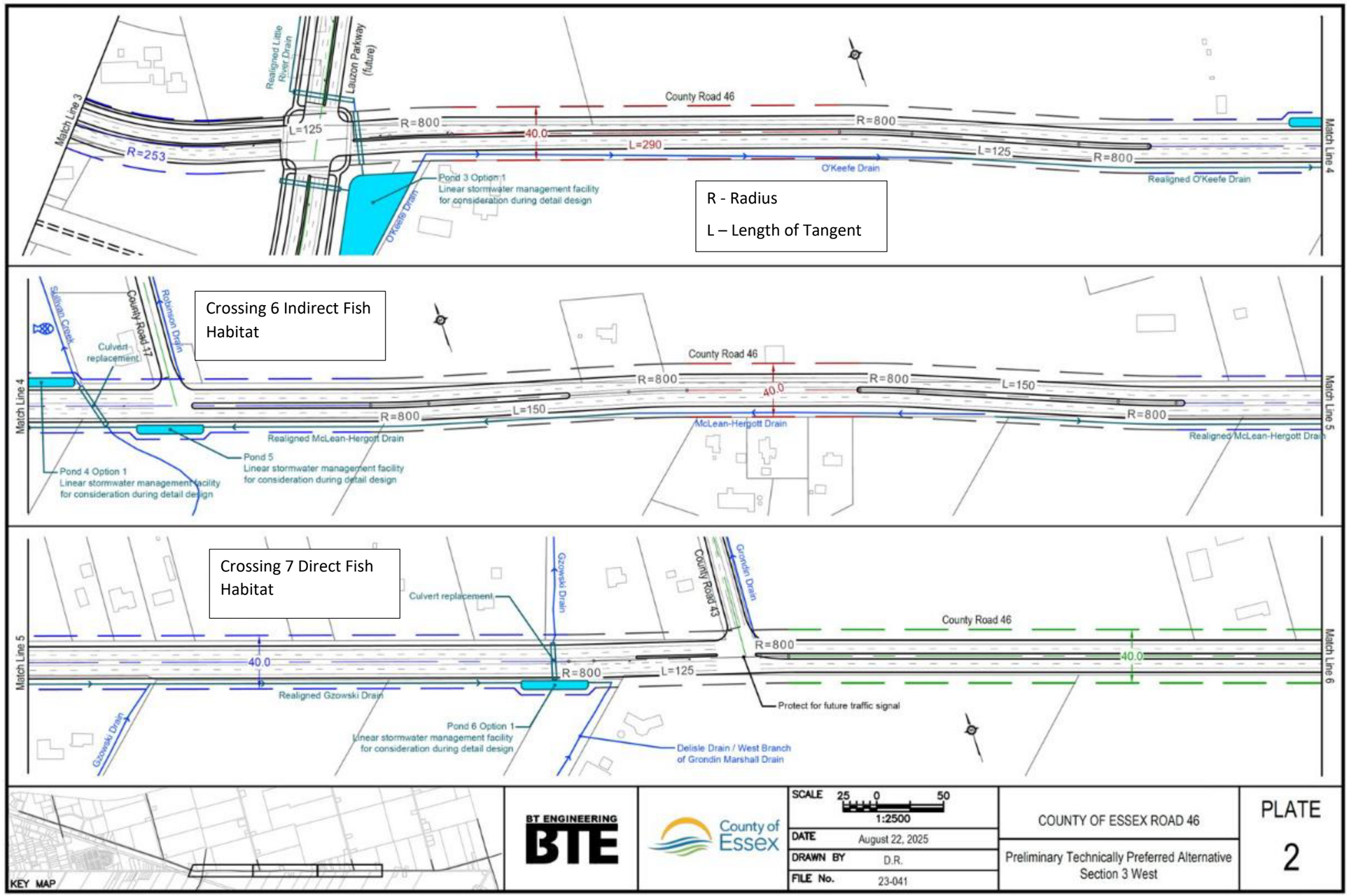

Figure 84: County Road 46 –Section 3 West Recommended Plan

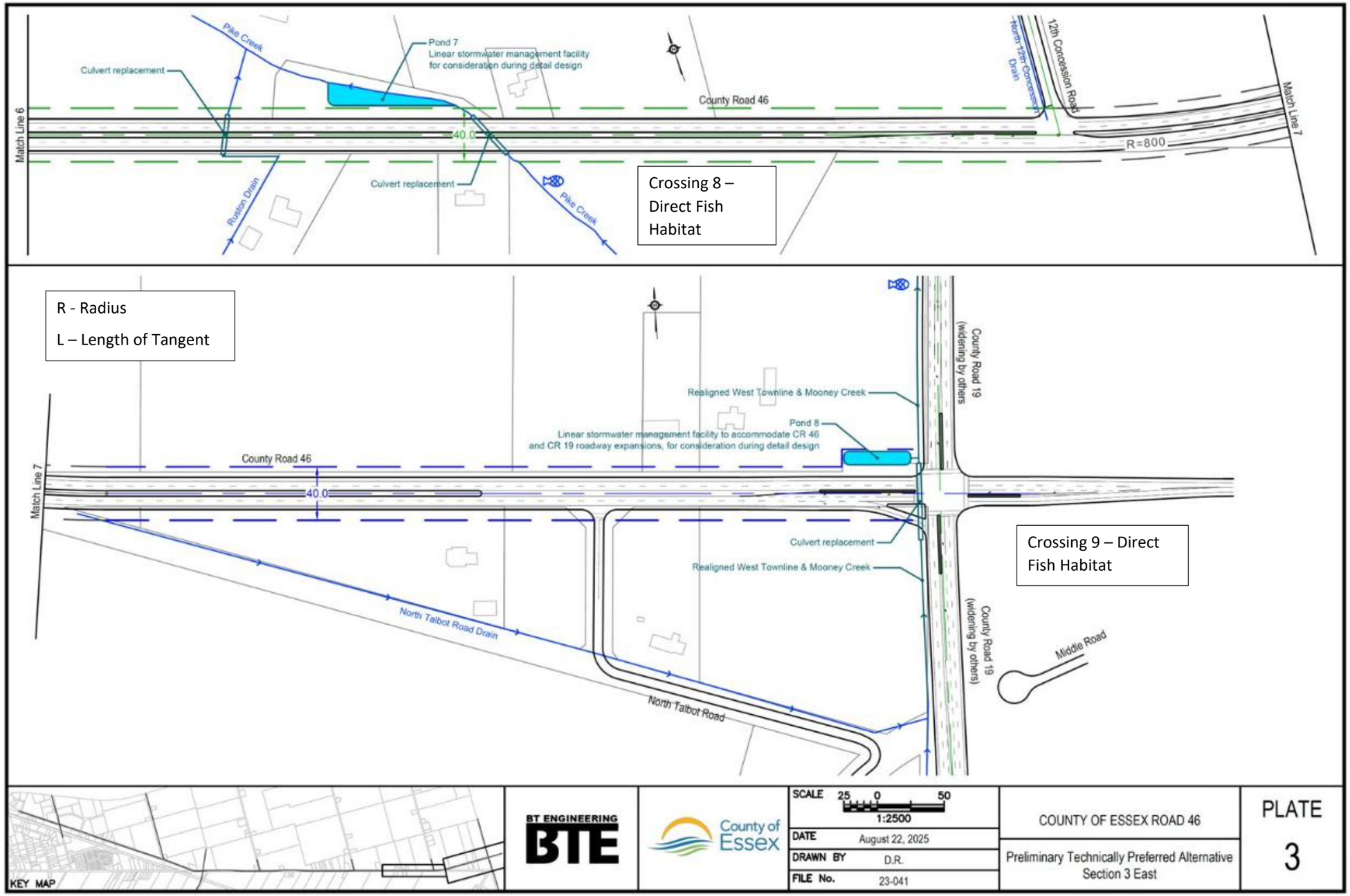

Figure 85: County Road 46 – Section 3 East Recommended Plan

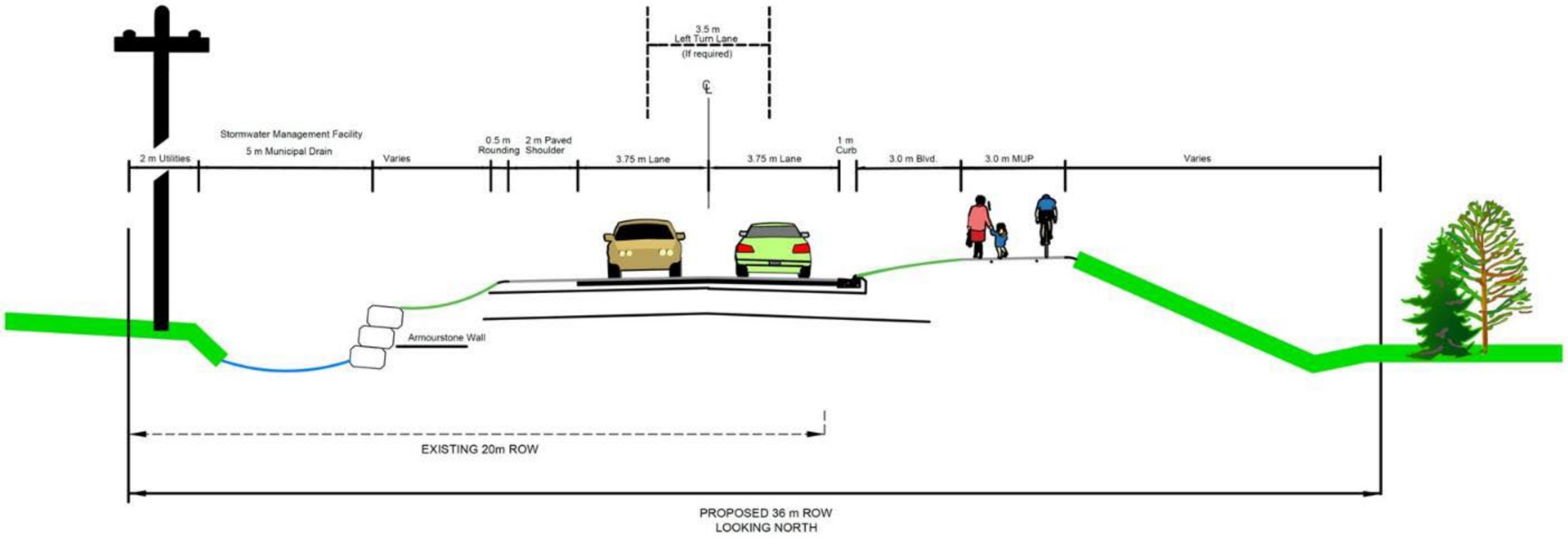

Figure 86: Concession Road 8 Recommended Cross Section

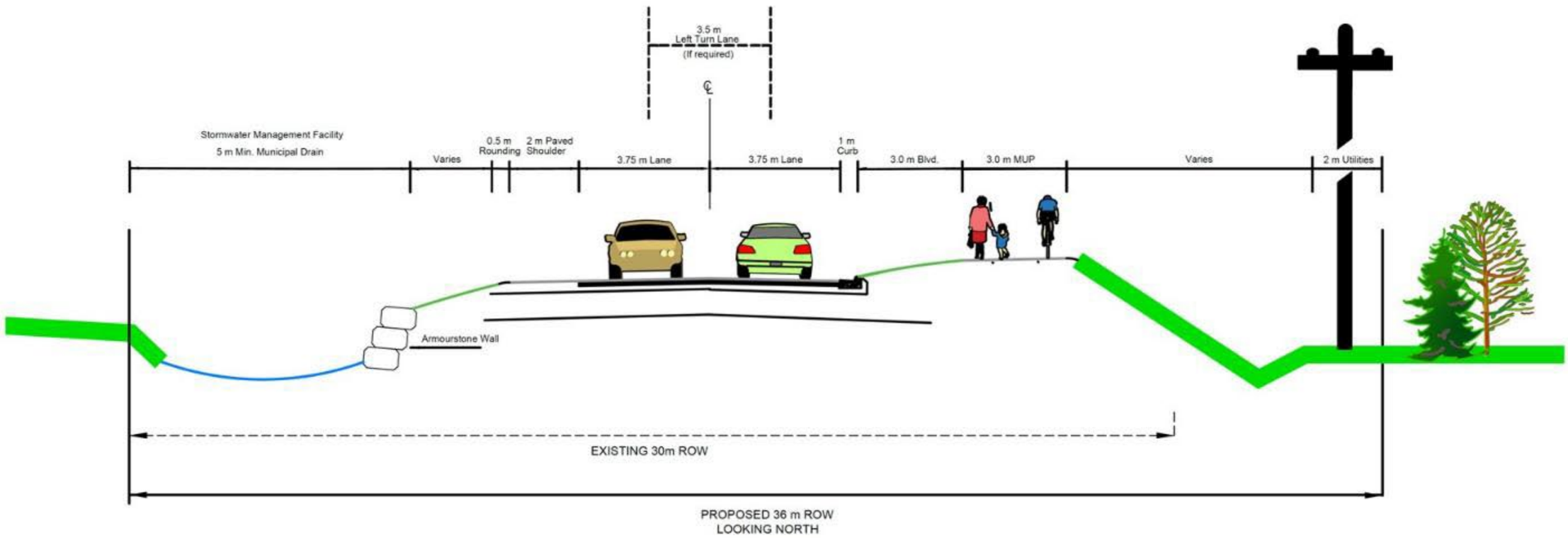

Figure 87: Concession Road 9 Recommended Cross Section

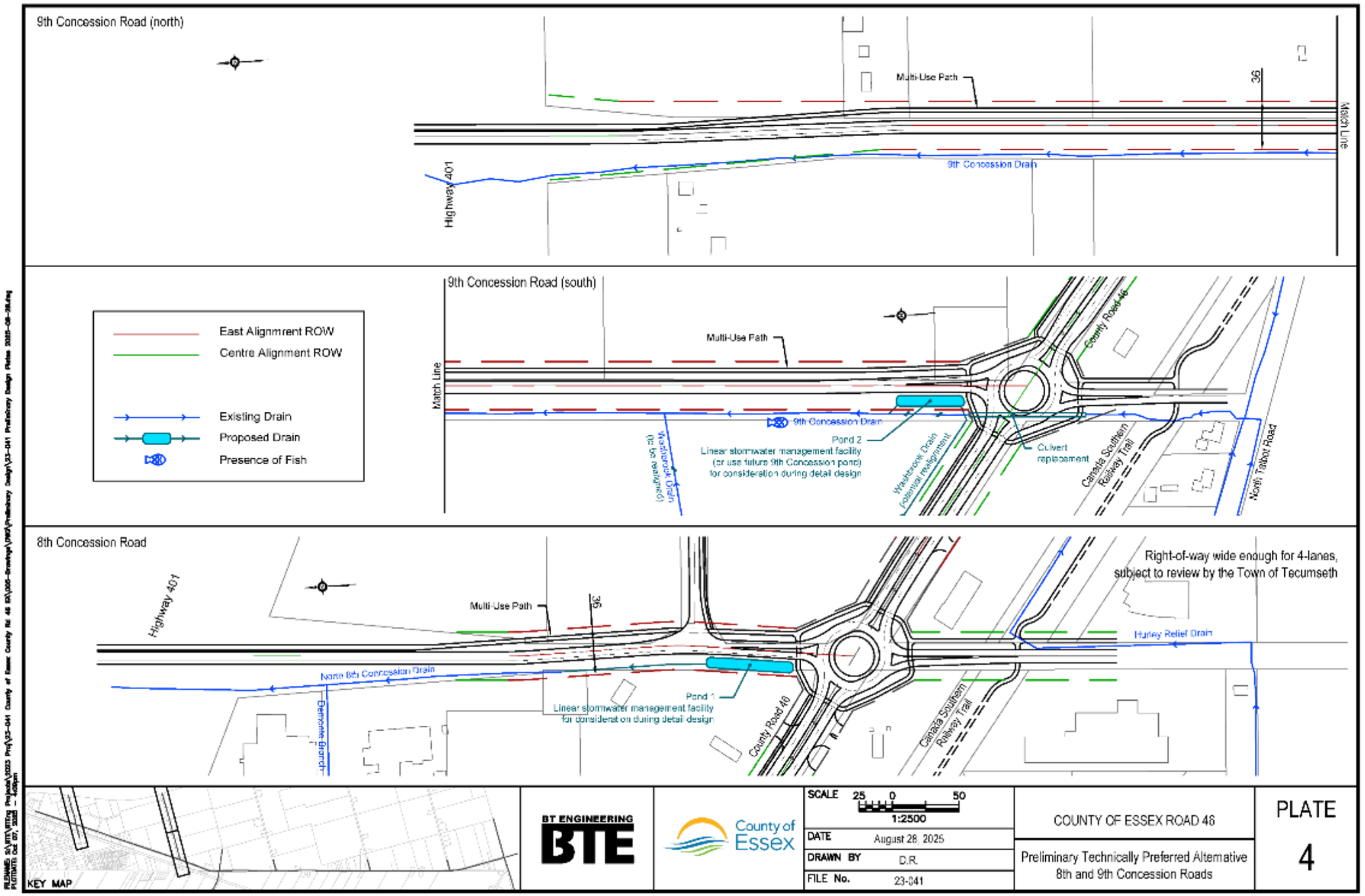

Figure 88: Concession Road 8 and 9 Recommended Plan

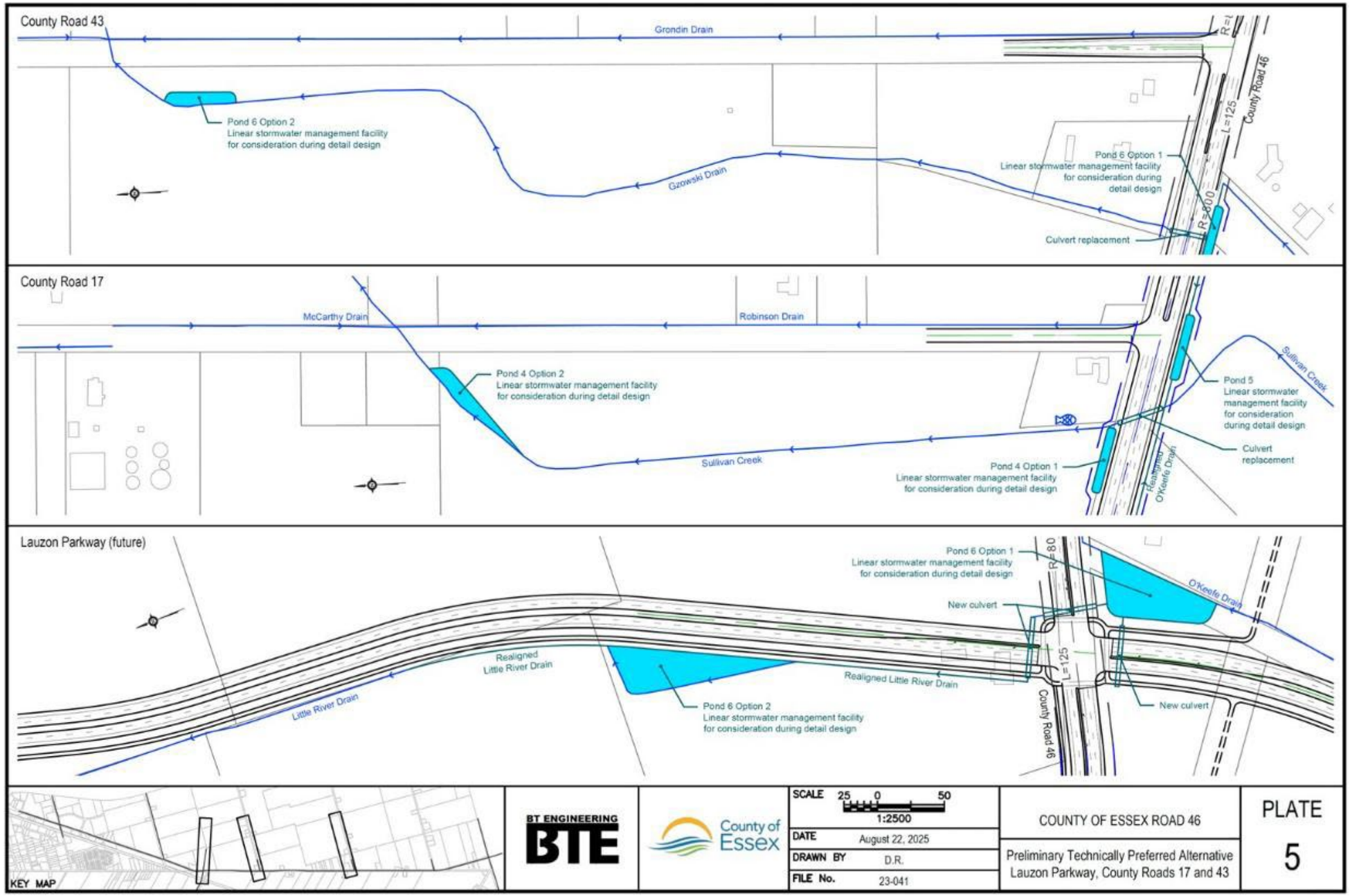

Figure 89: County Road 43, County Road 17 and Lauzon Parkway Recommended Plan

6.0 RECOMMENDED PLAN EFFECTS, MITIGATION MEASURES AND FUTURE RECOMMENDATIONS

6.1 Endorsement of the Recommended Plan

The Recommended Plan was presented to Councils where it was endorsed on October 14 and 15, 2025. The resolution is included in **Appendix L**. The final Recommended Plan plates are shown in detail in **Appendix M**.

6.2 Statement of Flexibility

The Recommended Plan contains key features with flexibility for refinements during detail design including:

- The location and sizing of stormwater management ponds to be determined in detail design;
- Allow sidewalk or MUP on either the north or south side (or both) of the ROW; and
- Possibility of realigning the Washbrook Drain to Concession Road 9 Municipal Drain.

6.3 Effects and Mitigation

The effects on the environment were considered in accordance with the MCEA process and are described below. This ESR highlights several factors that will need to be considered during detailed design and project implementation. This will include impacts to private property, archaeological artifacts, excessive noise during construction, management of excess soils, species at risk, utilities, vegetation, lighting, drainage, natural gas and groundwater monitoring wells. All these factors will be considered, and mitigated as required, throughout the course of detailed design and project implementation.

