



Transportation Environmental Study Report Addendum

Highway 3 Widening and Safety Enhancements Study

1.2 km East of Essex County Road 23 Easterly
to 1.1 km East of Essex County Road 34

Assignment No. 3017-E-0012
GWP 3021-18-00



July 2021



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Appendix D	Traffic Operational Performance Review Report – On file with MTO
Appendix E	Fish and Fish Habitat Existing Conditions and Impact Assessment Report - On file with MTO
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1. Introduction

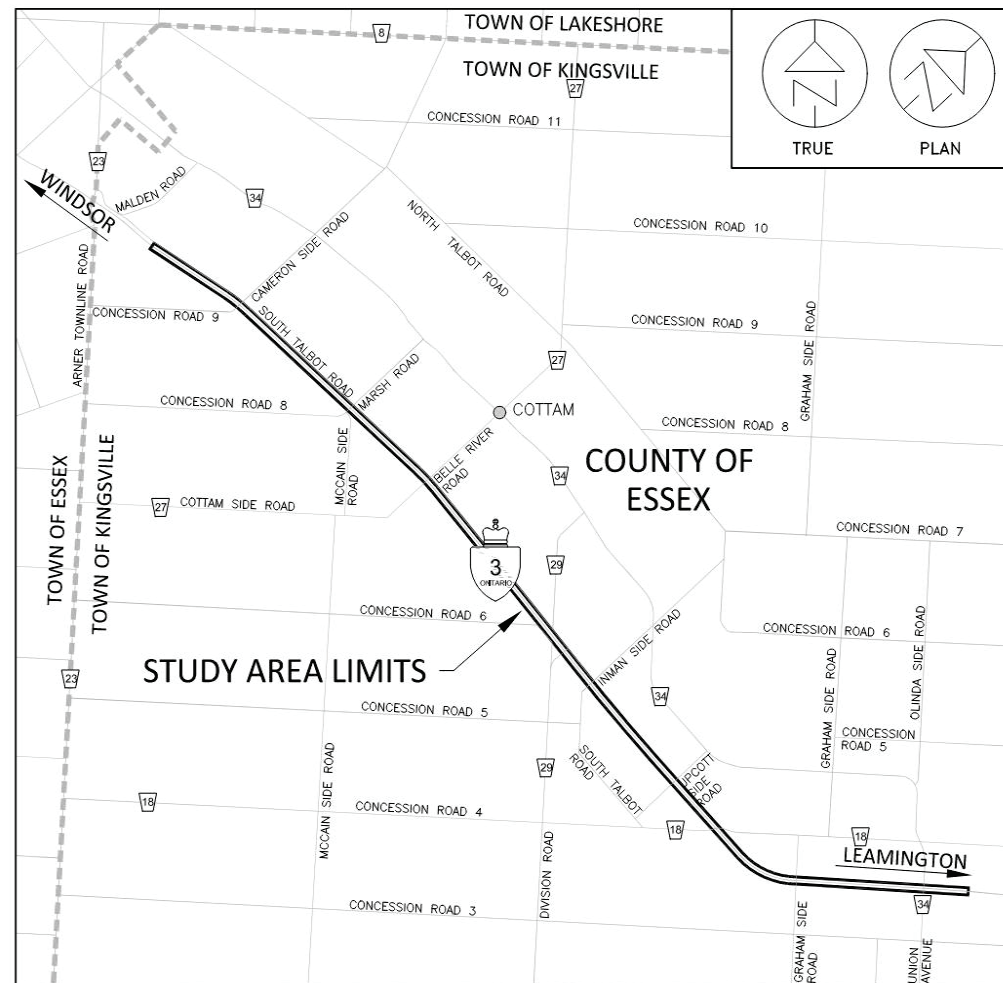


Figure 1-1 Study Area

This report documents the results of the review of the 2006 Approved Plan Transportation Environmental Study Report (TESR) and Preliminary Design Report (PDR) for the widening of 15.6-kilometer (km) of Highway 3 from 1.2 km east of Arner Townline (Essex Road 23) easterly to 1.1 km east of Union Avenue (Essex Road 34) in Essex County as shown in **Figure 1-1**. The improvements for this section of Highway 3 were originally approved in 2006 as part of the completed TESR and PDR and included highway widening, municipal road improvements, drainage improvements, illumination, and signalization.

The widening of Highway 3 is classified as a Group 'B' project in accordance with the Ministry of Transportation's (MTO's) Class Environmental Assessment for Provincial Transportation Facilities, 2000 (Class EA). As elaborated upon in **Section 2**, since the approved TESR is older than five years, the original findings need to be reviewed with any significant changes being documented in a TESR Addendum, which is to be issued for a 30-day public comment period.

As a result, MTO initiated the Highway 3 Widening and Safety Enhancements Study (Study) to review the approved 2006 improvements (**Section 3**) in comparison to the current transportation and environmental conditions in the Study Area (**Section 4**). Taking the existing Study Area conditions into consideration, the improvements approved in 2006 for this section of Highway 3 were assessed to determine whether any significant changes were appropriate.

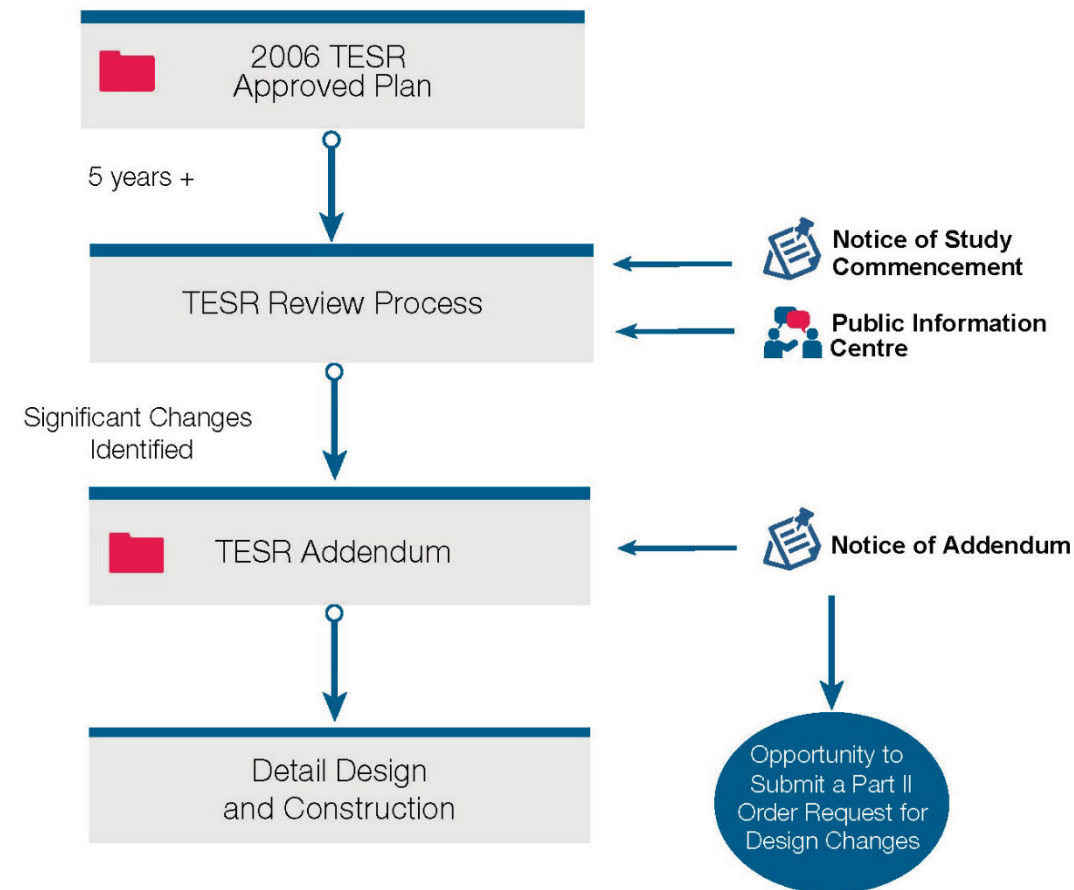
As described in **Section 5**, the assessment confirmed that several the improvements approved in 2006 were still appropriate and included the widening of Highway 3 from two to four-lanes with a 15 m depressed median, the realignment of Division Road to provide intersection separation, the closure of Inman Side Road / South Talbot Road at Highway 3, and traffic signals at Division Road (Essex Road 29) and Union Avenue (Essex Road 34). However, the assessment identified several significant changes to what was originally approved, which were developed into the 2020 Technically Preferred Plan and included the following:

- Installation of traffic signals at the Highway 3 and Belle River Road (Essex Road 27), Essex Road 18 and Graham Side Road intersections; and
- The closure of the intersections with Highway 3 at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, and Upcott Side Road.

The 2020 Technically Preferred Plan was modified as part of finalizing the recommended improvements for the Study based on comments received (**Section 5**). Specifically, the 2020 Technically Preferred Plan was consulted on through notifications to review agencies, Indigenous communities, and the public, an Online Public Information Centre (PIC), and presentations to the Town of Kingsville and County of Essex. A significant number of comments were received from those consulted including over 200 submitted in response to just the Online PIC. **Section 6** summarizes the comments received and how they were considered as part of the Study.

The anticipated impacts, proposed impact management measures, and proposed monitoring programs associated with constructing the 2020 Recommended Plan is summarized in **Section 7**. In addition, **Section 7** identifies several permits/approvals that need to be acquired as part of detailed design prior to construction.

2. The TESR Review Process



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Figure 2-1 TESR Review Process

The review of the 2006 approved TESR and 2006 Approved Plan for the widening of 15.6 km of Highway 3 from 1.2 km east of Arner Townline (Essex Road 23) easterly to 1.1 km east of Union Avenue (Essex Road 34) in Essex County was undertaken in accordance with the process established in MTO's Class Environmental Assessment for Provincial Transportation Facilities (2000) (Class EA). The Class EA specifies that for any portion of a project for which construction has not commenced within five years of the Notice of Submission for the TESR, MTO must carry out a review of the non-constructed portions of the project before construction can begin through an assessment of updated transportation and environmental conditions.

If significant changes to the project are identified through the five-year review, then a TESR Addendum must be prepared and issued for a 30-calendar day comment period. During the comment period, any interested person can inspect the TESR Addendum and provide comments to MTO for potential resolution. This process is depicted in **Figure 2-1**.

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

As five years have passed since the original TESR was approved in 2006, a review was undertaken that determined there are significant changes to the 2006 Approved Plan



Figure 2-2 Highway 3 at Cameron Side Road / Concession Road 9



Figure 2-3 Highway 3 at Marsh Road / Concession Road 8



Figure 2-4 Highway 3 at Division Road (Essex Road 29) from South Talbot Road



Figure 2-6 Inman Side Road, Facing South Talbot Road and Highway 3



Figure 2-5 South Talbot Road at Division Road (Essex Road 29)



Figure 2-7 Highway 3 at Union Avenue (Essex Road 34)



Figure 2-8 Highway 3, South Roadside Ditch



Figure 2-9 Highway 3 Structural Culvert

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3. The 2006 Approved Plan

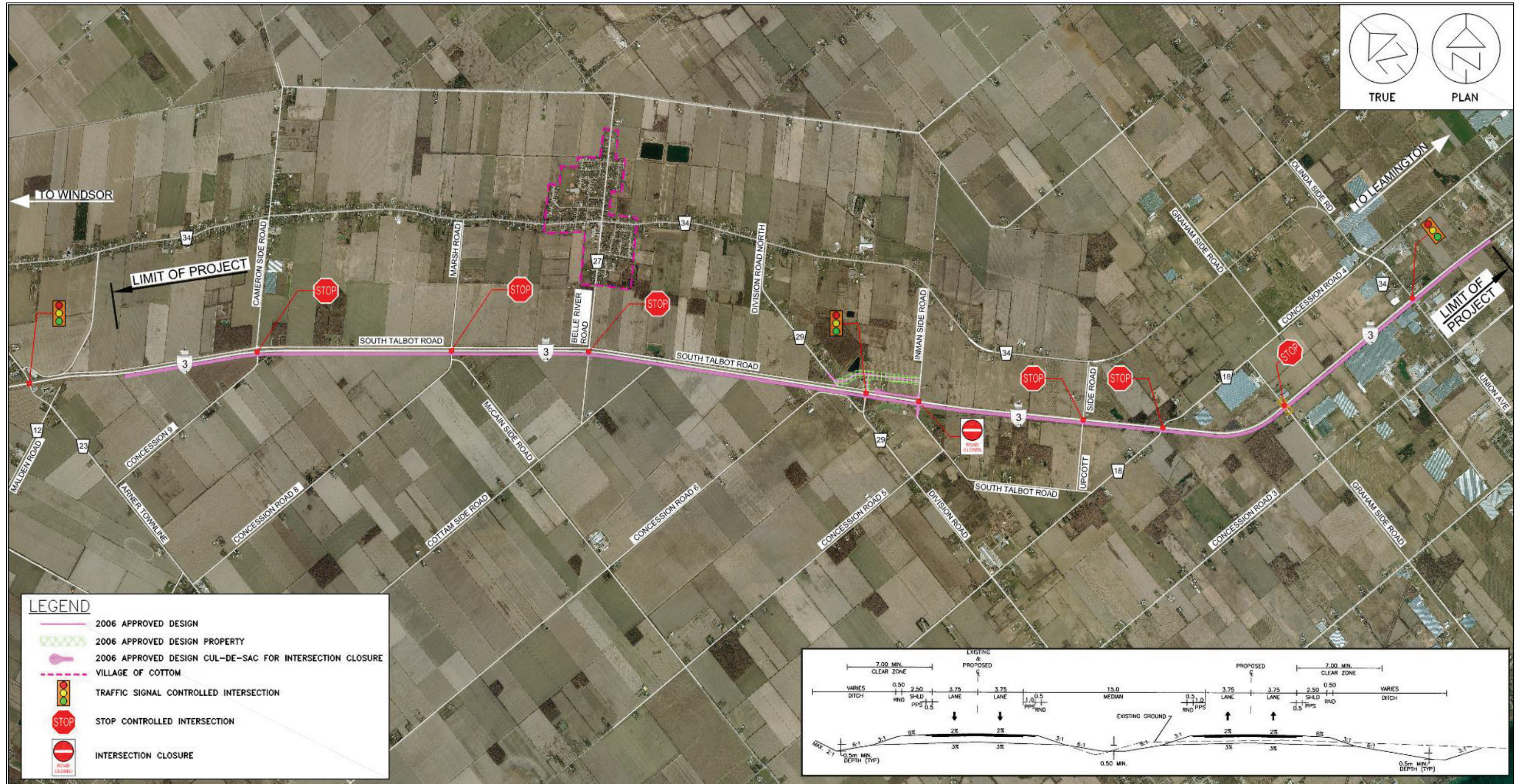
In 1999, MTO initiated a Preliminary Design and Environmental Assessment Study for Highway 3 from Outer Drive just east of the City of Windsor to the east junction of Union Avenue (Essex Road 34) just to the west of Leamington. The purpose of the 1999 Study was to review existing traffic, geometry, safety, pavement conditions, drainage, structural and electrical features and examine the need for improvements to address current and projected traffic needs within the overall Highway 3 Windsor to Leamington corridor.

The Study was concluded with the TESR and PDR being prepared and subsequently approved under the *EA Act* in 2006. The 2006 Approved Plan has been implemented in phases with Phases 1 and 2 being constructed in 2009 and 2012, respectively. The approved 2006 improvements associated with the remaining section of Highway 3 (Phase 3) from 0.8 km west of Ellis Side Road to 1.1 km east of Union Avenue (Essex Road 34) are currently in progress as two contracts. The Highway 3 Widening and Safety Enhancements Study represents the second contract from 1.2 km east of Arner Townline (Essex Road 23) to 1.1 km east of Union Avenue (Essex Road 34) and is illustrated in **Figure 3-1**. The 2006 Approved Plan, in general, consists of the following:

- A new 4-lane cross section with a 15 m depressed median on the existing alignment, with two new lanes being constructed for the eastbound direction and the existing lanes for the westbound direction.
- Traffic signal replacement for the Highway 3 widening at Union Avenue (Essex Road 34).
- New traffic signals for the Highway 3 widening at Division Road (Essex Road 29)
- Realignment of South Talbot Road at Division Road (Essex Road 29).
- Realignment and extension of Division Road (Essex Road 29) from the new west connection of South Talbot Road to Highway 3.
- A new Unnamed Road between realigned Division Road (Essex Road 29) and Inman Side Road.
- Stop controlled minor sideroad intersections with Highway 3 at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, and Upcott Side Road.
- Closure of Inman Side Road and South Talbot Road at Highway 3.
- Drainage improvements including the extension of six mainline structural culverts and the extension/replacement of the mainline non-structural culverts as required.

Following approval of the 2006 TESR and PDR, traffic signals were constructed at the Highway 3 and Division Road (Essex Road 29) intersection. The traffic signals were added to address sideroad delays entering the Highway 3 corridor especially for the morning northbound to westbound traffic movement.

Figure 3-1 2006 Approved Plan





4. Study Area Conditions

The transportation and environmental conditions associated with the section of Highway 3 from 1.2 km east of Arner Townline (Essex Road 23) easterly to 1.1 km east of Union Avenue (Essex Road 34) (Study Area) were reviewed based on a number of investigations to determine if any changes were required to the 2006 Approved Plan. For a linear highway project such as this one, there are two main components that are subject to the TESR review. Changes to the transportation conditions are specific to the function of the highway today as well as in the future with the improvements approved in 2006 implemented. The environmental review determines if conditions have changed where implementing the 2006 Approved Plan would cause potential impacts that were not anticipated at the time of the 1999 Study.

4.1 Transportation Conditions

The following summarizes the updated transportation conditions for the Highway 3 Study Area and identifies where changes are required to the 2006 Approved Plan.

4.1.1 Highway Engineering

Highway 3 is described as follows¹:

Study Length: 15.7 km

Number of Traffic Lanes: Two-lanes (one eastbound and one westbound)

Posted Speed: 80 km/h

Design Speed: 100 km/h

Functional Classification: Rural Arterial Undivided (RAU) 100

Horizontal Alignment: On tangent except for three horizontal curves that meet current guidelines for the design speed.

Vertical Alignment The topography of Highway 3 and the surrounding area is generally flat with very little change in grade from the west to the east. The existing highway was constructed with imported earth to raise the grade of the highway above the existing ground. Highway grades are generally 0% to 0.5% except within the horizontal curve of the highway between Essex Road 18 and Graham Side Road where the grades are approximately 1% to enhance drainage through the development of superelevation. The vertical alignment meets current guidelines for the design speed.

Crossfall/Superelevation: The crossfall and the superelevation of the existing highway meets current guidelines for the design speed.

Shoulders: The existing shoulders are 2.5 m in width with 0.5 m partially paved.

Appendix B includes the drafted design criteria for widening Highway 3 and presents the specific details related to the characteristics of the existing highway.

4.1.1.1.1 Current Widening of Highway 3 to the West of the Study Area

MTO is currently undertaking Phase 3 Contract 1 (Contract 2020-3006), the widening of Highway 3 to the west of the Study Area from 0.8 km west of Ellis Side Road to 1.2 km east of Arner Townline (Essex Road 23). The construction of Contract 2020-3006 will be completed prior to widening Highway 3 within this Study Area. As a result, Highway 3 will be transitioned from four-lanes to the existing two-lanes as part of the construction to the west. The transition will be fully illuminated and will be removed as part of the future construction of Highway 3 within the Study Area.

4.1.1.2 Sideroads

As indicated in **Figure 4.1**, there are nine sideroads intersecting with Highway 3 within the Study Area: Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, Belle River Road (Essex Road 27), Division Road (Essex Road 29), Inman Side Road / South Talbot Road, Upcott Side Road, Essex Road 18, Graham Side Road, and Union Avenue (Essex Road 34).

South Talbot Sideroad is adjacent and parallel to the north side of Highway 3 from Malden Road to Inman Sideroad for 9.5 km. Due to its proximity to the Highway 3 and Division Road intersection, South Talbot Road at Division Road is closed and reconnected to the realignment proposed for Division Road as part of the 2006 Approved Plan.

The following provides an overview of the updated transportation conditions for each of the nine sideroads intersecting with Highway 3 along with any associated proposed changes to the 2006 Approved Plan.

4.1.1.2.1 Cameron Side Road and Concession Road 9

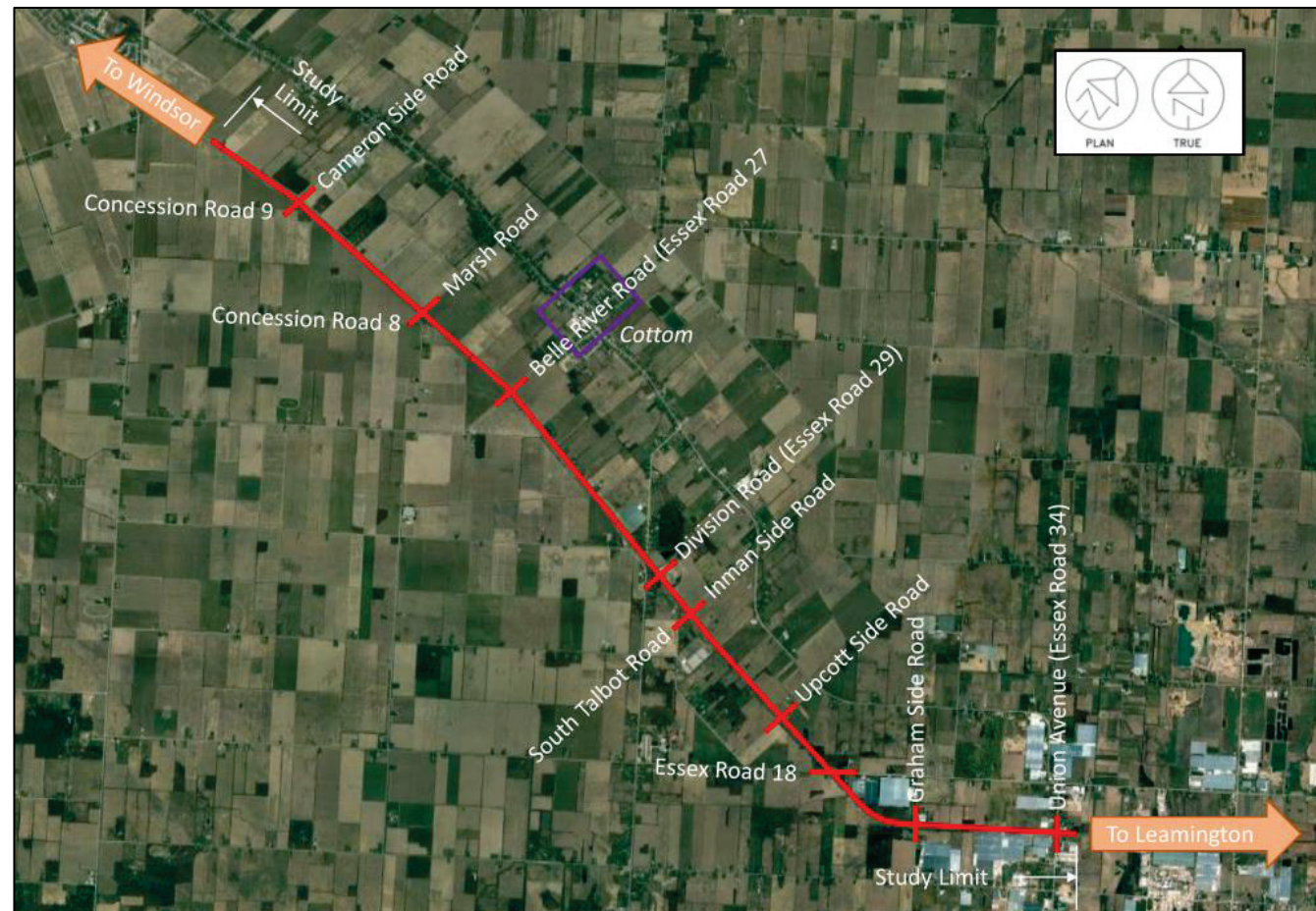
Located approximately 2.5 km to the east of Arner Townline (Essex Road 23), Cameron Side Road and Concession Road 9 intersect with Highway 3 as a four-legged intersection and controlled as a two-way stop condition on the sideroads. Cameron Side Road is named to the north of Highway 3 and Concession Road 9 is named to the south.

¹ For the purposes of this report, Highway 3 is oriented in an east – west direction with the City of Windsor considered west and with the intersecting sideroads oriented north – south, with Lake Erie considered south.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RLU 80	Jurisdiction:	Town of Kingsville
Auxiliary Lanes on Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Right Turn Lanes

The 2006 Approved Plan indicated that Cameron Side Road and Concession Road 9 would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

Figure 4-1 Locations of the Sideroad Intersections within the Highway 3 Study Area



4.1.1.2.2 Marsh Road and Concession Road 8

Situated approximately 4.7 km to the east of Arner Townline (Essex Road 23), Marsh Road and Concession Road 8 intersect with Highway 3 as a four-legged intersection controlled as a two-way stop condition on the sideroads. Marsh Road is named to the north of Highway 3 and Concession Road 8 is named to the south. Approximately 90 m to the south of Highway 3, Concession Road 8 intersects with McCain Side Road.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes - North-South
Classification:	RLU 80	Jurisdiction:	Town of Kingsville
Auxiliary Lanes on Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Right Turn Lanes

The 2006 Approved Plan identified that Marsh Road and Concession Road 8 would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.3 Belle River Road (Essex Road 27)

Located approximately 6.2 km to the east of Arner Townline (Essex Road 23), Belle River Road (Essex Road 27) is a four-legged intersection with Highway 3 and is controlled as a two-way stop condition on the sideroad.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RAU 100	Jurisdiction:	Essex County
Auxiliary Lanes on Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Left Turn Lanes and Westbound Right Turn Lane

The 2006 Approved Plan indicated that Belle River Road, Essex Road 27 would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.4 Division Road (Essex Road 29)

Situated approximately 9.3 km to the east of Arner Townline (Essex Road 23), Division Road (Essex Road 29) is a four-legged intersection with Highway 3 that is controlled with traffic signals. South Talbot Road intersects with Division Road immediately to the north of the Highway 3 intersection. Inman Side Road intersects with Highway 3 approximately 600 m to the east of the Division Road intersection.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RCU 80	Jurisdiction:	Essex County
Auxiliary Lanes on Sideroad:	Southbound Right Turn Lane	Auxiliary Lanes on Highway:	Eastbound and Westbound Left Turn Lanes and a dedicated Eastbound Right Turn Lane

The 2006 Approved Plan addressed the proximity of the Division Road and South Talbot Road intersections. As shown in **Figure 4-2**, Division Road is realigned from South Talbot Road to Highway 3. South Talbot Road connects to Division Road to the west and an Unnamed Road is extended from Division Road to the east to Inman Side Road. The intersection of Inman Side Road and Highway 3 is closed as part of the 2006 Approved Plan. Traffic signals are planned for the Division Road intersection as part of the 2006 Approved Plan with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

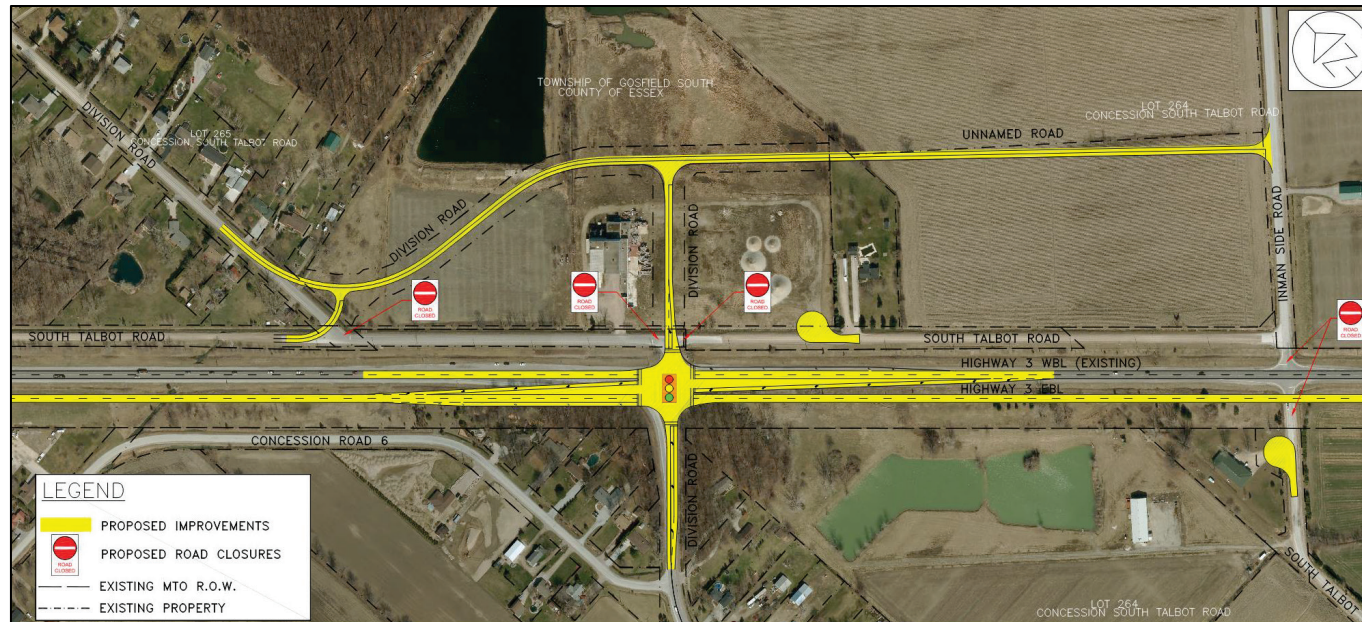


Figure 4-2 2006 Approved Plan for the Division Road (Essex Road 29) and South Talbot Road Intersections

4.1.1.2.5 Inman Side Road and South Talbot Road

Located approximately 9.9 km to the east of Arner Townline (Essex Road 23), Inman Side Road and South Talbot Road intersect with Highway 3 as a four-legged intersection controlled as a two-way stop condition on the sideroad. Inman Side Road is named to the north of Highway 3 and South Talbot Road is named to the south.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RLU 60	Jurisdiction:	Town of Kingsville
Auxiliary Lanes of Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Tapered Right Turn Lanes

The 2006 Approved Plan indicated that Inman Side Road and South Talbot Road would be closed as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.6 Upcott Side Road

Situated approximately 11.7 km to the east of Arner Townline (Essex Road 23), Upcott Side Road is a four-legged intersection with Highway 3 and is controlled as a two-way stop condition on the sideroad.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RLU 80	Jurisdiction:	Town of Kingsville
Auxiliary Lanes of Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Tapered Right Turn Lanes

The 2006 Approved Plan indicated that Upcott Side Road would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.7 Essex Road 18

Located approximately 12.6 km to the east of Arner Townline (Essex Road 23), Essex Road 18 is a four-legged intersection with Highway 3 and is controlled as a two-way stop condition on the sideroad. Essex Road 18 is poorly skewed to Highway 3 and has substandard horizontal curvature for the design speed approaching the intersection.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RCU 80	Jurisdiction:	Essex County
Auxiliary Lanes of Sideroad:	None	Auxiliary Lanes on Highway:	Westbound Tapered Right Turn Lane

The 2006 Approved Plan identified that Essex Road 18 would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.8 Graham Side Road

Situated approximately 14.0 km to the east of Arner Townline (Essex Road 23), Graham Side Road is a four-legged intersection with Highway 3 and is controlled as a two-way stop condition on the sideroad. Just to the north of Highway 3, Graham Side Road ends in a tee intersection with Essex Road 18.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RLU 80	Jurisdiction:	Town of Kingsville
Auxiliary Lanes of Sideroad:	None	Auxiliary Lanes on Highway:	Eastbound and Westbound Left Turn Lanes and Tapered Right Turn Lanes

The 2006 Approved Plan indicated that Graham Side Road would remain as a two-way stopped control intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.1.2.9 Union Avenue (Essex Road 34)

Located approximately 15.8 km to the east of Arner Townline (Essex Road 23), Union Avenue (Essex Road 34) is a four-legged intersection with Highway 3 that is controlled by traffic signals.

Posted Speed:	80 km/hr	Number of Lanes/Direction:	Two-lanes North-South
Classification:	RAU 100	Jurisdiction:	Essex County
Auxiliary Lanes of Sideroad:	Northbound and Southbound Left Turn Lanes	Auxiliary Lanes on Highway:	Eastbound and Westbound Left Turn Lanes and Right Turn Lanes



The 2006 Approved Plan identified that Union Avenue (Essex Road 34) would remain as a signalized intersection with the widening of Highway 3 from two-lanes to four-lanes with a 15 m depressed median.

4.1.2 Traffic Signals and Illumination

Partial illumination exists at the Highway 3 intersections with Belle River Road (Essex Road 27), Division Road (Essex Road 29), and Union Avenue (Essex Road 34). Both the Division Road and Union Avenue intersections are signalized.

As mentioned, full illumination of the transition from four-lanes to the existing two-lanes will be constructed as part of the current widening of Highway 3 from 0.8 km west of Ellis Side Road to 1.2 km east of Arner Townline (Essex Road 23). The full illumination will be removed as part of the widening of Highway 3 associated with this Study.

4.1.3 Utilities and Services

There are several underground and aerial utilities and services that exist along and/or cross Highway 3 within the Study Area including Bell Canada, Cogeco, Gosfield North Ltd., Hydro One, Town of Kingsville, and Enbridge Gas. **Table 4-1** provides a brief description of each of the utilities and services.