The following sections provide a description of the effects and mitigation proposed with the Recommended Plan.

6.3.1 Natural Environment

6.3.1.1 Groundwater

Protection of decommissioned and abandoned wells and septic systems from property acquisition, as per Ontario Water Regulations. Obtain Permit to Take Water.

6.3.1.2 Erosion and Sedimentation Control

Erosion and sedimentation controls will be required within the ROW.

Erosion and sedimentation controls (ESC) and standard Best Management Practices (BMP) should be used around the watercourses to prevent encroachment and the transfer of deleterious substances into the direct or indirect aquatic habitat prior to construction works. The project is not anticipated to result in significant impacts on erosion and sedimentation. The effective management of erosion and sedimentation will protect aquatic systems and the adjacent wetlands adjacent to the site.

6.3.2 Fish and Fish Habitat

Field work was conducted on September 12, 2025, to inventory the fish species present at each of the nine watercourse crossings identified during the site reconnaissance of November 17, 2023. Fish habitat characteristics were identified, along with an inventory of the riparian vegetation found along the watercourse at each location. Refer to **Figure 90** to **Figure 92** for the location of fish and fish habitat. The fish inventory progressed from west to east along County Road 46, with inventories at all major culvert crossings and where municipal drains are adjacent to proposed roadway widening from two to four lanes. Crossing #2 on Concession 8 was assessed as a watercourse due to its proximity to County Road 46 and as it coincides with a planned linear stormwater management facility.

Crossing #1

Location: 50 m North of the intersection of the ramp to Highway 401.
GPS Coordinates: 42° 14’ 46.21: N / 82° 57’ 22.34” W
Species at Risk Map Check: No Species at Risk (SAR) identified at this location
Tributary of: Little River
Municipal Drain Name: 7th Concession Drain
Fish Species Captured: No Catch – 1 crayfish
Fish Habitat Designation: Not Direct Fish Habitat
Expected Impact from Preliminary Design: No significant changes. Already four lanes.
Mitigation Requirements: Department of Fisheries and Oceans Canada (DFO) protocols; basic sediment and erosion control, fish screens if pumping.
Notes: Immediately downstream of the Highway 401 offramp stormwater management pond. No persistent water flow.

Crossing #2

Location: Ditch on west side of Concession 8, South of the Highway 401 overpass.
GPS Coordinates: 42° 14’ 29.75 “N / 82° 56’ 49.55” W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Little River
Municipal Drain Name: 8th Concession Drain
Fish Species Captured: No Catch
Fish Habitat Designation: Not Fish Habitat
Expected Impact from Preliminary Design: New linear Stormwater Management (SWM) Pond #1 on northwest corner of intersection.
Mitigation Requirements: DFO protocols; Basic sediment and erosion control, fish screens if pumping and fish are observed.
Notes: Dry ditch colonized by grasses and Phragmites. No trees or shrubs providing shade. Unlikely to provide fish habitat at any time of the year.

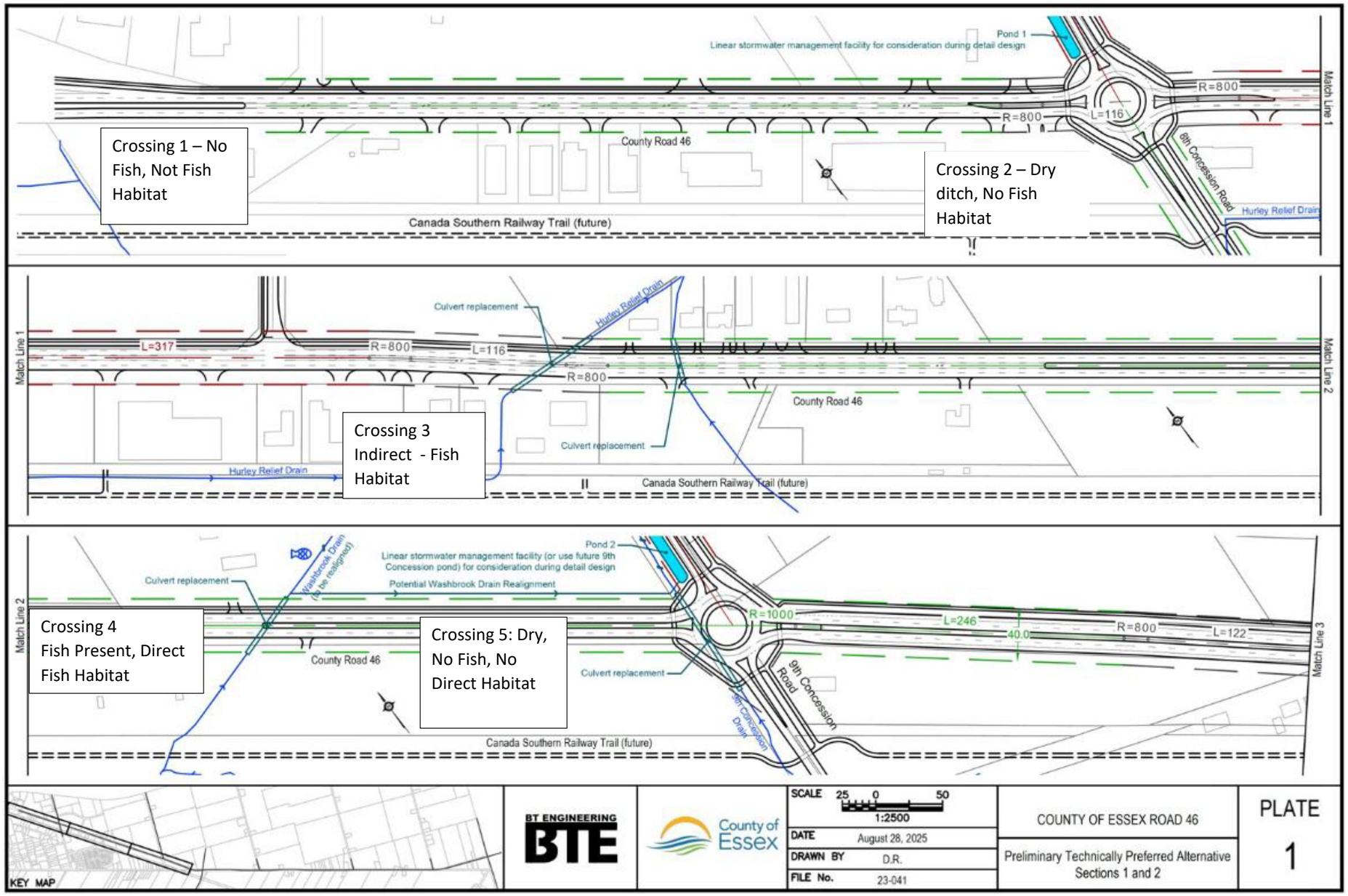

Figure 90: County Road 46 Recommended Plan Section 1 and 2 and Fisheries Locations