Table 4-1 Description of the Utilities and Services within the Highway 3 Study Area

Utility/Service Provider	Utility/Service Description
Bell Canada	Underground plant exists along the north side of the Highway 3 Right-of-Way (ROW) for the entire length of the Study Area with crossings at 250 m west of Division Road (Essex Road 29), Upcott Side Road, Essex Road 18, Graham Side Road, and Union Avenue (Essex Road 34).
Cogeco	Underground plant crossings of Highway 3 at two locations: 300 m west of Division Road (Essex Road 29) and Union Avenue (Essex Road 34). There is also one aerial crossing of Highway 3 at Graham Side Road.
Gosfield North Ltd.	A combination of underground cable, fibre optic and conduit for future use cross Highway 3 at Marsh Road / Concession Road 8; Belle River Road (Essex Road 27); 500 m west of Division Road (Essex Road 29) and Inman Side Road / South Talbot Road.
Hydro One	Aerial hydro cable exists along the South Talbot Road ROW with nine Highway 3 crossings at the following locations: <ul style="list-style-type: none"> 80 m east of Marsh Road / Concession Road 8 Belle River Road (Essex Road 27) 530 m and 240 m west of Division Road (Essex Road 29) Inman Side Road 60 m east of Essex Road 18 Graham Side Road. Union Avenue (Essex Road 34). The crossings at Graham Side Road and Union Avenue were recently upgraded to 3-circuit pole line with 26 m pole replacements.
Town of Kingsville	Watermain crossings at 200 m west of Division Road (Essex Road 29), Essex Road 18, and 1 km west of Union Avenue (Essex Road 34). A watermain exists along Concession Road 9 approaching Highway 3.

Utility/Service Provider	Utility/Service Description
Enbridge Gas	Pipelines cross underneath Highway 3 at 470 m and 280 m west of Division Road (Essex Road 29), 650m east of Inman Side Road / South Talbot Road, Essex Road 18, Graham Side Road and Union Avenue (Essex Road 34). Pipelines also exist along the south side of the Highway 3 ROW between Inman Side Road and 650 m west of Graham Side Road and along Concession Road 9 south of Highway 3.

4.1.4 Traffic Engineering

As part of the transportation conditions review, a traffic engineering analysis was completed to confirm and/or update the 2006 Approved Plan.

4.1.4.1 Existing and Future Traffic Volumes

Existing traffic volumes for Highway 3 and the intersecting municipal road network were developed from the following information:

- Traffic counts collected during the fall of 2019 before any COVID-19 related impacts on traffic volumes and patterns; and
- Average Annual Daily Traffic (AADT) data from the existing traffic counting stations on Highway 3.

To assess the future traffic operations, the existing volumes were increased based on AADT traffic projections provided by MTO for the years 2022, 2027, 2032 and 2042 as presented in **Table 4-2**. These forecasted increases in the AADT established the traffic growth rates.

The traffic growth rates were compared to traffic and population projections from the Town of Essex, who provided Traffic Impact Studies (TIS) for three new developments as well as their growth projections from their updated Official Plan. The Municipality of Leamington provided their growth projections from their draft Official Plan, and the Town of Kingsville provided their typical development and traffic growth rates. **Table 4-3** summarizes the municipal population growth rates.

The traffic growth rates used for this Study are based on the MTO forecasts because they are more conservative and represent larger increases in traffic when compared to the growth rates projected by the local municipalities.

Table 4-2 Historic and Projected Average Annual Daily Traffic for Highway 3

Highway 3 Section	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)
Location	2016	2022	2027	2032	2042
Arner Townline to Belle River Road	14,300	15,650 (1.5%)	16,900 (1.6%)	18,250 (1.5%)	20,200 (1.0%)
Belle River Road to Division Road	14,500	16,050 (1.7%)	17,450 (1.7%)	19,000 (1.7%)	21,000 (1.0%)
Division Road to Essex Road 18	10,700	12,250 (2.3%)	13,700 (2.3%)	15,350 (2.3%)	17,000 (1.0%)



Highway 3 Section	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)	AADT Volume (Percent Increase)
Essex Rd 18 to Union Avenue	10,800	12,200 (2.1%)	13,500 (2.0%)	14,950 (2.1%)	16,500 (1.0%)
Union Avenue to Essex Rd 31	8,850	9,450 (1.1%)	9,950 (1.0%)	10,500 (1.1%)	11,600 (1.0%)

Table 4-3 Forecasted Growth Rates from the Local Municipalities

Municipality	2016 to 2021	2021 to 2031
Town of Kingsville	1.0%	Not Provided
Town of Leamington	1.0%	0.8%
Town of Essex	0.9%	Not Provided

4.1.4.1.1 Intersection Traffic Volumes

Traffic data was collected during the fall of 2019 over a 10-hour period during the AM peak (6:00 to 10:00), mid-day (11:00 to 13:00), and PM peak (14:00 to 18:00) periods for all intersections except for the Highway 3 and Graham Side Road intersection. For this intersection, a 2016 traffic count was available, validated and included in the analysis with minor adjustments through volume balancing. Additional traffic data for segments and intersections obtained from MTO were compared with the collected data. This comparison found that the data is consistent and therefore was considered adequate for the purposes of the Study.

The results of the AM and PM peak hour traffic data collection completed in 2019 are presented in **Figure 4-3 of Appendix A**.

To assess the future intersection traffic operations, the AM and PM peak hour volumes were increased from 2019 to the future horizon years of 2024 (the year construction is to be completed) and 2044 (the 20-year design year) using the MTO traffic growth rates. The results of the AM and PM peak hour forecasts for 2024 and 2044 are presented in **Figure 4-4 and Figure 4-5 of Appendix A**.

While reviewing the traffic volumes for the sideroads, it was noted that the peak hour traffic volumes for Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, Inman Side Road / South Talbot Road and Upcott Side Road are low and low in comparison to the other sideroads intersecting with Highway 3 in the Study Area.

4.1.4.2 Highway and Intersection Operational Performance

From the data collection and balancing of traffic volumes, traffic operations at the intersections for 2019 were analyzed. Utilizing the traffic volumes forecasted for the intersections, analyses were completed for the 2024 and 2044 horizon years with the 2006 Approved Plan improvements in place. The analysis was completed following procedures described in the Highway Capacity Manual (HCM) and primarily focused on performance measures such as level-of-service (LOS), volume to capacity (v/c) ratio, and 95th percentile queues.

Appendix D includes the Traffic Operational Performance Review Report, which presents the results of the traffic analysis and performance of the intersections. The results of the analysis indicated that Highway 3 operates well; however, there are extended delays and poor LOS for traffic entering Highway 3 from the sideroads during the AM and PM peak periods. At Belle River Road (Essex Road 27), this poor LOS impacts turning movements from Highway 3. **Table 4-4** summarizes the results of the traffic analysis for the 2044 design year.

Table 4-4 Intersection Operational Concerns for the 2044 Design Year

Intersection	Traffic Movement	Performance Concern
Cameron Side Road / Concession Road 9	All movements during the PM Peak Period	A poor level of service with significant delays to enter the highway.
Cameron Side Road	All movements during the AM and PM Peak Periods	The amount of traffic arriving from the north would exceed the ability to enter the Highway 3 causing backup of traffic on Cameron Side Road at the intersection.
Marsh Road / Concession Road 8	All movements during the PM Peak Period	A poor level of service with significant delays to enter the highway. The amount of traffic would exceed the ability to enter the Highway 3 causing backup of traffic on the sideroad at the intersection.
Belle River Road (Essex Road 27)	All movements during the AM and PM Peak Periods	A poor level of service with significant delays to enter the highway. The amount of traffic would exceed the ability to enter the Highway 3 causing backup of traffic on the sideroad at the intersection.
Highway 3 at Belle River Road	Eastbound through traffic and westbound left turns during the AM Peak Period	A poor level of service with Highway 3 traffic constrained by the operation of the intersection. Left turning traffic would exceed the ability to cross Highway 3 eastbound causing backup of traffic on the highway.
Highway 3 at Belle River Road	Westbound shared through/right turning traffic during the PM Peak Period	A poor level of service with Highway 3 traffic constrained by the operation of the intersection. Right turning traffic would exceed the ability to enter Belle River Road causing backup of traffic on the highway.
Division Road (Essex Road 29)	Northbound during the AM and PM Peak Periods	A poor level of service with significant delays to enter the highway. The amount of traffic would exceed the ability to enter the Highway 3 causing backup of traffic on the sideroad at the intersection.
Upcott Side Road	Northbound and Southbound during the AM and PM Peak Periods	A poor level of service with significant delays to enter the highway.
Essex Road 18	Northbound and Southbound during the AM and PM Peak Periods	A poor level of service with significant delays to enter the highway. The amount of traffic would exceed the ability to enter the Highway 3 causing backup of traffic on the sideroad at the intersection.
Graham Side Road	Northbound and Southbound during the AM and PM Peak Periods	A poor level of service with significant delays to enter the highway. The amount of traffic would exceed the ability to enter the Highway 3 causing backup of traffic on the sideroad at the intersection.



4.1.4.3 Traffic Signal Warrants

Traffic signal warrant analysis was completed for all the intersections within the Study Area except for the existing signalized intersections at Division Road (Essex Road 29) and Union Avenue (Essex Road 34). The warrant analysis was completed for the years 2019 (existing conditions) and 2024 (the year construction is to be completed with the 2006 Approved Plan in place). **Table 4-5** summarizes the results of the warrant analysis.

The results of the 2019 warrant analysis identified that the Highway 3 intersections at Belle River Road (Essex Road 27) and Graham Side Road warrant traffic signals. The results of the 2024 analysis identified that the Highway 3 intersection with Essex Road 18 would also warrant traffic signals in addition to the Belle River Road and Graham Side Road intersections.

Further analysis and review determined that the traffic signals are:

- Required at Belle River Road (Essex Road 27)
- Required at either Essex Road 18 or Graham Side Road
- Not required at Concession Road 9 / Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road. Traffic signals are not required at these intersections because there is insufficient traffic on the sideroads to meet the warrant requirements for traffic signals at these locations.

Table 4-5 - Highway 3 Traffic Signal Warrant Results (OTM Book 12 Methodology)

Highway 3 Intersection	2019 Collision	2019 Volumes				2024 Projected Volumes			
		Minimum Volume	Delay to Cross Traffic	Combination Warrant	4-Hour Volume	Minimum Volume	Delay to Cross Traffic	Combination Warrant	4-Hour Volume
Cameron Side Road / Concession Road 9	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Marsh Road / Concession Road 8	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met

Highway 3 Intersection	2019 Collision	2019 Volumes				2024 Projected Volumes			
		Minimum Volume	Delay to Cross Traffic	Combination Warrant	4-Hour Volume	Minimum Volume	Delay to Cross Traffic	Combination Warrant	4-Hour Volume
Belle River Road (Essex Road 27)	Not Met	Not Met	Not Met	Met	Met	Met	Met	Met	Met
Inman Side Road / South Talbot Road	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Upcott Side Road	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met	Not Met
Essex Road 18	Not Met	Not Met	Not Met	Not Met	Not Met	Met	Not Met	Met	Not Met
Graham Side Road	Not Met	Not Met	Not Met	Met	Not Met	Not Met	Not Met	Met	Not Met

4.1.4.4 Collision Characteristics

As part of the Study, a collision analysis was carried out, but the results did not identify any specific areas of concern that could be addressed through proposed changes to the design or the 2006 Approved Plan. However, the collision analysis did identify a collision concern for the Highway 3 and Graham Side Road intersection. Historical road user collision data for the five-year period between January 2012 and December 2016 were used to understand any potential safety issues within the Study Area. The collision characteristics of the segments and intersections along the Highway 3 corridor were assessed.

A total of 159 collisions occurred within the Study Area during the 5-year analysis period. The reported severity of collisions included 120 Property Damage Only (PDO) collisions, 37 non-fatal injury collisions, and 3 fatal injury collisions. The collision summary by severity is shown in **Table 4-6**.



Table 4-6 Highway 3 Collision Summary (2012 to 2016)

Facility	Total Collisions	PDO Collisions	Injury Collisions	Fatal Collisions
Intersections	71	47	23	1
Road Segments	88	73	13	2

Table 4-6 shows that 34% of the collisions at intersections resulted in injuries, while only 15% of collisions within the road segments (13 out of 88) resulted in injuries. There were three fatal collisions in the Study Area: two within the road segments and one at an intersection. Table 4-7 provides details about the fatal collisions in the Study Area including their location, impact type and available details.

The intersections with the highest number of collisions are Division Road (Essex Road 29) and Graham Side Road. Most of the collisions on Highway 3 away from the intersections are Single Motor Vehicles (SMV) and the predominant cause of the collisions is animal impact related.

Table 4-7 Fatal Collisions within the Highway 3 Study Area

Highway 3 Location	Impact Type	Details
Upcott Side Road – Essex Road 18 (200 – 300 m West of Essex Road 18)	Approaching	Clear, Dry, Daylight
Essex Road 27 – Essex Road 29 (200 –300 m West of Division Road, Essex Road 29)	SMV (EB) – Pedestrian	Clear, Dry, Non-daylight
At Cameron Side Road	Rear End (WB)	Clear, Dry, Daylight, Lost Control

Network screening from MTO’s Safety Analyst software was reviewed, and the main findings were as follows:

1. Most study area intersections perform better than the “average” for MTO Western Region Intersections
2. The number and severity of the collisions per year at the intersection of Highway 3 & Graham Side Road is high and ranks in the Top 20 for MTO Western Region Intersections
3. The intersection of Highway 3 & Union Avenue (Essex Road 34) ranks in the Top 100 for MTO Western Region Intersections
4. All of the study area road segments perform worse than the “average” for MTO Western Region Road Segments
5. None of the study area road segments rank in the Top 100 for MTO Western Region Road Segments

4.1.4.5 Significant Changes to the 2006 Approved Plan

Several significant changes to the 2006 Approved Plan were identified based on the updated traffic analysis, which included the need for additional traffic signals and to address intersection operational concerns.

4.1.4.5.1 Additional Traffic Signals

The addition of traffic signals to the Study Area is considered a significant change necessitating a TESR Addendum. With traffic signals, additional property requirements not identified as part of the 2006 Approved Plan are required. From the traffic analysis, traffic signals are required at the following sideroad intersections with Highway 3:

- Belle River Road (Essex Road 27)
- Either Essex Road 18 or Graham Side Road

However, they are not required at Concession Road 9 / Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road, or Upcott Side Road.

4.1.4.5.2 Intersection Operational Concerns

The addition of traffic signals at Belle River Road (Essex Road 27) and Essex Road 18 or Graham Side Road would eliminate the intersection operational concerns at those intersections. However, for the intersections that do not meet the traffic signal warrants, the intersection operational concerns presented in Table 4-4 will persist in 2044. As a result, the following sideroad intersections will need to be addressed as part of updating the 2006 Approved Plan:

- Cameron Side Road / Concession Road 9
- Marsh Road / Concession Road 8
- Upcott Side Road
- Either Essex Road 18 or Graham Side Road if not signalized

Changing the configuration or closing these intersections would be considered a significant change to the 2006 Approved Plan and necessitating a TESR Addendum.

4.1.5 Pavement and Foundations

No changes to the 2006 Approved Plan are required based on the results of the pavement and foundation investigations completed as part of the Study. Highway 3 from 1.2 km east of Arner Townline (Essex Road 23) to Union Avenue (Essex Road 34) is in excellent pavement condition following the reconstruction completed in 2016 under Contract 2015-3004. The section of Highway 3 to the east of Union Avenue (Essex Road 34) is in fair condition and was last reconstructed in 1998/1999 and double microsurfaced in 2013.

4.1.6 Drainage and Hydrology

No changes to the 2006 Approved Plan are required based on a review of the current drainage and hydrological conditions in the Study Area. There are no natural drainage crossings of Highway 3 within the Study Area making it somewhat unique compared to most highway corridors. Storm water conveyance is completed through municipal drains with their contributing area originating in the predominately agricultural lands to the north and generally bounded between Essex Road 34 and Highway 3. All the drainage within the Study Area outlets to the Detroit River or Lake Erie.



In order to accommodate the proposed widening, continuation of the highway drainage will either be achieved by extending the existing culverts under the new highway eastbound lanes by approximately 20 to 30m or replacing culverts that have deteriorated or have capacity issues with new culverts that extend through the grading limits of the widened highway.

There are eight structural culverts (culverts with a span greater than 3 m) located within the Study Area. Six of these convey drainage under Highway 3 and would need to be extended to accommodate the highway widening. There are 18 non-structural culverts crossing Highway 3 and 19 culverts required to convey drainage for the sideroad improvements. All structural culverts were found in good physical condition and only two of the non-structural culverts were found to be in poor condition requiring replacement based on a 2019 survey and inspection. **Figure 4-6** within **Appendix A** depicts the drainage area and culverts for the Study Area.

4.2 Environmental Conditions

The current environmental conditions within the Highway 3 Study Area have remained largely unchanged from when they were inventoried as part of the approved 2006 TESR and PDR except for the eastern portion near the Municipality of Leamington where there has been more recent and on-going greenhouse construction and operations. In contrast, the remainder of the Highway 3 Study Area is predominantly agriculture (active row crops), which is expected to remain that way for the foreseeable future based on current municipal policy. Within this predominantly agricultural setting, there are a scattering of detached residential dwellings, several industries and businesses, and the occasional thickets and woodlands within the Study Area.

Consequently, no changes to the 2006 Approved Plan are required based on the results of the environmental conditions review. A more detailed description of the environmental conditions within the Study Area are provided in the following sections based on several investigations carried out as part of the Study.

4.2.1 Fish and Fish Habitat

Highway 3 crosses a series of municipal drains that are independent and inter-connected. The municipal drain crossings in the Study Area originate from the roadside and agricultural drainage north of the Study Area and generally flow in a southern direction. The primary purpose of the municipal drains is to convey drainage in an efficient and linear manner and ultimately discharge into either Lake Erie or the Detroit River.

The municipal drains are intermittent and are usually dry for at least two consecutive months in the year. The limited baseflow creates significant periods of drought where fish habitat becomes limited to a smaller subset of refuge pools where water can collect. The municipal drains within the Study Area are all uniform and provide similar habitat function and features that are generally abundant in the surrounding area. These drains are hardened, and channelized systems with limited riparian vegetation.

The municipal drains are considered by the Ministry of Natural Resources and Forestry (MNRF) to have low sensitivity for fish and fish habitat. The general fisheries information from MNRF indicates that the municipal drains represent a warmwater system supporting creek chub, bluntnose minnow, central mudminnow, goldfish, pumpkinseed, and gizzard shad species. There are no federally nor provincially listed aquatic Species at Risk (SAR) present within the Study Area or indication of use by coldwater species.

In total, there are 27 culverts existing in the Study Area of which eight are structural culverts, 18 are centerline non-structural culverts, and one is a non-structural culvert providing drainage conveyance at Union Avenue

(Essex Road 34). Site-specific field surveys were completed between June 1 and June 5, 2020, in accordance with the 2020 MTO Fish Guide to determine the existing fish and fish habitat conditions and the associated sensitivity of the municipal drains.

All examined municipal drains within the Study Area provide direct or indirect fish habitat except for four locations associated with Matlock Drain, which are not considered to support fish habitat. In addition, the field investigations confirmed the absence of any habitat features, which are 'Significant Fish Habitat' according to 2020 MTO Fish Guide. **Appendix E** provides the Fish and Fish Habitat Existing Conditions and Impact Assessment Report prepared as part of the Study.

4.2.2 Terrestrial Ecosystems

In general, the Study Area is dominated by agricultural lands under active row crops, agricultural buildings (greenhouses) and cultural meadows, with occasional thickets, woodlands, and forests throughout. Larger woodlands are present on the north side of Highway 3 outside of the footprint for the proposed improvements. Annual row crops are more abundant in the western extent of the Study Area while greenhouses are more common closer to the eastern Study Area limits.

There are no provincially significant natural heritage features/policy designations or rare vegetation communities within 120 m of the Study Area. Most of the vegetation present within the ROW is low-sensitivity, disturbed habitat, but some small to medium sized woodlands occur. Right-of-Way (ROW) species composition consisted of common native and non-native roadside trees, shrubs, and herbaceous species. Terrestrial field surveys were conducted in 2020 in accordance with the MTO's Environmental Reference for Highway Design (MTO, 2013). The surveys included an Ecological Land Classification and Botanical Inventory, a Butternut Health Assessment, Breeding Bird Surveys, Bat Acoustic Monitoring, Eastern Foxsnake Hibernacula Search and Incidental Visual Encounter Surveys, Wildlife Habitat and Incidental Wildlife Observations, and a Tree Inventory. The Terrestrial Ecosystems Assessment Report (**Appendix F**) prepared as part of the Study describes the surveys and the corresponding results in detail, which is briefly summarized as follows.

Vegetation Communities and Flora

As mentioned, the lands within the Study Area are predominantly agricultural, with the exception of occasional forests, woodlands, thickets, and marshes. A total of 242 vascular plant species were observed during field surveys within the Study Area. Eight of them could not be identified beyond genus due to insufficient characteristics for identification. Of the identified species, 145 species are native, 87 species are non-native, and two species are hybrids.

Tree Inventory

In total, 49 tree species were inventoried. In hedgerows and unmaintained places, the tree community was dominated by eastern red cedar and white mulberry; however, mature stands of pin oak, swamp white oak, and northern red oak were sporadically distributed along the Highway 3 ROW.

A silver birch was identified along the south edge of the right-of-way, east of Graham Side Road. This tree is large, in good health, a desirable species, in good form and located near an existing home. This tree should be preserved, if possible, as part of the Study.



Two white oaks were identified along the south edge of the right-of-way, west of Concession Road 9. These established oaks are large, healthy, and are located in close proximity to a memorial plaque dated in 1990. White Oaks are highly desirable roadside tree species that can persist for centuries providing benefits and requiring no maintenance compared to some other tree species. These trees should be reviewed as part of the Study and preserved if possible.

Wildlife and Wildlife Habitat

A wide variety of common bird species (64 species) were observed over the course of field surveys in the Study Area. No Myotis species or tri-coloured bat calls were detected through analysis of ultrasonic recordings. Red bat is the only species in the high frequency calling group that was recorded during the bat acoustic surveys. Few mammals were recorded based on direct observation or signs of activity during the field surveys. Green frog, American toad, northern leopard frog, and snapping turtle were observed to be using aquatic habitats within the Study Area. Western chorus frogs were heard calling in the distance from a large woodland south of the Highway 3 ROW. Several eastern gartersnakes were observed during the field surveys.

Species at Risk

Targeted field surveys were carried out to detect specific SAR that were considered to have a higher likelihood of occurrence in the Study Area and some species were observed during the field surveys. The results for these species are discussed in **Table 4-8**.

Table 4-8 Species at Risk Identified During Targeted Field Surveys

Species at Risk	Targeted Field Survey Findings and Discussion
Butternut	Seven Butternuts were identified within the Study Area during field surveys (Figures 3.20 and 3.21 in Appendix G). Two of these trees are situated on private property outside of the existing Highway 3 ROW, but still within the distance from potential grading limits that Ministry of the Environment, Conservation and Parks (MECP) regards as 'regulated' habitat for Butternut (i.e., 50 m). A Butternut Health Assessment was carried out according to the <i>Endangered Species Act (ESA)</i> requirements and a report prepared under separate cover (GHD, 2020) for submission to MECP to determine any approval/permitting needs.
SAR Bats	No SAR bats were detected during the acoustic surveys. A low proportion (15%) of the high frequency calls could not be identified to genus (i.e., Red Bat, Myotis, or Perimyotis). However, the lack of confirmed calls of the SAR species among any of the identifiable calls indicates they are unlikely to be present.
Barn Swallow	The Barn Swallow is a provincially and federally Threatened species and is afforded protection under the ESA. Barn Swallow nests were observed at five culverts within the Study Area (C1, SC1, C3, C4, and SC7). Probability of further use of other culverts during future breeding bird seasons is considered high. In Ontario, Barn Swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species frequently nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake, and river shorelines, cleared rights-of-way, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 1999).
Snapping Turtle	The Snapping Turtle is listed as species of Special Concern provincially and federally, and therefore does not receive protection under ESA or <i>Species at Risk Act (SARA)</i> . Snapping

Species at Risk	Targeted Field Survey Findings and Discussion
	Turtle populations and their habitat may be considered Significant Wildlife Habitat and impacts to these species should be avoided where possible. Several Snapping Turtle individuals were observed in watercourses throughout the Study Area with one deceased juvenile observed on the highway. In Ontario, Snapping Turtles utilize a wide range of waterbodies, but show preference for areas with shallow, slow-moving water, soft substrates, and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008a).
Swamp Rose-Mallow	The Swamp Rose-Mallow is listed as species of Special Concern provincially and federally, and therefore does not receive protection under ESA or SARA. Swamp Rose-Mallow populations and their habitat may be considered Significant Wildlife Habitat and impacts to these species should be avoided where possible. Swamp Rose-Mallow was observed in municipal drains in two locations within the Study Area (culverts C4 and SC7). Several clusters were recorded at both the north and south openings of both culverts, with the occasional cluster observed upstream or downstream up to 25 m from the openings.
Eastern Wood-pewee	The Eastern Wood-Pewee is listed as species of Special Concern provincially and federally, and therefore does not receive protection under ESA or SARA. Eastern Wood-Pewee populations and their habitat may be considered Significant Wildlife Habitat and impacts to these species should be avoided where possible. A single Eastern Wood-Pewee was detected outside of the Study Area at the intersection of Highway 3 and Division Road North. This species prefers to inhabit open forests and wooded lands comprised of a mix of tree species present with minimal understory vegetation (COSEWIC 2012a).
Western Chorus Frog	Western Chorus Frog is listed as Threatened federally and is protected under SARA. Western Chorus Frogs were heard vocalizing from the large woodland south of the Highway 3 ROW, approximately 1.2 km southeast of Inman Road. Limited suitable habitat is present in the ROW as roadside ditches and drainage ditches form the only available wetland habitat.

In addition to the preceding species observed during the surveys, the background review found numerous other SAR, which have been historically recorded in the Study Area and surrounding area. A complete list of SAR and their potential to occur in the Study Area is provided in **Appendix F**.

The only species assessed with potential to occur and not previously discussed is Monarch, which is a Special Concern species under the ESA and SARA. No individuals were observed during the surveys, but the larval foodplant, milkweed, is present in several areas throughout the Highway ROW and Monarch is therefore likely to be present.

The Eastern Foxsnake was not observed during the surveys. Although some habitat elements potentially suitable for Eastern Foxsnake are present within the Highway 3 ROW, the species is likely absent from the Study Area based on the historical/recent observation record, general lack of suitable habitat in the larger surrounding area, and negative Eastern Foxsnake results from the adjacent Highway 3 Contract 1 (Parsons 2020).



4.2.3 Surface Water

There are no natural drainage crossings of Highway 3 within the Study Area. Surface and storm water flow into roadside ditches and culverts that convey water to municipal drains. The contributing area of the municipal drains originates in the predominately agricultural lands to the north and generally bounded between Union Avenue (Essex Road 34) and Highway 3. All of the drainage within the Study Area outlets to the Detroit River or Lake Erie.

4.2.4 Groundwater

Highway 3 crosses several municipal drains that provide drainage for agricultural lands to the north between Essex Road 34 and Highway 3. The Study Area does not intersect any provincially significant wetlands or evaluated or unevaluated wetlands. Regionally, groundwater is anticipated to flow in a southerly direction towards Lake Erie, which is located approximately 4.5 km south of Highway 3.

Most of the highway alignment does not intersect any source water protection areas, except for the eastern portion of the alignment near the Municipality of Leamington. The eastern portion of the Highway 3 alignment intersects a regional significant groundwater recharge area (score 6) and highly vulnerable aquifer area (score 6) based on the Essex Region Source Protection Area Approved Source Protection Plan (2019). In addition, the eastern portion of the Highway 3 alignment intersects the Town of Kingsville municipal lake-based water supply source water intake protection zone 2 at Graham Sideroad and zone 3 at various locations (Essex SPP, 2019). Consequently, the proposed improvements would be subject to applicable source water protection policies related to these groundwater recharge and vulnerability areas and for the municipal intake protection zone.

In general, most of the Highway 3 alignment is underlain by fine textured glaciolacustrine deposits and Tavistock Till, which form a thick regionally extensive aquitard underlying it. A portion of the highway alignment near Leamington is underlain by coarse textured glaciolacustrine deposits, which may form local shallow unconfined aquifer conditions. The following surficial materials and geologic deposits are anticipated to underlie Highway 3 within the excavation depths based on information collected during borehole drilling activities carried out as part of the Study:

- Surficial Materials (0 to less than 1 m Below Ground Surface (BGS)) - topsoil, and fill comprised of silty gravelly sand to sand and gravel.
- Glaciolacustrine Deposit (approx. 1 to 2 m BGS) – silty clay.
- Till Deposit (2 to greater than 10 m BGS) – clayey silt till.

There are no regional groundwater discharge areas along this section of Highway 3 based on regional groundwater mapping (OGS, 2007). The depth to the first aquifer is in the range of 5 to 30 m BGS, and the depth to the water table is generally greater than 2 m BGS and typically ranges from 2 to 6 m BGS. The majority (90%) of water supply wells in Essex County are completed in the bedrock or deep overburden. Shallow dug wells, ranging from 4 to 9 m in depth, and cisterns are found commonly in the vicinity of Leamington.

Most water wells recorded by the MECP within 500 m of the Study Area are for deep drilled water supply wells completed in the bedrock or deep overburden. There is potential for some unrecorded large diameter bored/dug type shallow wells that rely on well storage for their supply to be present mainly in proximity to the eastern portion of the Highway 3 alignment, given that this area is underlain by coarse textured sand deposits.

Appendix G provides the Hydrogeological Assessment Report.

4.2.5 Land Use

As noted, the Study Area between the Town of Essex and Municipality of Leamington is situated primarily within an agricultural setting consisting of active row crops for the most part except for greenhouse operations in the eastern portion. Interspersed within the agricultural setting of the Study Area are approximately 32 residences, nine wooded areas, and several industries/ businesses.

In addition to these existing land uses, there are presently six potential or planned developments within the Study Area according to the Town of Kingsville. With only six potential or planned developments currently within the Study Area, it can be concluded that the existing land use fabric is relatively stable without significant development pressures.

The predominance of agriculture as the primary existing land use in the Study Area is expected to remain for the foreseeable future with very little change based on current municipal planning policy espoused by both the County of Essex and Town of Kingsville. The Official Plans for both the County of Essex and Town of Kingsville designate almost all the lands within the Study Area as Agricultural. The primary goal for the Agricultural designation in both Official Plans is to “protect prime agricultural area” and promote and protect agricultural uses.

Appendix H provides the Land Use Factors Report prepared as part of the Study.

4.2.6 Properties of Potential Environmental Concern

Seventeen properties of potential environmental concern were identified within the Study Area as having the ability to impact the soil and groundwater quality along Highway 3 based on a Contamination Overview Study (Appendix I). Most of the properties of potential environmental concern were given a moderate risk ranking (ten) with four properties ranked as low risk and only three properties ranked as high risk for subsurface contamination.

4.2.7 Noise

Although the Study Area is primarily agricultural in nature, there are existing sensitive receptors (e.g., residences) in the vicinity of the alignment that could be adversely affected by the construction and operation of the approved and proposed improvements to Highway 3. As a result, a noise assessment was completed as part of the Study (Appendix J). A total of 79 Noise Sensitive Areas (NSAs) were identified along Highway 3 within the Study Area.

In order to determine potential noise impacts, a comparison is made between the predicted future noise levels with the proposed improvements in place (10 years after construction) and the predicted future noise levels without the approved/proposed improvements in place at the same date. The construction of the improvements is expected to be completed in 2024 and traffic projections for the year 2034 were used for the noise assessment. Future noise levels above 65 dBA, or a change of more than 5 dBA are considered significant and require consideration of noise mitigation.

None of the predicted year 2034 noise levels at any NSA is equal to or exceed 65 dbA in either scenario (with or without the approved/proposed improvements). However, there are four NSAs where the noise level after the



2006 Approved Plan is constructed increases by 5 dBA or more compared to the noise level if the proposed improvements are not constructed (NSA 39a, NSA-59, NSA-60, and NSA-68). Therefore, consideration of noise mitigation may be required for each of these NSAs, and this is presented in **Section 7**.

4.2.8 Air Quality

Like the Noise Assessment, potential critical and sensitive receptors in the general vicinity of the Study Area were identified (e.g., residence) as part of the Air Quality Impact Assessment (AQIA) undertaken for the Study (**Appendix K**). As shown within the enclosed report, the receptors are all located along Highway 3 on both sides with the closest receptor (Receptor ID R30) being approximately 32 m south from the edge of the planned highway widening. Maximum air quality impacts at the worst case and critical and sensitive receptor in the Study Area were estimated through modeling for existing (2019) and future (2044 no-build and 2044 build) highway conditions.

The estimated maximum air quality concentrations at the worst-case critical and sensitive receptor were combined with the corresponding background ambient air quality concentrations and compared to the ambient air quality criteria. All predicted maximum air quality concentrations at the worst-case critical and sensitive receptor are below their respective air quality criteria with and without background included. The predicted air quality concentrations at all other sensitive receptors in the Study Area are lower.

In addition, a greenhouse gas and climate change assessment were completed as part of the AQIA carried out for the Study. The assessment confirmed that overall, the improvements to Highway 3 would contribute an insignificant fraction of Ontario's 2030 and 2050 CO₂-eq targets.

4.2.9 Cultural Heritage - Archaeology

There have been several archaeological assessments completed for the existing Highway 3 starting with the work completed for the construction of Highway 3 in 1980. Since 1980, there have been additional archaeological assessments associated with the Study Area (MTO (1993/94), ASI (2001), and Golder (2015)). The previously completed archaeological assessments were reviewed and the following was confirmed with the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI):

- A Stage 1 Archaeological Assessment (AA) needs to be completed for the entire Study Area necessitating the need to carry one out as part of this Study.
- A Stage 2 AA needs to be carried out based on the previous archaeological findings, but subject to the results of the planned Stage 1 AA.
- It is expected as the project continues towards implementation that Stage 3 and Stage 4 Archaeological investigations will be required.

With the preceding in mind, a Stage 1 AA background study was undertaken for the Study. The background research indicated that the Study Area was in proximity to features signalling archaeological potential including past water sources, previously registered archaeological sites, and mapped 19th-century structures and thoroughfares. Therefore, based on the background review, some portions of the Study Area have potential for the recovery of archaeological resources. Previous archaeological assessments as well as a preliminary field review established that the roadways and associated ditching within the Study Area are disturbed; however, lands outside of the existing ROW retain archaeological potential.