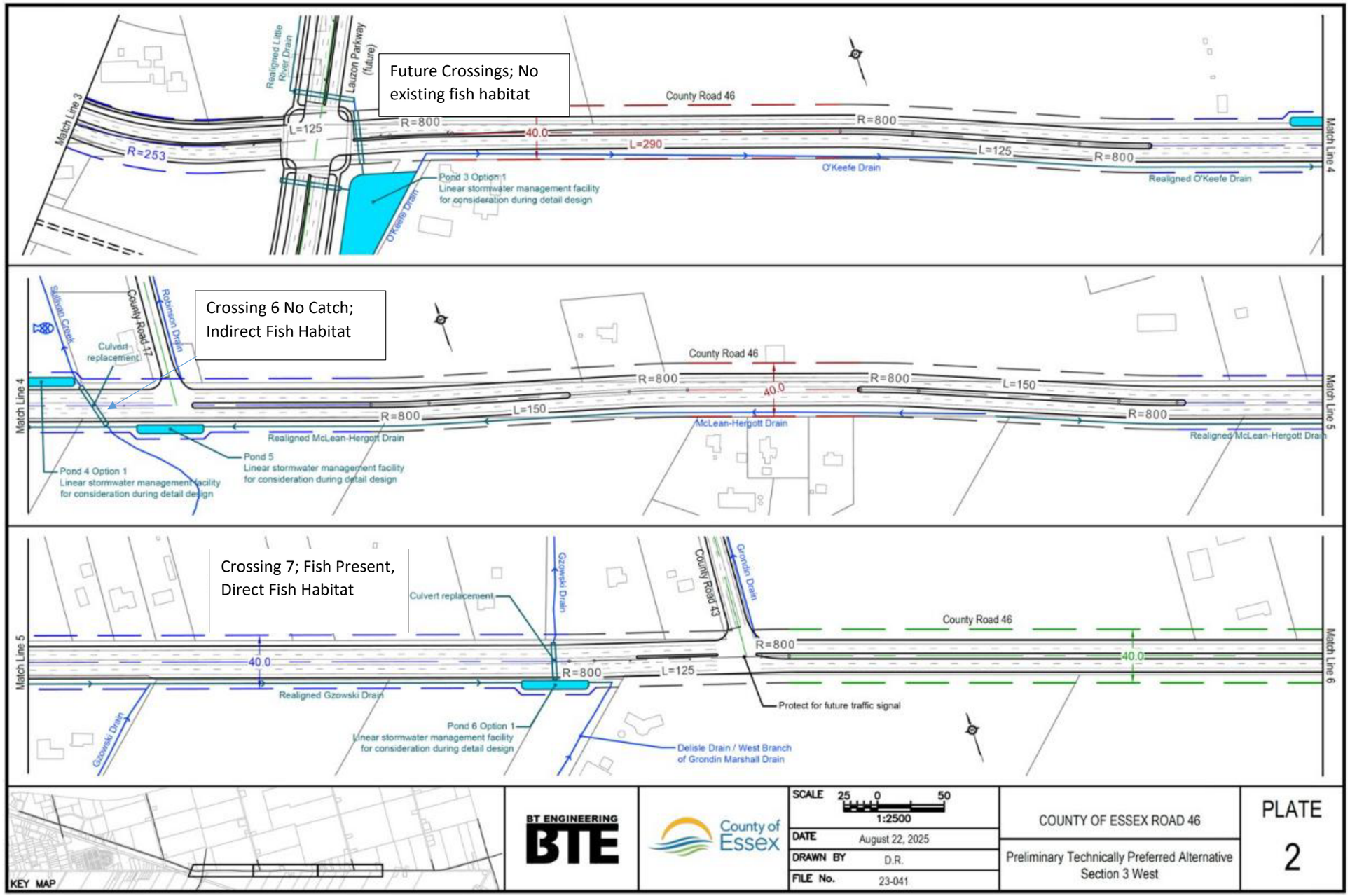

Figure 91: County Road 46 –Section 3 West Recommended Plan and Fisheries Locations

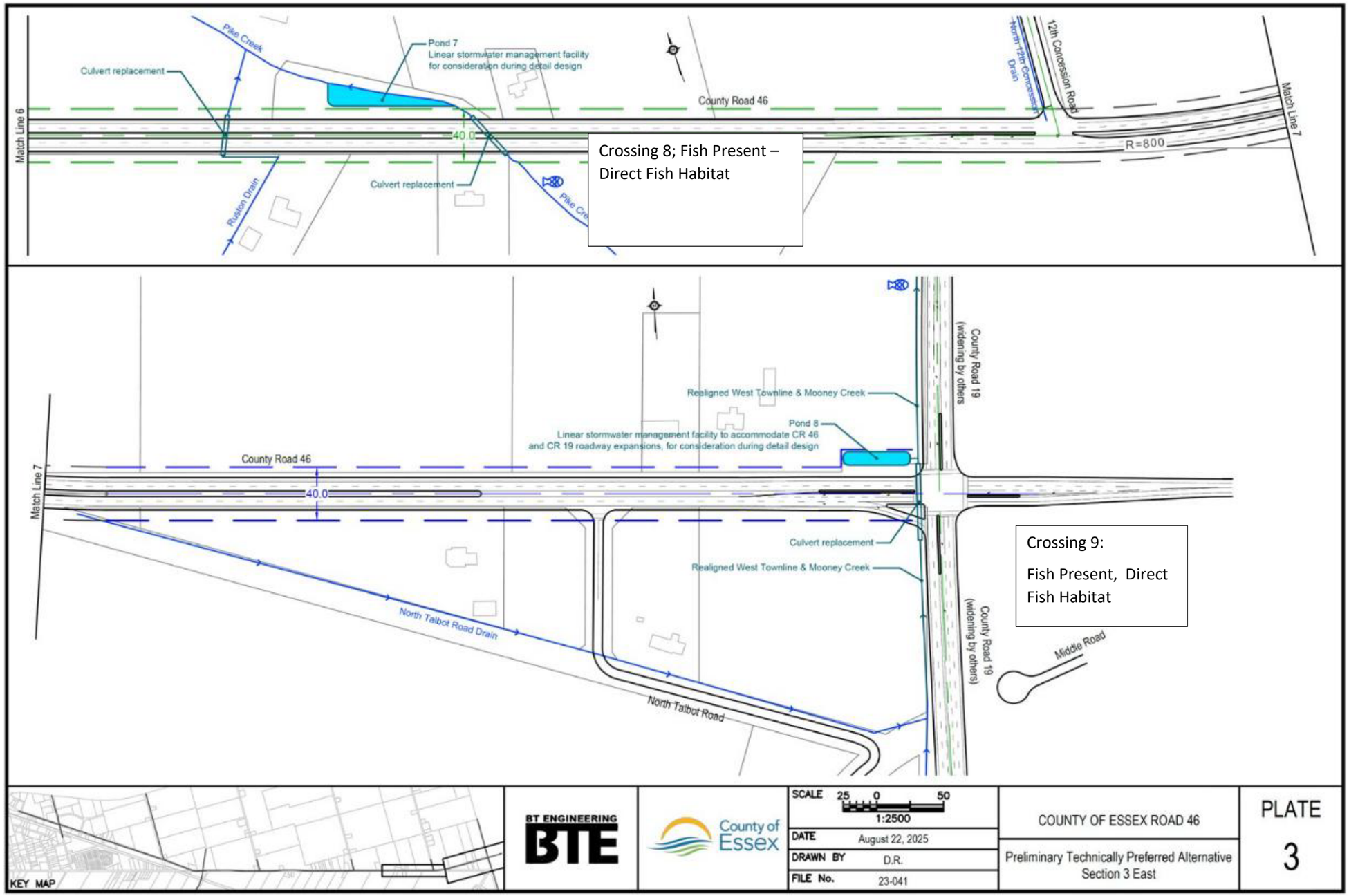

Figure 92: County Road 46 – Section 3 East Recommended Plan and Fisheries Locations

Crossing #3

Location: 563 m southeast of Concession 8 / County Road 46 intersection.
GPS Coordinates: 42° 14' 18.59" N / 82° 56' 29.59" W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Little River
Municipal Drain Name: Hurley Drain; Hurley Relief Drain
Fish Species Captured: No catch because could not electrofish in dense Phragmites.
Fish Habitat Designation: Indirect Fish Habitat outside of the ROW
Expected Impact from Preliminary Design: Culvert Replacement.
Mitigation Requirements: DFO protocols; Basic sediment and erosion control, fish screens if pumping and fish salvage if fish are observed during construction.
Notes: Trickle of water through large Phragmites colony. Unable to complete electrofishing due to high plant density. Box culvert approx. 2.4 X 1.2 m high. North of the ROW the creek flows through a large woodlot. Within the ROW there are a few isolated shrubs or trees that may be impacted. Because the flow originates in the woodlot, the creek may provide indirect fish habitat resources such and food and nutrients to downstream fish populations – but not immediately within the ROW due to the dense Phragmites colony.