The portions of the Study Area that fall within agricultural fields, woodlots, or manicured lawn are not obviously disturbed and retain archaeological potential. These areas of archaeological potential should be subject to a Stage 2 AA. In keeping with provincial standards, the agricultural fields should be ploughed for pedestrian survey while the portions of the Study Area that consist of unploughable land are recommended for test pit assessment. A 5 m transect interval is recommended to achieve the provincial standard. In addition, there are five previously registered archaeological sites within or immediately adjacent to the Study Area; three of these sites require further archaeological assessment prior to any construction activities.

5. The 2020 Recommended Plan

As previously stated, the 2006 Approved Plan was reviewed with respect to the updated transportation and environmental conditions associated with the Study Area to determine if any significant changes are warranted. Two transportation conditions were identified at the sideroad intersections that are significant changes to the 2006 Approved Plan. The first condition is the addition of traffic signals at the Highway 3 intersection with Belle River Road (Essex Road 27) and the Highway 3 intersection(s) with Essex Road 18 and/or Graham Side Road. The second condition is related to the low traffic volumes and poor operating conditions for the sideroad intersections that do not warrant traffic signals but would remain open as a two-way stop condition. These Highway 3 intersections are located at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, Upcott Side Road and either Essex Road 18 or Graham Side Road if one of these intersections is not signalized.

5.1 Development of the 2020 Technically Preferred Plan

5.1.1 Closure of Low Volume side Road Intersections

Highway 3 is to be widened from two-lanes to four-lanes with a 15 m wide depressed median as part of the 2006 Approved Plan. The 2006 Approved Plan identified traffic signals to be constructed at the Highway 3 intersections with Division Road (Essex Road 29) and Union Avenue (Essex Road 34). Additional traffic signals are now proposed to be constructed at Belle River Road (Essex Road 27) and either Essex Road 18 or Graham Side Road. The additional traffic signals provide increased opportunities to enter and leave the highway under controlled conditions.

The 2006 Approved Plan proposed stop-controlled intersections for the remainder of the intersections with Highway 3: Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, Inman Side Road / South Talbot Road and Upcott Side Road. For the design year, 2044, operational concerns persist at these locations due to the amount of traffic on Highway 3 not providing sufficient gaps to permit traffic to leave or enter the highway. At these locations, with the widening completed, motorists stopped at the sideroad would need to understand the gaps in traffic on Highway 3 to turn right, cross or turn left. In addition, traffic turning left from Highway 3 would need to slow down and find a gap in the opposing traffic to cross. Similarly, traffic on Highway 3 would need to slow down to make the right turn movement.

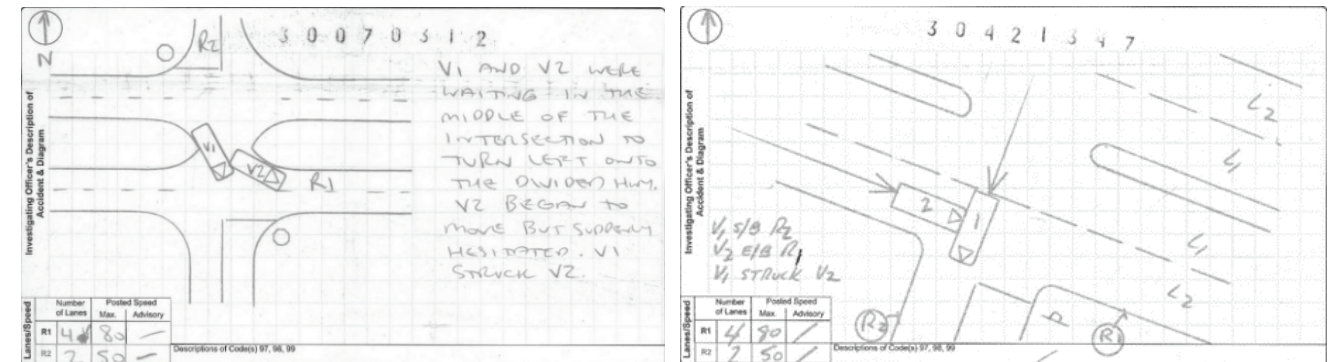
The volume of traffic utilizing these four sideroad locations is low in comparison to the proposed signalized intersections. During the morning and afternoon peak hours, the maximum amount of traffic reaches about one vehicle every two minutes. For the remaining portions of the day, traffic could be estimated to arrive at no greater than one vehicle every 10 to 15 minutes. Consequently, the commuter-oriented traffic on Highway 3 would normally not be anticipating traffic to enter or exit at these low volume sideroad locations.

Delay and poor levels of services for some of the turning movements at the intersections not warranting traffic signals was identified. One of the symptoms of poorly operating intersections is a sense of urgency/frustration from being delayed, which has shown to lead to driving maneuvers that are riskier for the driver to complete in comparison to better performing intersections.

In reviewing the low traffic volumes, on-going collision concerns with the operation of at-grade stop-controlled intersections for divided highways were identified. Other locations within MTO West Region have experienced

collisions that show the challenges for drivers to perceive safe gaps in traffic to complete maneuvers from the sideroad into the mainstream highway traffic as shown in **Figure 5.1**. Due in part to the greater distances to enter/cross the highway, the operating speeds of the highway and the need to understand the speed, distance, and gaps within approaching traffic across a depressed median contribute to the challenges facing drivers at these locations. Collisions at these intersections tend to be more severe and result in higher vehicle damages, injuries and sometimes fatalities.

Figure 5-1 Collision Diagrams



From this review, the closure of the low volume sideroad intersections with Highway 3 was determined to be the most appropriate solution. The rationale for the closures included the following:

- Safety is enhanced with the elimination of the conflict points for traffic entering or leaving Highway 3 at the unsignalized intersections.
- Traffic volumes that need to reroute to the traffic signal intersections are low and can be accommodated within the existing local road network.
- Traffic signals will provide opportunities for pedestrian and cyclists to cross the corridor under controlled conditions. Crossing four traffic lanes and a depressed median at the unsignalized intersection would be a safety concern for cyclists and pedestrians as Highway 3 traffic volumes increase.
- Emergency services mobility and response times are not compromised.

The closure of at-grade intersections that do not warrant traffic signals was incorporated into the Technically Preferred Plan based on the preceding rationale.

5.1.2 Traffic Signals for Essex Road 18 or Graham Side Road.

The transportation conditions review concluded that traffic signals would be required for Essex Road 18 or Graham Side Road by 2024. As a result, an assessment was completed to determine if one or both intersections should be signalized as part of the Technically Preferred Plan. As shown in **Figure 5-2**, Essex Road 18 and Graham Side Road are separated by approximately 1.4 km along Highway 3. Highway 3 curves to the east between the intersections and this creates an interesting local road network between the sideroads.

To the north, Graham Side Road terminates at Essex Road 18. Traffic arriving from the north or destined to the north could easily use either intersection and thereby support the decision to provide traffic signals at only one

location. However, the alignments to the south are perpendicular and diverging from each other. There is no simple connection between Graham Side Road and Essex Road 18 to the south of Highway 3.

Given the following factors, it was determined that the Highway 3 and Graham Side Road intersection would be closed and that the Highway 3 and Essex Road 18 intersection would be signalized as part of the 2020 Technically Preferred Plan:

- The transportation conditions review determined that the intersection of Essex Road 18 or Graham Side Road should be signalized.
- Essex Road 18 is a County road and is a key part of the County’s arterial road network.
- Graham Side Road is a Town of Kingsville road that has been under recent development pressure for Greenhouse industries and is an alternative route for Division Road (Essex Road 29).
- The transportation conditions review identified the intersection of Highway 3 and Graham Side Road as one of the top twenty intersections within MTO West Region for collisions.

Figure 5-2 Local Road Network at Highway 3, Essex Road 18, and Graham Side Road



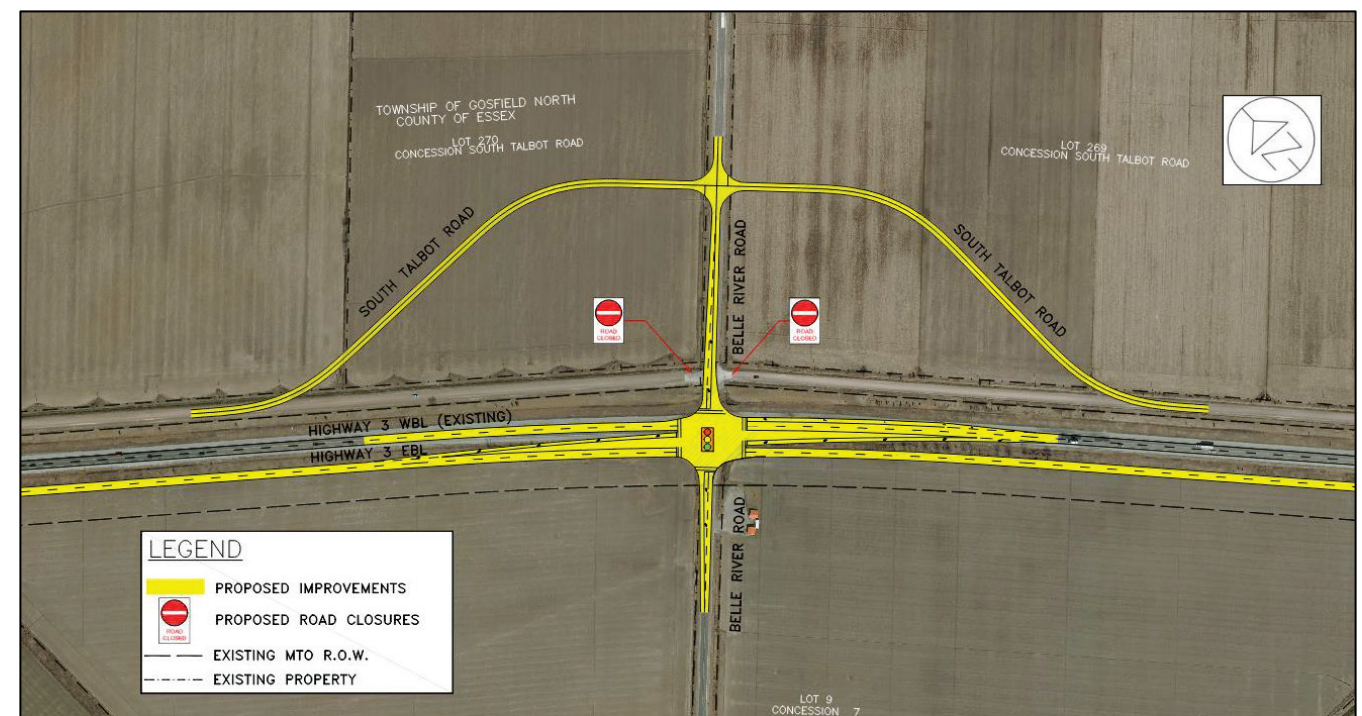
5.1.3 Roundabouts versus Traffic Signals

Roundabouts and traffic signals provide for controlled access at intersections and thereby offer enhanced safety and can in some circumstances improve levels of service for all traffic. Early in the Study, roundabouts were considered for all proposed traffic signal intersections. In operation, roundabouts require all traffic to slow down and yield to traffic within the roundabout. This means that all traffic will need to slow down at each roundabout to proceed through the intersection regardless of the presence of any conflicting traffic from the intersecting highway/sideroads.

Traffic signals permit traffic to remain at full speed with caution through an intersection under green light conditions. In comparing traffic volumes between Highway 3 and all of the sideroads, Highway 3 traffic volumes range from 2.3 times to 12.1 times greater. Given the provincial mandate to move people and goods safely, efficiently, and sustainably to support a competitive economy, roundabouts penalize Highway 3 progression in comparison to traffic signals. Since the sideroad traffic volumes are low in comparison to the Highway 3 traffic volumes, roundabouts were not included in the 2020 Technically Preferred Plan.

All traffic signals in the Study Area will be designed to initiate a change in the signal based on a presence detection at the sideroad either through vehicle and/or pedestrian demand. With this design, the traffic signals on Highway 3 will remain green until there is a demand from the sideroad.

Figure 5-3 Highway 3 and Belle River Rd (Essex Rd 27) Technically Preferred Plan



5.1.4 Improvements Required for the Signalized Intersections

The improvements required at each of the signalized intersections is provided in comparison to the 2006 Approved Plan as follows.

5.1.4.1 Highway 3 and Belle River Road (Essex Road 27)

Figure 5-3 represents the installation of traffic signals at the intersection at Highway 3 and Belle River Road (Essex Road 27). The installation of traffic signals is a significant change from the 2006 Approved Plan and this change requires additional improvements necessitating the need for property.

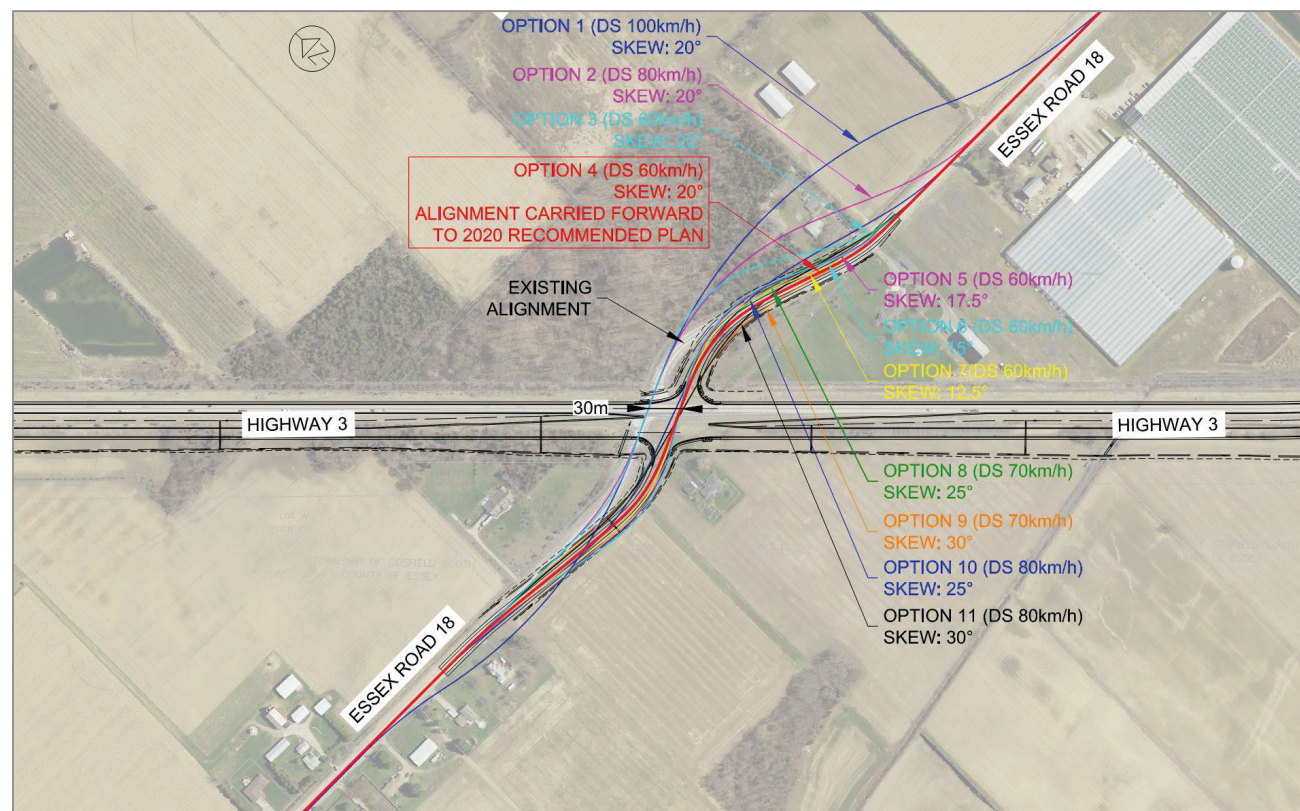
In addition to the eastbound and westbound through lanes, offsetting and staggered left turn lanes would be constructed on Highway 3 to provide for the westbound to southbound and eastbound to northbound turning movements. In 2044, the westbound to northbound through/right turning traffic lane approaches capacity; and

therefore, a westbound to northbound right turn lane would need to be constructed as part of the Study. This right turn lane impacts the existing municipal drain culvert under Highway 3, and it needs to be relocated to the east to accommodate the highway improvements.

For Belle River Road (Essex Road 27), a combination right, through and left traffic lane would be satisfactory at the intersection for northbound and southbound traffic beyond 2044. However, upon further review, it was decided that a northbound to westbound and a southbound to eastbound left turn lane should be constructed along with the through/right turn lane at the intersection.

The greatest impact at the intersection will be the proposed relocation of the South Talbot Road and Belle River Road (Essex Road 27) intersection northerly approximately 215 m north of Highway 3. This separation is required to meet current design guidelines for successive intersections. The proposed relocation of South Talbot Road to the north would require additional property that is presently agricultural lands.

Figure 5-4 Alignments, Skews and Crossings Considered for Essex Road 18 at Highway 3



5.1.4.2 Highway 3 and Division Road (Essex Road 29)

The intersection at Highway 3 and Division Road (Essex Road 29) will be constructed as per the 2006 Approved Plan. In 2024, the westbound to northbound and the eastbound to southbound through/right turning traffic lanes approach capacity; and therefore, right turn lanes from Highway 3 to Division Road would be constructed as part of the Study.