Crossing #4

Location: 340 m Northwest of the intersection of County Road 46 with Concession 9.
GPS Coordinates:42° 14' 04.11" N / 82° 56' 03.91" W
Species at Risk Map Check: No fish SAR identified at this location. Red mulberry (SARA Schedule 1 – Endangered; Ontario - Endangered).
Note: One red mulberry shrub was found on the south side of the road, west side of the watercourse at the top of slope lying within the ROW and has the potential to be impacted by the planned culvert replacement – this observation, identified through the app Plant Net™ should be confirmed by a qualified terrestrial ecologist before a species at risk mitigation strategy is determined.
Tributary of: Little River
Municipal Drain Name: Washbrook Drain
Fish Species Captured: Brook Stickleback (4), Channel Darter (1), Crayfish (1) – all warmwater species
Fish Habitat Designation: Direct Fish Habitat.
Expected Impact from Preliminary Design: Culvert replacement on Washbrook Drain. Potential realignment of Washbrook Drain on north side of County Road 46.
Mitigation Requirements: Enhanced DFO protocols to be determined during detail design; Detailed sediment and erosion control, use of rolled blankets following earthworks, fish screens if pumping and fish salvage when water is present during construction. Provincial warmwater fish timing guidelines to be followed or as directed by DFO.
Notes: Washbrook Drain is a stone-lined watercourse that intersects County Road 46 on a skew. Several shrubs and trees shade the watercourse on the north side, while the south side is an open canopy. Ditches flow from agricultural lands into the drain from two directions on each side of County Rd 46. Small grove of young Black Walnut trees located 100 m south of culvert outside of ROW, with at least two trees on the north side of the ditch that are close to the road, but unlikely to be impacted by the road improvements.

Crossing #5

Location: Traverse culvert under County Road 46, 10 m northwest of the Concession 9 intersection.
GPS Coordinates: 42° 13' 57.83" N / 82° 55' 52.60" W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Little River
Municipal Drain Name: 9th Concession Drain
Fish Species Captured: No captures.
Fish Habitat Designation: Dry watercourse – no Direct Fish Habitat.
Expected Impact from Preliminary Design: New linear Stormwater Management (SWM) Pond #2 on northwest corner of intersection. Culvert replacement, relocation of 9th Concession Drain west to bypass pond and continue south to rail line.
Mitigation Requirements: DFO protocols; Basic sediment and erosion control, fish screens if pumping.
Notes: Small drainage catchment arising in soybean field to the southwest. Very low vegetative diversity in the channel, predominantly *Phragmites*, Goldenrod, Scotch thistle, grasses, Riverbank grape – typical dry plant assemblage. Periodically flows under culvert to the northeast. No flow present and no pools of water remain after last precipitation event. No catch result.

Crossing #6

Location: 65 m Northwest of the intersection of County Road 46 with Concession 11 / County Road 17.
GPS Coordinates: 42° 13' 38.40" N / 82° 54' 56.73" W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Pike Creek
Municipal Drain Name: Little River Drain (North), O'Keefe Drain (South), Sullivan Drain (West)
Fish Species Captured: No Catch; Shallow water, electrofishing attempted.
Fish Habitat Designation: Indirect fish habitat.
Future Lauzon Parkway Intersection at GPS Coordinates: 42° 13'46.09" N / 82° 55' 28.38" W

Expected Impact from Lauzon Parkway Pre Design: Realign Little River Drain. Place three culverts. New linear SWM Pond #3 on SW corner of the intersection. Realign O'Keefe Drain east to County Road 17. No direct fish habitats were found here.
Expected Impact from County Road 46 Preliminary Design: Replace Sullivan Drain culvert, New SWM Pond #4 on north side, New SWM Pond #5 on south side to intercept McLean Hergott Drain, Partial realignment of McLean Hergott Drain.
Mitigation Requirements: DFO protocols; Basic sediment and erosion control, fish screens if pumping.
Notes: Small trickle of flow south to north, but not enough water to electrofish. Double elliptical culvert pipes in good condition. Two hedgerows seem to contribute flow and resources, coming together west of the road within the ROW. Eastern hedgerow seems to be the primary source, the northern hedgerow the minor source. First appearance of the native Narrow Leaved Cattail in a large colony on the south side – spread of Phragmites eastwards seem to be limited, sparse colonization here. North side of road watercourse in deep shade of overhanging trees and shrubs that contribute resources to downstream fish communities. Wildlife tracks observed crossing beneath road in culvert – either muskrat or racoon. Channel downstream of culvert has been altered to a drain but upstream appears natural (unimproved).

Crossing #7

Location: 150 m Northwest of the intersection of County Road 46 with Concession 12 / County Road 43.
GPS Coordinates: 42° 13' 25.18" N / 82° 54' 01.55" W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Pike Creek
Municipal Drain Name: Gzowski Drain, Grondin Drain.
Fish Species Captured: Bluegill (2), Banded Killifish (19), Crayfish (2) – sample retained, all warmwater species
Fish Habitat Designation: Direct fish habitat.
Expected Impact from Preliminary Design: Replace culvert and realign Gzowski Drain. New SWM pond #6 to intercept Delisle Drain – west branch of Grondin Marshall Drain.
Mitigation Requirements: Enhanced DFO protocols; Detail design to determine sediment and erosion control, fish screens and fish salvage if pumping. Provincial warmwater fish timing guidelines to be followed.
Notes: Large (6 m wide X 15 m long) pool, well shaded on upstream side of a large, relatively new culvert (**Att. B. Photo 35**) retains water as the headwater source. Ditches entering from east and west were dry. Highly eroded bank on the south side of the pool. Very steep side slopes; channel invert deeply entrenched below ground surface. Can easily walk through culvert on eroded topsoil substrates. North (downstream) reaches are deeply shaded with hedgerow trees and shrubs in deep, well protected valley although this reach was dry suggesting the pool acts as a refuge for fish and aquatic animals.

Crossing #8

Location: 770 m Southeast of the intersection of Concession 12 / County Road 43.
GPS Coordinates: 42° 13' 16.07" N / 82° 53' 24.00" W
Species at Risk Map Check: No SAR identified at this location on current DFO mapping.
Tributary of: Pike Creek
Municipal Drain Name: Pike Creek Drain
Fish Species Captured: Banded Killifish (3), Fathead Minnow (3), Channel Darter (1). All warmwater species.
Fish Habitat Designation: Direct fish habitat. Potential federal critical habitat designation.
Expected Impact from Preliminary Design: A new linear SWM Pond #7 is to be considered during detail design for the north side with two culvert replacements, one online and one offline.
Mitigation Requirements: Enhanced DFO protocols; Detail design to determine sediment and erosion control, fish screens and fish salvage if pumping. Provincial warmwater fish timing guidelines to be followed.
Notes: Deep, previously improved channel with steep slopes that are fully vegetated with shrubs and small trees on both sides of County Road 46. Channel diagonally skewed flowing south to north. Water depth up to 20 cm deep in stable channel with heavy shade and overhanging vegetation including Boneset and Marsh Marigold. Small area of Phragmites on eastern bank below gabion baskets. North of road, dense shade from trees and shrubs leaving the watercourse well protected although grass is mown right to the top of bank.