5.1.4.3 Highway 3 and Essex Road 18

The original alignment for Essex Road 18 would have crossed Highway 3 at about a 45° skew. Highway 3 was constructed in the early 1980s with Essex Road 18 at a stop condition and the skew was reduced to 20 degrees by the application of tight horizontal curves that provide for an operating speed of approximately 40 km/hr at the approaches to Highway 3. With traffic signals proposed for the intersection, there is the potential that traffic will travel on Essex Road 18 at speeds greater than 40 km/hr; and therefore, improvements to the alignment would be required at the intersection.

As presented in **Figure 5.4**, alignment options for the design speeds of 60 km/hr, 70 km/hr, 80 km/hr, and 100 km/hr were developed for Essex Road 18 along with a variety of skews to Highway 3 and positions where the Essex Road 18 would cross. In consultation with Essex County, the intersection was shifted approximately 30m to the east, the skew of 20 degrees was retained and the design speed of the alignment was improved to 60 km/hr. This adopted alignment minimizes the property required and eliminates the need for a full property buyout. The posted speed on Essex Road 18 would be reduced from 80 km/hr to 60 km/hr for the approaches to Highway 3 in concert with the construction of the adopted alignment.

Eastbound and westbound offsetting and staggered left turn lanes would be constructed on Highway 3 to provide for the westbound to southbound and eastbound to northbound turning movements. For Essex Road 18, a combination right, through and left traffic lane would work at the intersection for northbound and southbound traffic beyond 2044. Given the additional property requirements for the implementation of sideroad left turn lanes and the proximity of Graham Side Road, sideroad left turn lanes are not proposed at this intersection.

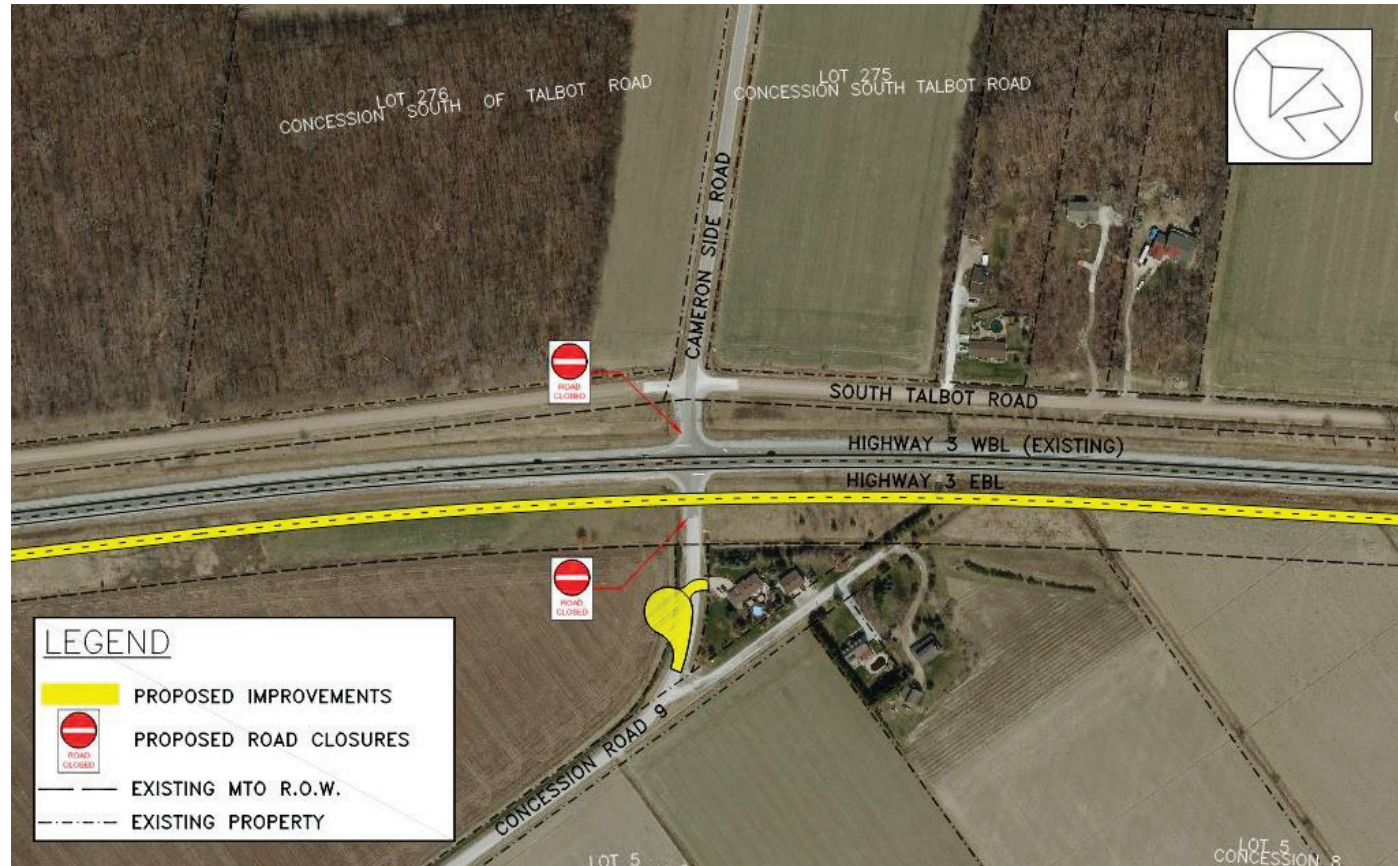
5.1.4.4 Highway 3 and Union Avenue (Essex Road 34)

The Highway 3 and Union Avenue (Essex Road 34) intersection will be constructed as per the 2006 Approved Plan. However, the Technically Preferred Plan also includes the construction of an eastbound to southbound and westbound to northbound right turn lanes from Highway 3.

5.1.5 Sideroad Closure Improvements

The Highway 3 intersections at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, Inman Side Road / South Talbot Road, Upcott Side Road and Graham Side Road are all proposed to be closed as part of the Technically Preferred Plan. The sideroad closures would require improvements to provide cul-de-sacs to permit maintenance vehicle turn arounds and/or other improvements to ensure that the local road network continues to operate well with the implementation of the 2020 Technically Preferred Plan.

Figure 5-5 Proposed Closure of Cameron Side Road / Concession Road 9 at Highway 3



5.1.5.1 Cameron Side Road / Concession Road 9

As shown in **Figure 5-5**, Cameron Side Road is proposed to be closed at a Tee intersection with South Talbot Road. For Concession Road 9, a cul-de-sac is proposed to be constructed to the west within the agricultural land to avoid impacting the residential property to the east. Property would be required for the proposed cul-de-sac. The existing municipal drain would need to be relocated around the proposed cul-de-sac.

5.1.5.2 Marsh Road / Concession Road 8

As illustrated in **Figure 5.6**, Marsh Road is proposed to be closed at a Tee intersection with South Talbot Road. McCain Side Road presently terminates at Concession Road 8 just to the south of Highway 3. In review with the Town of Kingsville, given the low volume of traffic on both Concession Road 8 and McCain Side Road, a reduced horizontal curve joining the two roads is proposed.

5.1.5.3 Inman Side Road / South Talbot Road

As per the 2006 Approved Plan, Inman Side Road will be closed at Highway 3 and connected to Division Road (Essex Road 29) by an Unnamed Road. A cul-de-sac will be constructed on South Talbot Road to permit maintenance vehicles to turn around. In accordance with the 2006 Approved Plan, South Talbot Road, located to the south of Highway 3 will be closed with a cul-de-sac.

Figure 5-6 Proposed Closure of Marsh Road / Concession Road 8 at Highway 3



5.1.5.4 Upcott Side Road

Upcott Side Road is proposed to be closed with a cul-de-sac to the north of Highway 3, just south of a residential entrance. South of Highway 3, there is only one existing field entrance within Upcott Side Road to South Talbot Road. In consultation with the Town of Kingsville, this portion of Upcott Side Road is proposed to be closed at Highway 3, and the Town will consider if the road should be abandoned, and the land returned to the adjoining property owners.

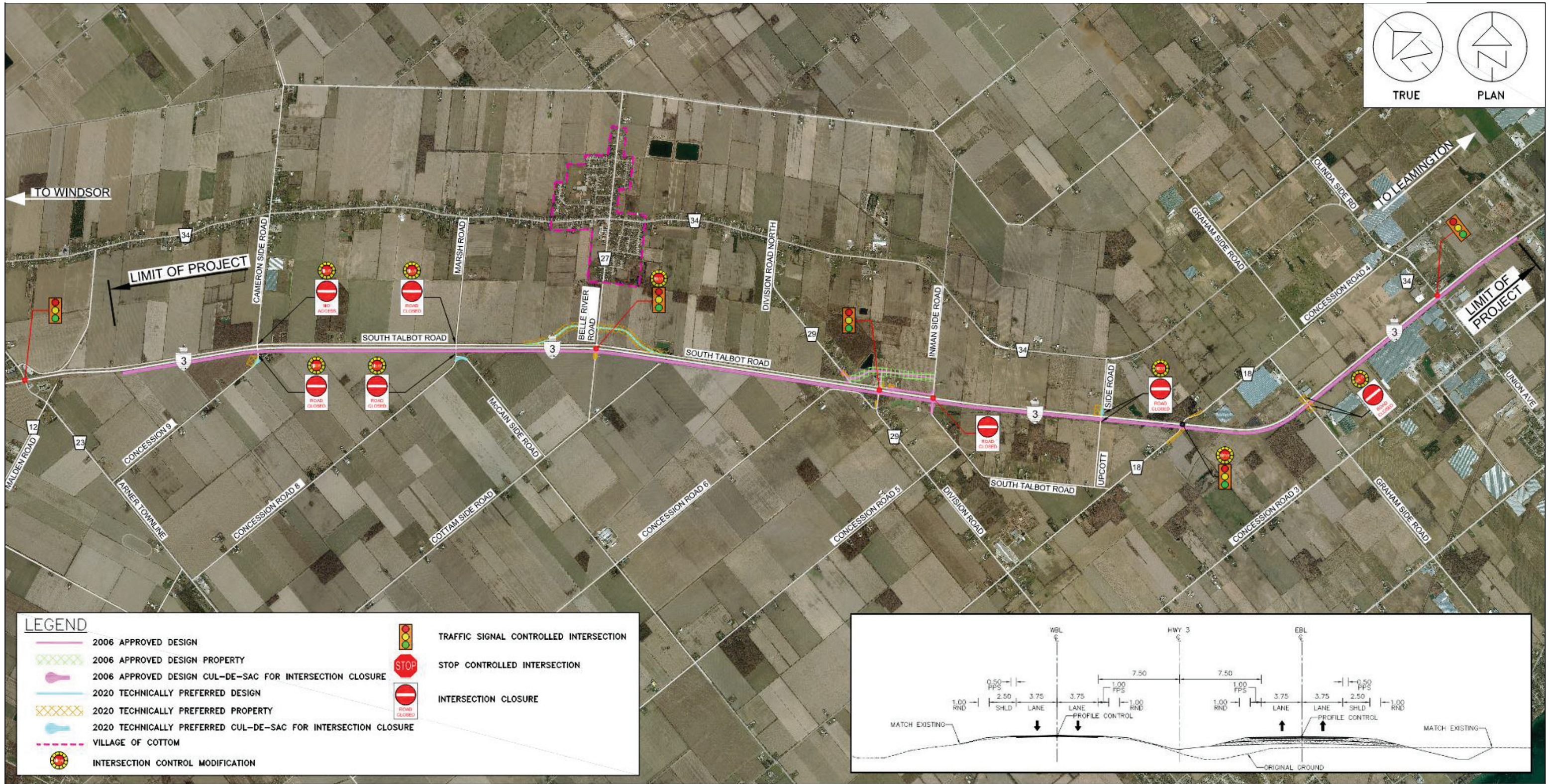
5.1.5.5 Graham Side Road

As described in **Section 5.2.2**, Graham Side Road will be closed at Highway 3 with cul-de-sacs proposed to be constructed to the north and south of Highway 3. Property would be required for the proposed cul-de-sacs.

5.1.6 2020 Technically Preferred Plan

Figure 5.7 represents graphically the 2020 Technically Preferred Plan developed to address the two significant changes identified from the transportation and environmental reviews. This figure depicts the changes discussed within **Sections 5.1.1 to 5.1.5**.

Figure 5-7 2020 Technically Preferred Plan



5.2 Modifications Considered to the 2020 Technically Preferred Plan

Following its preparation, the 2020 Technically Preferred Plan was made available for review by agencies, Indigenous communities, and the public including an Online PIC for comment. The proposed intersection closures at Cameron Side Road / Concession Road 9 and Graham Side Road were assessed further based upon comments received. **Section 6** summarizes the consultation carried as part of the Study and includes the comments received and how they were considered as part of the Study.

5.2.1 Highway 3 and Cameron Side Road / Concession Road 9

The proposed closure of Highway 3 and Cameron Side Road / Concession Road 9 could potentially impact local businesses and the farming community based on comments received from the public and Town of Kingsville. Some farmers in this area indicated that they farm/own lands on both sides of Highway 3. Consequently, the proposed closures of both Cameron Side Road / Concession Road 9 and Marsh Road / Concession Road 8 at Highway 3 could potentially impact their operations by additional out of the way travel to either Arner Townline (Essex Road 23) or Belle River Road (Essex Road 27).

In addition, traffic would need to travel further on local roads to visit the businesses situated in proximity to Cameron Side Road. As a result, the public requested other options for Cameron Side Road including the following: a stop conditioned intersection, right-in / right-out access, a bridge structure over Highway 3, and/or traffic signals. **Table 5-1** summarizes the review of the options highlighting the benefits/concerns of each.

Table 5-1 Options for the Highway 3 and Cameron Side Road / Concession Road 9 Intersection

Option No.	Option Description	Benefits/Concerns of the Option
1	Close Cameron Side Road at Highway 3	<ul style="list-style-type: none"> - Enhanced safety with traffic relocated through local roads to intersections controlled by traffic signals. - Low volume of traffic relocated, which can be distributed to the local road network. - Does not provide any direct access/egress to/from Highway 3 at Cameron Side Road. - Property acquisition required for a cul-de-sac south of Highway 3.
2	Open Cameron Side Road at Highway 3 with stop condition	<ul style="list-style-type: none"> - Safety reduced with low volume of traffic entering Highway 3. Motorists on Highway 3 would not be regularly anticipating the entering traffic. - Safety reduced and at risk for severe collisions due to difficulty in anticipating gaps on the far side of the highway across a depressed median. - Ability to access Highway 3 continues to erode as Highway 3 traffic grows in the future. Significant delays and lack of capacity to enter the Highway 3 found for the design year 2044. - Cameron Side Road intersection with South Talbot Road needs to be relocated approximately 215 m to north. Property acquisition required, similar to the relocation at Belle River Road. Possible full property buy out. - Provides full access to Highway 3 at Cameron Side Road.

Option No.	Option Description	Benefits/Concerns of the Option
3	Westbound to Northbound Right-in and Northbound to Westbound Right-out	<ul style="list-style-type: none"> - Enhanced safety with only two movements permitted by ramps at the intersection. - Remainder of low volume traffic distributed to the local road network. - Does not provide all traffic movements at the intersection. Does not address mobility of farm equipment. - Cameron Side Road intersection with South Talbot Road needs to be relocated to the north. Property acquisition required.
4	Bridge Structure over Highway 3	<ul style="list-style-type: none"> - Enhanced safety with only northbound and southbound crossing traffic permitted (lowest volume of traffic). - Remainder of low volume traffic distributed to the local road network. - Does not provide all traffic movements at the intersection; does not address commuter traffic movements. - High capital costs to implement this option for a limited volume of crossing traffic. - Cameron Side Road intersection with South Talbot Road needs to be relocated to the north or closed. Property acquisition required to the north and south of Highway 3.
5	Traffic Signals at Cameron Side Road	<ul style="list-style-type: none"> - Traffic signal warrants are not met at the intersection due to the low traffic volumes on Cameron Side Road / Concession Road 9. - While safety is enhanced with controlled access to Highway 3, this option is not as safe as Option 1. - Provides full access to Highway 3 at Cameron Side Road. - Cameron Side Road intersection with South Talbot Road needs to be relocated to the north or closed. Property acquisition required.

In re-assessing the proposed closure of Cameron Side Road / Concession Road 9 intersection with Highway 3, and in consideration of the other options considered, it was confirmed that reasonable and controlled access can be provided to the community through the local road network and at the Highway 3 intersections at Arner Townline (Essex Road 23), Belle River Road (Essex Road 27) and Division Road (Essex Road 29). Minimizing the number of highway crossings reduces the risk of collisions occurring, particularly angle or turning type collisions, and including collisions involving large farm equipment. Farm equipment operators are encouraged to use lower traffic volume municipal roads to connect to Highway 3 crossings when there is a need to go from one side of the highway to the other.

Therefore, the closure of Cameron Side Road at Highway 3 (Option 1) was carried forward as part of the 2020 Technically Preferred Plan.