Crossing #9

Location: Channel lies along west side of County Road 19. Sampled at the intersection of County Road 46 and County Road 19.
GPS Coordinates: 42° 13' 09.93" N / 82° 52' 30.29" W
Species at Risk Map Check: No SAR identified at this location
Tributary of: Mooney Creek tributary to Pike Creek
Municipal Drain Name: West Townline Drain
Fish Species Captured: Blue Gill (1), Creek Chub (13). No SAR. All warmwater species.
Fish Habitat Designation: Direct fish habitat.
Expected Impact from Preliminary Design: New linear SWM Pond #8 at northwest corner of intersection. Culvert Replacement, Realign West Townline and Mooney Creek Drain north and south of intersection.
Mitigation Requirements: Remove instream barrier to fish passage. Enhanced DFO protocols; Detail design to determine sediment and erosion control, fish screens and fish salvage if pumping. Improve dangerous side slopes particularly adjacent to County Road 19. Provincial warmwater fish timing guidelines to be followed or as directed by DFO.

The proposed work is expected to be completed with changes to the watercourses containing fish habitat at Crossings 4, 7, 8 and 9 and in-direct fish habitat at Crossings 3 and 6. Proposed works have the potential to introduce sediment and deleterious substances into the aquatic environment and disturb or remove riparian vegetation. With the identified mitigation measures, the scale of negative residual effects is expected to be low. At a minimum, basic protections of the watercourse water quality should be taken; these include light duty silt fencing along the length, fueling machinery at least 20 m away, and managing the temporary access road crossings to minimize sediment and siltation issues. A sediment and erosion control plan and risk assessment will be required.

Field inventories and assessment confirmed:

- No aquatic SAR occur in the study area, and
- Several watercourses were found to contain common warm water fish species, or ecologically-valued resources contributing to fish abundance and diversity that have resulted in the positive designation of fish habitats for six of the nine watercourses studied.

Impacts to the habitat characteristics of the six watercourses providing fish habitat resources should be considered further during detail design to ensure compliance with applicable legislation and policies.

6.3.2.1 Terrestrial Environment

Wildlife crossings are anticipated to be required with directional fencing at culvert locations.

Any clearing and grubbing should be completed outside of the active breeding bird season of April 1 to August 31. If this is not possible, clearing and grubbing should occur under the supervision of an environmental professional, and only after the specific trees and vegetation needing removal have been screened for nesting birds or roosting bats.

Undertake targeted, specialized SAR surveys during Detail Design as required depending on species conservation status designations as they exist at that time. Ensure the design and construction complies with the ESA (2007). At crossing #4 a Red Mulberry (*Morus rubra*) considered Endangered was found. Identity to be confirmed by a qualified terrestrial ecologist before a species at risk mitigation strategy is determined.

Further assessment is also recommended for Woodlots A and B, as well as all naturalized habitats (i.e., hedgerows, drains, cultural meadows, etc.) during detailed design to confirm the presence of natural heritage features and habitat for SAR. Preliminary recommendations that can be implemented to mitigate impacts on these habitats include:

- No clearing of vegetation between April 1 – August 31st to avoid destruction or harm to nesting migratory bird species protected through the Migratory Bird Convention Act.
- No clearing of trees between April 1 – September 31st to avoid potential impacts to roosting bat species.
- Installation of silt fence along the limit of disturbance where it abuts Woodlots A and B or naturalized areas.
- Restoration of disturbed areas, where feasible, with native species suitable to site conditions and to increase native biodiversity.
- Replacement of tree cover associated with Woodlots A and B, if removed, to maintain canopy cover and wildlife habitats.

The following permits and approvals may be required during detail design phase, subject to confirmation once site-specific conditions and construction details are finalized:

- *Fisheries Act*: A Request for Review submission to DFO for In-water works during culvert replacements is required if the work has the potential to harm fish or fish habitat. Consultation with interested Indigenous Groups is a requirement of the *Fisheries Act*.
- Essex Region Conservation Authority (ERCA) permit: Works in or near watercourses including stormwater management ponds, culvert replacements and watercourse realignments may require a permit under Ontario Regulation 41/24 from ERCA for any proposed development and/or interference with watercourses, shorelines, and wetlands.
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) governs the alteration of Municipal Drains. A Drainage Engineer will need to arrange public consultations and notify affected landowners. This process is to be integrated with the *Fisheries Act* review in all watercourses containing Direct or Indirect Fish Habitats.
- *Endangered Species Act*: if surveys completed during detailed design identifies the presence of species listed as threatened or endangered under the ESA, registration or appropriate authorizations should be obtained through consultation with the Ministry of Environment, Conservation and Parks (MECP).

Field inventories and assessment confirmed:

- The presence of two County-Significant woodlots, and potentially other naturalized areas, could support SAR and other natural heritage features.

Impacts to the habitat characteristics of woodlots and naturalized areas should be considered further during detail design to ensure compliance with applicable legislation and policies.

6.3.2.2 Sourcewater Protection

The Study Area is not located within an Intake Protection Zone or a Well Head Protection Area.

6.3.2.3 Climate Change

The widening of County Road 46 and Concession Road 8 and 9 are not anticipated to produce an increase or significant decrease in greenhouse gas emissions.

6.3.2.4 Air Quality

There is potential for temporary lower air quality during construction. The contractor will be required to maintain the construction equipment in good working order.

MECP recommends that non-chloride dust suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures, 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.

6.3.3 Cultural Environment

No properties within the Study Area are recognized as an existing or potential heritage property or to have cultural heritage value.

6.3.3.1 Stage 2 Archaeological Assessment

The wooded and grassed areas within the project area (8.34 ha; 9.8%) that retain archaeological potential will require Stage 2 assessment.

6.3.4 Socio-Economic Environment

6.3.4.1 Land Use and Property

The widening of County Road 46 and Concession Road 8 and 9 is anticipated to conform with the future land use planning by the Town of Tecumseth, the County of Essex, the City of Windsor and the policies of the Province of Ontario.

6.3.4.2 Utilities

Plains Midstream Pipeline

Any ground disturbance within 30 m of the pipeline requires coordination with Plains Midstream Canada.

The following section outlines key considerations related to the presence of this pipeline and outlines necessary coordination and compliance requirements. Any ground disturbance within 30m of the Plains Midstream Pipeline requires coordination as follow:

1. A letter of request will be sent for Plains' Damage Prevention Department outlining the scope of work and the location of the pipeline.
2. Plains Crossing Application Form will be completed and submitted.
3. Detailed design drawings, including plan and profile views showing the relationship between the proposed construction and the pipeline will be submitted.
4. Plains Midstream must be notified at least three working days prior starting the work through calling One Call Center or by visiting the Click Before You Dig website.

6.3.4.3 Noise

Based on the noise contours generated from STAMSON 5.04, the following properties are projected to experience a 65 dBA sound level in the OLA:

- 8639 County Road 46
- 8559 County Road 46
- 6703 County Road 46
- 5072 County Road 46
- 3955 County Road 46

It is not considered technically feasible to implement noise barriers due to driveway openings, which would make the barrier ineffective, and therefore are not recommended for these 5 properties. A 60 km/h speed limit should be considered east of the Lauzon Parkway intersection to reduce noise impacts at 6703 County Road 46.