5.2.2 Highway 3 and Graham Side Road

The public, Town of Kingsville, and emergency service providers expressed concerns with the proposed closure of the Graham Side Road intersection with Highway 3. The concerns expressed were related to the loss of connectivity between Cottam and Kingsville, lack of connection between Essex Road 18 and Graham Side Road south of Highway 3, and the importance of access to Highway 3 at Graham Side Road for the industries to the south.

As previously stated, either the Essex Road 18 intersection or Graham Side Road intersection with Highway 3 should be signalized and Essex Road 18 was proposed for traffic signals. This was due in part to maintaining the county road network and a collision concern identified at the existing Highway 3 and Graham Side Road intersection.

In response to these concerns, options available for the Highway 3 and Graham Side Road intersection were reviewed, and the results are summarized in **Table 5.2** with the benefits/concerns of each highlighted.

Table 5-2 Options for the Highway 3 and Graham Side Road Intersection

Option No.	Option Description	Benefits/Concerns of the Option
1	Close Graham Side Road at Highway 3	<ul style="list-style-type: none"> - Enhanced safety with traffic relocated through local roads to intersections controlled by traffic signals. - Moderate volume of traffic relocated, which can be distributed to the local road network. Improvements to other sideroads may be required for the distributed traffic. - Does not provide any direct access/egress to/from Highway 3 at Graham Side Road. - Property acquisition required for cul-d-sacs to the north and south of Highway 3.
2	Open Graham Side Road at Highway 3 with stop condition	<ul style="list-style-type: none"> - Safety reduced with moderate volume of traffic entering Highway 3. - Safety reduced and at risk for severe collisions due to difficulty in anticipating gaps for the far side traffic across a depressed median. - Delays experienced by Graham Side Road traffic to enter Highway 3 eroding safe entry practices. - Ability to access Highway 3 continues to erode as Highway 3 traffic grows in the future. - Provides full access to Highway 3 at Graham Side Road.
3	Right-in / right-out access provided for eastbound and westbound Highway 3 traffic	<ul style="list-style-type: none"> - Enhanced safety with only four movements permitted by dedicated auxiliary lane ramps at the intersection. - Remainder of moderate volume traffic distributed to the local road network. - Does not provide all traffic movements at the intersection. Does not address higher left turn movements from northbound Graham Side Road and from westbound Highway 3. Does not address crossing traffic.
4	Bridge Structure over Highway 3	<ul style="list-style-type: none"> - Enhanced safety with only northbound and southbound crossing traffic permitted (lowest volume of traffic). - Remainder of moderate volume traffic distributed to the local road network which is enhanced with the bridge structure as it provides a more direct access to the intersection at Essex Road 18. - High capital costs associated with the bridge structure. - Property acquisition required and impacts to the business in the northeast quadrant will require a reconstruction of their parking lot and entrance.
5	Traffic Signals at Graham Side Road	<ul style="list-style-type: none"> - Traffic signal warrants are met at the intersection due to the moderate traffic volumes on Graham Side Road - While safety is enhanced with controlled access to Highway 3, this option is not as safe as Option 1. - Provides full access to Highway 3 at Graham Side Road. - Property acquisition is required; however, the amount of property required would be similar to Option 1.

In re-assessing the proposed closure of the Graham Side Road intersection with Highway 3 in light of the other options considered, it was determined that the Technically Preferred Plan would be modified with traffic signals being proposed at the Highway 3 and Graham Side Road intersection (Option 5). The traffic signals proposed for Essex Road 18 intersection with Highway 3 would remain as part of the Technically Preferred Plan.

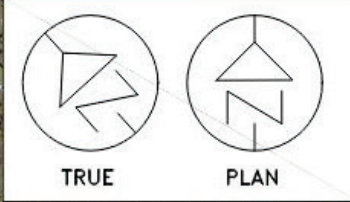
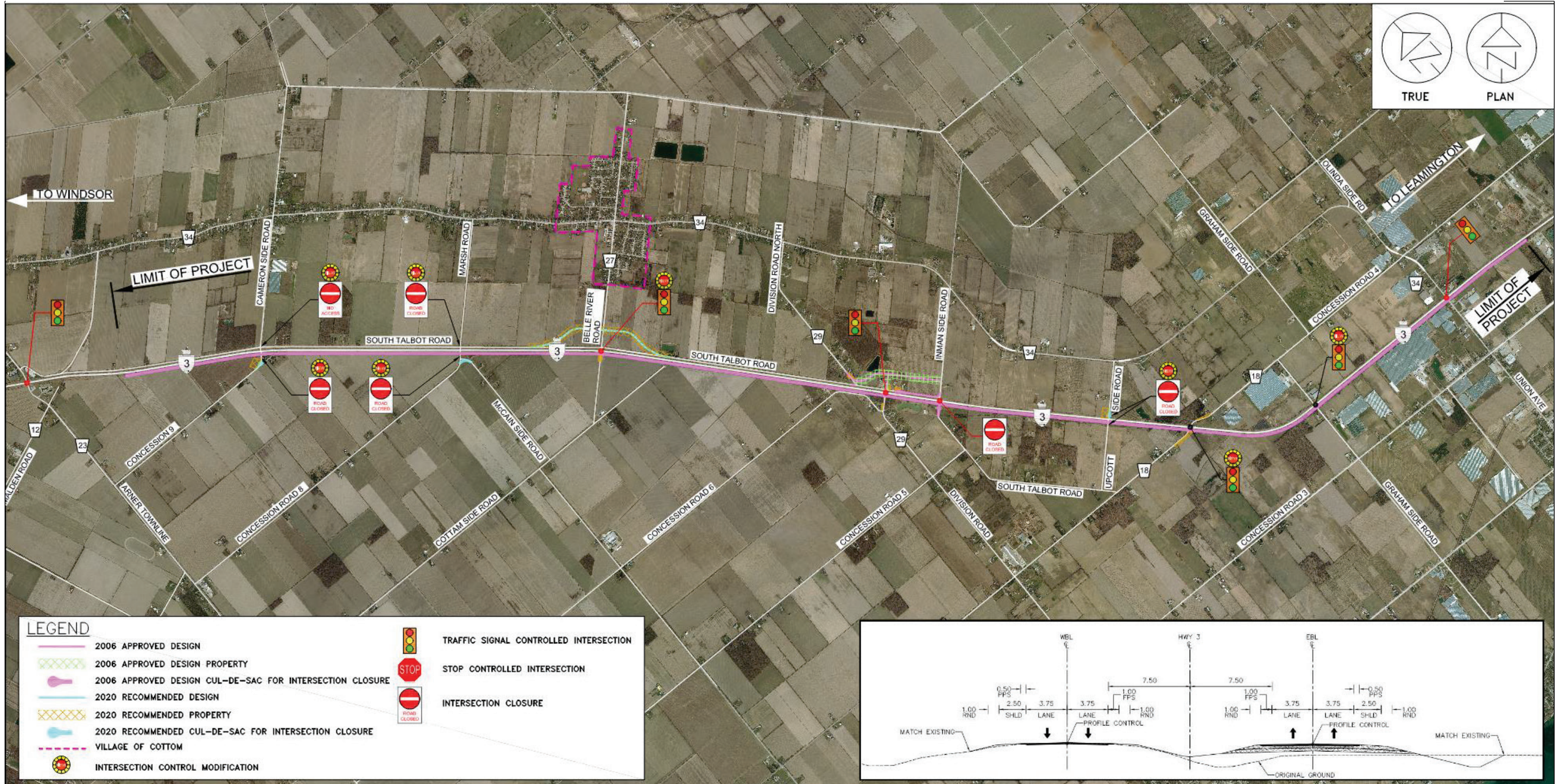
Eastbound and westbound offsetting and staggered left turn lanes would be constructed on Highway 3 to provide for the westbound to southbound and eastbound to northbound turning movements. For Graham Side Road, a combination right, through and left traffic lane would work at the intersection for northbound and southbound traffic beyond 2044. However, it was decided that a northbound to westbound and a southbound to eastbound left turn lane would be constructed along with the through/right turn lane at this intersection.

5.3 Confirmation of the 2020 Recommended Plan

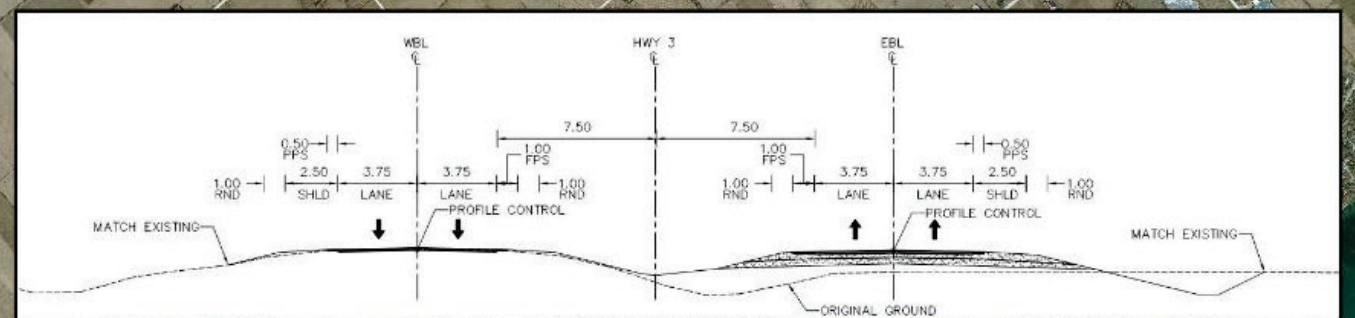
The 2020 Recommended Plan represents the consolidation of the improvements put forward by the 2006 Approved Plan as updated through the development of the 2020 Technically Preferred Plan, and as modified considering comments received during the Study. The following summarizes the planned improvements put forward as part of the 2020 Recommended Plan for Highway 3 within the Study Area and is represented graphically in **Figure 5-8**.

- A new 4-lane cross section with a 15 m depressed median on the existing alignment, with two new lanes being construction for the eastbound direction and resurfacing/ reconstruction of the existing lanes for the westbound direction.
- **Closure of Cameron Side Road/Concession Road 9, Marsh Road/Concession Road 8, Inman Side Road/South Talbot Road, and Upcott Side Road.**
- **Concession Road 8 and McCain Side Road connection and intersection removal.**
- Traffic signal replacement for the Highway 3 widening at Division Road (Essex Road 29) and Union Avenue (Essex Road 34).
- **New traffic signals at Belle River Road (Essex Road 27), Essex Road 18, and Graham Side Road.**
- **Realignment of South Talbot Road at Belle River Road (Essex Road 27)** and Division Road (Essex Road 29).
- Realignment and extension of Division Road (Essex Road 29) from the new west South Talbot Road connection to Highway 3.
- Construction of a new Unnamed road from realigned Division Road (Essex Road 29) to Inman Side Road.
- **Realignment of Essex Road 18 at Highway 3.**
- Drainage improvements including the extension of six mainline structural culverts, replacement/extension of existing centerline culverts along with the installation of additional culverts for the modifications to the local road network.

Figure 5-8 2020 Recommended Plan



LEGEND	
	2006 APPROVED DESIGN
	2006 APPROVED DESIGN PROPERTY
	2006 APPROVED DESIGN CUL-DE-SAC FOR INTERSECTION CLOSURE
	2020 RECOMMENDED DESIGN
	2020 RECOMMENDED PROPERTY
	2020 RECOMMENDED CUL-DE-SAC FOR INTERSECTION CLOSURE
	VILLAGE OF COTTOM
	INTERSECTION CONTROL MODIFICATION
	TRAFFIC SIGNAL CONTROLLED INTERSECTION
	STOP CONTROLLED INTERSECTION
	INTERSECTION CLOSURE





The preceding planned improvements that are bolded and italicized represent the significant changes to the 2006 Approved Plan. As stated in **Section 2**, only these significant changes are eligible for a Part II Order request.

5.4 Description of the 2020 Recommended Plan

The 2020 Recommended Plan illustrated in **Figure 5.8** is described in detail in this section with the associated Preliminary Design Drawings provided in **Appendix C**.

5.4.1 Highway Engineering

5.4.1.1 Horizontal Alignment

As shown in **Figure 5.8**, the existing horizontal alignment for Highway 3 will be retained and will become the centerline alignment for the future westbound traffic lanes. A parallel alignment will be created for the new Highway 3 alignment in the centre of the median at an 11.25 m offset. A second parallel alignment will be created at a 22.5 m offset for the centerline of the new eastbound traffic lanes.

There are nine sideroads intersecting with Highway 3 within the Study Area limits. In addition to the intersecting sideroads, improvements are required to the adjacent South Talbot Road at Belle River Road (Essex Road 27) and Division Road (Essex Road 29). Some of the sideroads will be closed as part of the Study; and as a result, adjustments/improvements to the existing horizontal alignments will not be required. **Table 5-3** summarizes the planned improvements for the intersecting sideroads with Highway 3.

Table 5-3 Planned Improvements at Intersecting Sideroads with Highway 3

Sideroad Location	Planned Improvement
Cameron Side Road	Closed at Highway 3 with a T intersection with South Talbot Road
Concession Road 9	Closed at Highway 3 with a cul-de-sac
Marsh Road	Closed at Highway 3 with a T intersection with South Talbot Road
Concession Road 8	Connection to McCain Side Road
Belle River Road (Essex Road 27)	Signalized intersection with Highway 3
South Talbot Road at Belle River Road (Essex Road 27)	Relocated to provide separation from the Highway 3 and Belle River Road intersection.
Division Road (Essex Road 29)	Signalized intersection with Highway 3, realigned to provide separation from South Talbot Road
South Talbot Road west of Division Road	Intersection relocated to realigned Division Road
Unnamed Road	Connection provided between realigned Division Road and Inman Side Road
South Talbot Road east of Division Road	Closed at Division Road with a cul-de-sac
Inman Side Road	Closed at Highway 3 with a connection to South Talbot Road

Sideroad Location	Planned Improvement
South Talbot Road at Highway 3	Closed at Highway 3 with a cul-de-sac
Upcott Side Road	On the north side, closed at Highway 3 with a cul-de-sac. On the south side, closed.
Essex Road 18	Signalized intersection with Highway 3, realigned to improve horizontal alignment
Graham Side Road	Signalized intersection with Highway 3
Union Avenue (Essex Road 34)	Signalized intersection with Highway 3

Details for each improvement is included within the Preliminary Design Drawings enclosed within **Appendix C**.

5.4.1.2 Vertical Alignment

The geometry for the existing Highway 3 (future westbound) vertical alignment was presented within **Section 4.1.1.1**. For the majority of the Study, the vertical profile for existing Highway 3 is at or close to 0%. Under these conditions, pavement surface drainage needs to rely upon the cross fall of the highway and the application of superelevation needs to consider surface drainage during rotation to ensure proper drainage for the range between -0.5% to 0.5%. Longitudinal drainage within the median ditch will need to be created through the rotation of the fill slopes from 8:1 to 4:1. While this profile meets current guidelines, there are challenges for the design to achieve positive and competent surface drainage.

The future westbound vertical alignment will not be modified as part of this Study. The preliminary pavement design recommendations do include a grade raise as indicated in **Table 5-4**. The grade raise will be completed without impacting the geometry of the highway profile.

Table 5-4 Existing Highway 3 Resurfacing Grade Raises

Location (Station to Station)	Township	Pavement Strategy	Grade Raise
12+200 to 17+005	Gosfield North and South	Mill 40 mm and pave 90 mm	50 mm
17+005 to 17+700	Gosfield South	Remove Asphalt, place Granular A, pave 200 mm	120 mm

The new eastbound lanes will be constructed at a 22.5 m offset from the centerline of the future westbound lanes and a 15 m depressed median will separate traffic. To provide for the possibility of a future widening into the depressed median, the new eastbound lanes will be designed and constructed with a profile to match the grade raise of the future westbound lanes. Therefore, the vertical profile geometry for the new eastbound lanes will essentially match the future westbound lanes.

5.4.1.2.1 Vertical Alignment Sideroads

There are nine sideroads intersecting with Highway 3 within the Study Area limits. As per **Table 5-3**, improvements are required at all of the intersections to implement the 2020 Recommended Plan.

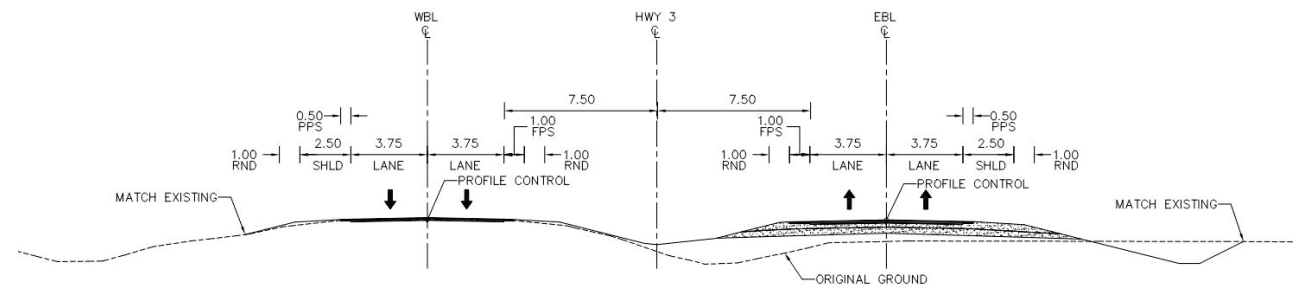
In general, the existing grading of each sideroad will remain with minor adjustments required to incorporate the improvement. Details for each improvement are included in the Preliminary Design Drawings (**Appendix C**).