6.3.4.4 Stormwater Management

The Recommend ed Plan has identified locations for future stormwater management facilities (new and expansion of one existing facility) to mitigate the increased stormwater from existing conditions. The flows will be maintained to preconstruction levels following the Essex Region Conservation Authority guidelines. **Appendix I** provides preliminary details on sizing of these facilities recognizing these will be reviewed for future standards of the day. The plan also identifies alternative locations for these facilities where alternatives are feasible.

6.3.5 Summary of Effects and Mitigation

Key issues and Preliminary Design features and associated mitigation measures have been identified and summarized in **Table 20.**

Identified Preliminary Design mitigation measures reflect commitments by the County and the Town to mitigate environmental effects. Effects on the environment were considered in accordance with the MCEA process.

Table 20: Effects and Mitigation

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
Groundwater	MECP*	Protection of decommissioned and abandoned wells and septic systems from property acquisition, as per Ontario Water Regulations. Obtain Permit to Take Water.
Surface Water and Stormwater Erosion and siltation during construction	MNR**/MECP/ ERCA***	Provide stormwater management ponds due to increased stormwater runoff with road widening. Realign municipal drains to stormwater pond west of Concession Road 9
Fish Habitat	MNR DFO****	• DFO protocols to be determined during detail design; Detailed sediment and erosion control, use of rolled blankets following earthworks, fish screens if pumping and fish salvage when water is present during construction. • Warmwater fish habitat. No in-water work: March 15 to July 15 to protect the spawning period. • Provide erosion and sediment controls. • Minimize the delivery of sediments and associated pollutants to receiving watercourses. • Minimize the impact of road salt on the local vegetation and receiving watercourses. • Minimize the impact of increased flows on receiving watercourses. • Minimize potential erosion within the drainage system, and within the local receiving watercourses. • Remove instream barrier to fish passage. • In-direct fish habitat: Crossings #3 and #6 • Direct fish habitat: Crossings #4, #7, #8 and #9
Phragmites	ERCA and Essex County	• Removal of Phragmites through best management practices and the surrounding soil to a safe disposal site wherever practical.
Wildlife Crossings	MNR	Provide culverts and permanent, directional wildlife fencing to permit wildlife passage across roadway at culverts.
SAR	MECP	Undertake targeted, specialized SAR surveys during Detail Design as required depending on species conservation status designations as they exist at that time. Ensure the design and construction complies with the *Species Conservation Act* (2025). Crossing #4: Red Mulberry (*Morus rubra*) considered Endangered. Identity to be confirmed by a qualified terrestrial ecologist before a species at risk mitigation strategy is determined.
Migratory Birds	MNR	Any clearing and grubbing should be completed outside of the active breeding bird season of April 1 to August 31.
Turtles and Turtle Habitat	MNR	Install silt fencing before turtle nesting season (May 15 to Sept. 30). Protect and buffer active nests. Avoid groundwater alteration in nearby wetlands and creeks between October 1 and April 1 during turtle hibernation.
Water Quality and Stormwater	ERCA/MECP	Provide a Stormwater Management Plan.
Significant Woodlots	MNR	Avoid specimen trees and limit tree clearing.
Archaeological	MCM	• Stage 2 Archaeological Field Assessment will be undertaken within newly acquired property.

Table 20: Effects and Mitigation

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
		• Secure clearance as required by the Ministry of Citizenship and Multiculturalism (MCM). Should previously undocumented (i.e., unknown or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act.
Noise	Town of Tecumseh	Municipal Noise By-laws are to be followed during construction adjacent to residential areas. • Reduce speed limits east of Lauzon Parkway (future)
Management of Surplus Materials	MECP	OPSS 180 apply MECP "Management of Excess Materials in Road Construction and Maintenance Guidelines". • Management and Disposal of Wet Soils.
Driveways Alignment and grade changes	Property Owners	Normal property negotiations during detail design. Landowner mitigation to be determined. • Driveways to meet County standards.
Impacts to Farming Operations	Property Owners	• Maintain existing field access and tile drainage headers to be identified and accommodated.
Property Required	Property Owners	• Undertake property negotiations during detail design.
Utilities	Plains Midstream Pipeline	Any ground disturbance within 30m of the Plains Midstream Pipeline requires coordination as follow: • A letter of request will be sent for Plains' Damage Prevention Department outlining the scope of work and the location of the pipeline. • Plains Crossing Application Form will be completed and submitted. • Detailed design drawings, including plan and profile views showing the relationship between the proposed construction and the pipeline will be submitted. • Plains Midstream must be notified at least three working days prior starting the work through calling One Call Center or by visiting the Click Before You Dig website.
	Hydro One	• Liaison during detail design.
Changes to Emergency Services		• Liaison during detail design.
Permits and approvals	MECP ERCA DFO MTO OMAFRA	• Permit to Take Water • Permit under the *Species Conservation Act* (2025) if the proposed work will harm an endangered species or its habitat Permit for development and interference with wetlands, shorelines and other hazard lands under Ontario Regulation 41/24 • Request for Review submission to DFO • Permit Control Area (PCA) • Permit to alter municipal drains

MECP: Ministry of Environment, Conservation and Parks
MNR: Ministry of Natural Resources
ERCA: Essex Region Conservation Authority
DFO: Department of Fisheries and Oceans
MCM: Ministry of Citizenship and Multiculturalism
MTO: Ministry of Transportation Ontario
OMAFRA: Ministry of Agriculture, Food and Rural Affairs

6.4 Monitoring

As the proponent, the County of Essex and the Town of Tecumseth will commit to a Monitoring Program for this project as part of the Detail Design and Construction phases. An environmental firm specializing in monitoring programs will be part of the Detail Design team and Construction team to ensure the continuity of the environmental measures outlined in **Table 20**.

The Monitoring Program will address the Class Document requirements as set out in Section A.4.2.1 including:

- Key impacts to be monitored.
- Monitoring requirements during detail design, construction and during the operation of Concession Roads 8 and 9 and County Road 46.
- The period during which monitoring will be necessary.
- Frequency and timing of surveys, the location of monitoring sites and the methods of data collection, analysis and evaluation.
- The content, manner and form in which records of monitoring data are to be prepared and retained.
- Where and for how long monitoring records and documentation will be on file, specific requirements for monitoring appropriate to the particular circumstances and conditions under which the project will be implemented.
- How unexpected environmental effects identified during monitoring will be addressed.

6.5 30-Day Review

Following the Notice of Study Completion there is a minimum 30-day period during which documentation may be reviewed and comments and input can be submitted to the proponent.

The public may request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16(6) of the *Environmental Assessment Act*. In addition, the Minister may issue an order on their own initiative within a specified time period. The Director of the EA 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 the project.

The Notice of Study Completion, for this study, will contain directions on how an individual or group can communicate their concerns to the Minister of the Environment. Conservation and Parks. These directions are outlined below and in the public Notice.

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.

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, a Section 16 order request on those matters should be addressed in writing to:

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

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

6.6 Future Activities

Following EA clearance and a 30-day public review period, if there are no objections, this project, or any individual element of this project, may proceed to Detail Design and Construction after obtaining the necessary environmental permits and approvals, and subject to availability of funding and construction priorities. Mitigation measures listed in **Section 6.0** are to be incorporated during Detail Design and Construction, as appropriate. The timeline for implementation is expected to be within the 5-year capital program.