5.4.1.3 Cross Section

The future cross section for Highway 3 consists of the following and is depicted in **Figure 5-9**:

- Platform Width: 35 m
- Westbound Outside Shoulder: 2.5 m with 0.5 m partially paved
- Westbound Lanes: 2 @ 3.75 m
- Westbound Median Shoulder: 1.0 m fully paved
- Depressed Median: 15.0 m (includes median shoulders)
- Eastbound Median Shoulder: 1.0 m fully paved
- Eastbound Lanes: 2 @ 3.75 m
- Eastbound Outside Shoulder: 2.5 m with 0.5 m partially paved
- Shoulder Rounding: 1.0 m (except for westbound outside shoulder, 0.5 m)
- Auxiliary Lane Width: 3.5 m

Figure 5-9 Recommended Cross Section for Highway 3



For the sideroads, cross section improvements are required at the locations where modifications and realignments are planned. There are three types of functional classifications for the sideroads. **Table 5.5** presents the geometry for the sideroads with significant modifications.

Table 5-5 Sideroad Sections

Location	Platform Width	Lane Width	Auxiliary Lane Width	Shoulder Width	Surface Type
Belle River Road (Essex Road 27)	13 m	3.5 m	3.25 m	2.5 m	Asphalt
South Talbot Road	10 m	N/A	N/A	N/A	Gravel
Division Road (Essex Road 29)	13 m	3.5 m	3.25 m	2.5 m	Asphalt

Location	Platform Width	Lane Width	Auxiliary Lane Width	Shoulder Width	Surface Type
Unnamed Road	10 m	3.5 m	N/A	1.0 m	Asphalt
Essex Road 18	13 m	3.5 m	N/A	2.5 m	Asphalt
Graham Side Road	10 m	3.5 m	3.25 m	1.0 m	Asphalt
Union Avenue (Essex Road 34)	13 m	3.5 m	3.25 m	2.5 m	Asphalt

*Lane and shoulder widths are not measurable

5.4.1.4 Auxiliary Lanes

The 2020 Recommended Plan provides for auxiliary lanes (left and right turn) to promote the separation of turning and queued traffic from through traffic. The location, type of auxiliary lanes and basic geometry of the auxiliary lanes associated with the 2020 Recommended Plan are identified in **Table 5-6**.

Table 5-6 Auxiliary Lanes on Highway 3

Location	Direction	Type	Taper (L ₁) (m)	Deceleration (L ₂) (m)	Parallel Lane (m)	Storage (m)	Offset (m)
Belle River Road (Essex Road 27)	Eastbound & Westbound	Modified Slotted Left-turn Lanes	60	235		25	3.88
Belle River Road (Essex Road 27)	Westbound	Parallel right turn lane	80		85	25	
Division Road (Essex Road 29)	Eastbound & Westbound	Modified Slotted Left Turn Lanes	60	235		25	3.75
Division Road (Essex Road 29)	Eastbound	Parallel right turn lanes	80		85	25	
Division Road (Essex Road 29)	Westbound	Parallel right turn lanes	80		85	70	
Essex Road 18	Eastbound	Modified Slotted Left Turn Lanes	60	235		25	3.84
Essex Road 18	Westbound	Modified Slotted Left Turn Lanes	60	235		30	3.84
Graham Side Road	Eastbound	Modified Slotted Left Turn Lanes	60	235		25	3.56



Graham Side Road	Westbound	Modified Slotted Left Turn Lanes	60	235		30	3.56
Union Avenue (Essex Road 34)	Eastbound	Modified Slotted Left Turn Lanes	60	235		25	3.67
Union Avenue (Essex Road 34)	Westbound	Modified Slotted Left Turn Lanes	60	235		35	3.67
Union Avenue (Essex Road 34)	Eastbound	Parallel right turn lane	80		85	35	

For sideroads, both northbound and southbound left turn lanes are planned at each of the signalized intersections except for Essex Road 18 where no auxiliary lanes are planned. The location and basic geometry of the auxiliary lanes are identified in **Table 5-7** for the 2020 Recommended Plan.

Table 5-7 Auxiliary Lanes of the Sideroads

Location	Direction	Taper (m)	Storage (m)
Belle River Road (Essex Road 27)	Northbound	100	40
Belle River Road (Essex Road 27)	Southbound	100	40
Division Road (Essex Road 29)	Northbound	50	105
Division Road (Essex Road 29)	Southbound	50	35
Graham Side Road	Northbound	50	25
Graham Side Road	Southbound	50	25
Union Avenue (Essex Road 34)	Northbound	100	120
Union Avenue (Essex Road 34)	Southbound	100	105

5.4.1.5 Cross Fall and Superelevation

Highway 3 and the sideroad improvements will be designed and constructed to meet MTO guidelines for the application of crossfall and superelevation.

Given the flat profile for Highway 3, the rotation of the pavement to achieve superelevation will require attention at the 0% cross fall locations. Drainage can be achieved by increasing the rate of rotation of the pavement through the area where crossfall ranges from -0.5% to 0.5% and by adjusting the longitudinal profile slightly in these areas to promote surface drainage.

5.4.2 Roadside Safety

A roadside safety review of proposed conditions was completed to determine warrants for roadside hazard mitigation measures. The following specific safety needs and mitigation measures were identified:

- The outside foreslope for the Highway 3 new eastbound lanes will be constructed at 6:1 except near some of the culverts where a 4:1 maximum foreslope will be constructed.
 - Crossing culvert ends located within the desirable clear zone of the new eastbound lanes will be extended beyond the desirable clear zone and thereby mitigating the hazard.
- The outside foreslopes for existing Highway 3 (future westbound lanes) are generally 4:1 or flatter except in some areas around the existing culvert inlets.
 - Slope flattening with surplus material will be utilized to flatten the slopes where possible.
 - Crossing culvert ends located within the desirable clear zone of the future westbound lanes will be extended beyond the desirable clear zone. These hazards will be mitigated during the design.
- The median slopes will vary to provide positive drainage and the maximize slope will be 4:1. Roadway protection will be installed on the median side of the future westbound lanes for the Highway 3 horizontal curve between Essex Road 18 and Graham Side Road.
- Roadway protection will be added along the new eastbound lanes near Concession Road 9 to permit the grading to be modified to protect the white oak trees.

5.4.3 Traffic Signals and Illumination

New traffic signals and partial illumination to accommodate the widening of Highway 3 will be installed at the intersections with Belle River Road (Essex Road 27), Division Road (Essex Road 29), Essex Road 18, Graham Side Road and Union Avenue (Essex Road 34). Full illumination of Highway 3 within the Study Area is not warranted. Full illumination will be installed for the transition from four to two-lanes east of Union Avenue (Essex Road 34).

5.4.4 Traffic Engineering

The 2020 Recommended Plan addresses the significant changes to traffic operations for the 2006 Approved Plan as presented in **Section 4.1.4.5**. Traffic signals will be provided at the warranted intersections of Belle River Road (Essex Road 27), Division Road (Essex Road 29), Essex Road 18, Graham Side Road and Union Avenue (Essex Road 34). In addition, the operational concerns for the intersections at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, and Upcott Side Road would be addressed through their closure at Highway 3.

5.4.5 Pavement and Foundations

A recommended pavement design has been developed for existing Highway 3 (future westbound traffic lanes) and the new eastbound traffic lanes. The pavement design consists of a flexible pavement (asphalt) with granular base. Recommendations for the pavement related to the work required to the municipal sideroads is still under development.



5.4.6 Drainage and Hydrology

Surface drainage of the existing highway (future westbound) will generally be retained as part of the 2020 Recommended Plan. Surface drainage for the new eastbound lanes will replicate the existing highway surface drainage.

With the construction of the four-lane cross section with the 15 m depressed median, a median ditch will be designed and constructed. The majority of the existing highway profile is set at or close to 0% and thereby providing no natural longitudinal drainage. In developing the preliminary design, the median ditch profile has been set to a minimum of 0.4% and the profile is generated by rotating the foreslopes from a minimum of 8:1 to a maximum of 4:1. Drainage within the median will be conveyed through catchbasins and storm sewers to the new outside ditch along the south side of Highway 3.

The median catchbasins will serve as outlets for subdrains to be constructed as part of the planned pavement structure.

The existing municipal drain systems throughout the Study Area will be retained but modified in certain locations. The existing municipal drain systems within the Study Area are identified in **Figure 5-10 Municipal Drain and Fish Habitat**. **Table 5-8** lists the areas where the municipal drains are impacted directly by the 2020 Recommended Plan. Works to a municipal drain fall under Section 78 of the *Drainage Act*. For the Study Area, the Town of Kingsville is responsible for all municipal drains. For any owner of lands to make changes to the municipal drain, a proposal/petition needs to be put forth to the Town of Kingsville. Upon receipt, the Town appoints a drainage engineer to produce a report for the undertaking which would include an assessment of all costs.

The report considers all landowners that benefit from the municipal drain and the improvements proposed. It is important that all parties that benefit from the municipal drain can review and comment to the proposed changes that are being undertaken to the shared drain – typically through a site visit and review of the report. This includes circumstances where an owner may be modifying/altering/improving the drain within their own lands at their own cost. The report will ultimately be voted on either by council or a municipal drainage board/subcommittee for adoption through a bylaw.

Table 5-8 Municipal Drain Impacts

Drain	Location (Station)	Township	Culvert No.
Barlow Drain	11+611	Gosfield North	C1
9th Concession Road Drain	12+481	Gosfield North	C2
9th Concession Road Drain	12+649	Gosfield North	C3
8th Concession Road Drain	14+625	Gosfield North	SC2
8th Concession Road Drain	14+870	Gosfield North	SC4
Cottam Side Road Branch of the 7th Conc. Road Drain	16+170	Gosfield North	SC5
East Part 7th Conc. Road Drain	16+900	Gosfield North	SC6
No. 5 Drain	17+882	Gosfield North	C4

Boose Drain	10+015	Gosfield South	SC7
Old No. 5 Drain	10+929	Gosfield South	C5
North Branch of the E. Bt. No. 47 Drain	11+063	Gosfield South	C6
East Branch of the No. 47 Drain	11+367	Gosfield South	C7
East Branch of the No. 47 Drain	11+661	Gosfield South	SC8
Matlock Drain	12+122	Gosfield South	C8
Matlock Drain	12+273	Gosfield South	C9
Matlock Drain	12+482	Gosfield South	C10
Matlock Drain	12+890	Gosfield South	C11
4 th Conc. Road Drain East of Division Rd	13+743	Gosfield South	C12
Wallace Fox Drain	14+209	Gosfield South	C13
Lane Drain	15+195	Gosfield South	C14
Melville Bruner Drain	15+606	Gosfield South	C15
Melville Bruner Drain	16+338	Gosfield South	C16
Melville Bruner Drain	17+027	Gosfield South	C17
Melville Bruner Drain	17+311	Gosfield South	C18

To accommodate the four-lane highway platform, culvert extensions are required to the south and north. There is one structural culvert and seven non-structural culvert replacements identified due to condition, hydraulic capacity, or conflicts with the planned work. There is one culvert being eliminated. As part of implementing the 2020 Recommended Plan, changes to the municipal road network are required. These changes would necessitate the installation/modification of 18 culverts.

Table 5-9 summarizes the planned culvert changes required for conveying drainage within the Study Area.

Table 5-9 Recommendations for the Culverts in the Study Area

Culvert No.	Planned Work	Notes/Description
C1	Extension	Work to be completed as part of the work in Phase 3, Contract 1 (Contract 2020-3006)
C2	Replacement	Replace with 62.2m new culvert and a catch basin in the median
C3	Extension	29.5m extension south and 3.0m extension north
C4	Extension	34.7m extension south and 3.2m extension north
C5	Extension	33.1m extension south and 3.8m extension north
C6	Extension	31.9m extension south
C7	Extension	33.0m extension south and 3.4m extension north
C8	Replacement	Replace with 55.0m new culvert
C9	Replacement	Replace with 55.0m new culvert
C10	Eliminate	Remove culvert and provide drainage through the south ditch



C11	Extension	Remove 2.0m from south end, 26.8m extension south and add a catchbasin for the median
C12	Extension	21.8m extension south and 3.0m extension north
C13	Extension	32.2m extension south and 3.2m extension north
C14	Relocation	Relocate 13m east of existing with a 61.3m new culvert
C15	Replacement	Replace with 53.7m new culvert
C16	Replacement	Replace with 58.3m new culvert
C17	Relocation	Relocate 5m east of existing with a 74.2m new culvert
C18	Extension	21.0m extension south and 1.3m extension north

5.4.6.1 Storm Water Management

Stormwater management will be replicated and implemented for the Study Area through a combination of triangular shape and rectangular shape flat-bottom grassed ditches and rock check dams. For the grass ditches to provide an effective water quality enhancement function, they need to minimize flow depths and velocities and maximize the contact area between the water and the swale perimeter.

Triangular shape v-notch swales will be constructed inside the highway median between the existing highway and the new eastbound lanes. Median swales will be constructed to new ditch inlets with storm sewer laterals to convey the median runoff to the south side of the highway. The median ditch will collect and treat runoff from the median highway traffic lanes and shoulders.

Grass ditches, with a minimum of 1.0 m wide bottom will be installed along the south limits of the highway. Rock check dams, 0.3 m high, will be constructed along the ditch including one unit at the downstream end of each ditch prior to the outlet to a municipal drain. No rock check dams would be constructed within the municipal drains.

5.4.6.2 Structural Culverts

Of the eight existing structural culverts within the Study Area, two will be abandoned, five will be extended, and one will be replaced. Structural culvert SC1 conveys the 9th Concession Drain under Concession Road 9 which will be abandoned at Highway 3. Structural culvert SC3 conveys the 8th Concession Drain under Concession Road 8 which will be abandoned at Highway 3. Both culverts are to be retained as part of the 2020 Recommended Plan with grading surrounding the culverts to remain in place. The rationale for this decision is based on the culverts being in exceptional condition and there is a possibility that these sideroads could be opened to Highway 3 again in the future.

Table 5-10 summarizes the planned work to be completed for the remaining six culverts. Five of the culverts will be inspected and repaired, cleaned out to set the drainage profiles and extended with a rigid frame box culvert to permit the widening of Highway 3. Structural culvert SC5 will be removed and replaced with a box culvert approximately 27 m to the east of the existing culvert. This culvert replacement is due to its proximity to the signalized intersection of Highway 3 and Belle River Road (Essex Road 27).

Table 5-10 Planned Improvements to the Structural Culverts

Culvert No.	Site No.	Structure Name	Improvement /Culvert Type	Size: W x H (m)	Length Required (m)
SC2	06-421-C	8th Concession Drain crossing of Highway 3	Extension Concrete Box	3.66 x 1.83	24.6
SC4	06-423-C	Cottam Side Road Branch of 7th Concession Drain	Extension Concrete Box	3.05 x 1.83	30.2
SC5	06-426-C	Cottam Side Road Branch of 7th Concession Drain	New Concrete Box	3.05 x 1.52	63.0
SC6	06-427-C	East Part 7th Concession Road Drain	Extension Concrete Box	3.66 x 1.83	38.4
SC7	06-429-C	Boose Drain	Extension Concrete Box	3.05 x 1.83	36.5
SC8	06-432-C	East Branch of the No. 47 Drain	Extension Concrete Box	3.05 x 1.52	28.0

6. Consultation Carried Out as Part of The TESR Review Process

As part of carrying out the review of the 2006 approved TESR and PDR for the widening of Highway 3 from 1.2 km east of Arner Townline (Essex Road 23) easterly to 1.1 km east of Union Avenue (Essex Road 34) in Essex County, review agencies, Indigenous communities, and the public were consulted through various methods resulting in significant comments being received, which were considered as part of finalizing the 2020 Recommended Plan. The consultation carried out was in accordance with MTO's Class Environmental Assessment for Provincial Transportation Facilities (2000) to achieve the following principles:

- All potentially interested review agencies, Indigenous communities, and the public including those most directly affected were notified (**Section 6.1**)
- Timely, appropriate, and user-friendly opportunities for input were provided (**Section 6.2**)
- All input received was considered and responded to as part of finalizing the 2020 Recommended Plan (**Section 6.3**).

Each of the preceding consultation principles are further elaborated upon in the following subsections.

6.1 Review Agencies, Indigenous Communities, and the Public Consulted

Local Members of Provincial Parliament (MPPs), review agencies, Indigenous communities, and the public were consulted as part of the Study to ensure they were made aware of it, had an opportunity to provide comments on it, and be responded to. **Appendix L** includes the comprehensive contact list.

Table 6-1 List of Review Agencies, Indigenous Communities, and the Public Consulted

Local Members of Provincial Parliament	
<ul style="list-style-type: none"> • Taras Natyshak, Essex 	
Provincial Ministries and Agencies	
<ul style="list-style-type: none"> • Ministry of Environment, Conservation and Parks • Ministry of Natural Resources and Forestry • Ministry of Heritage, Sport, Tourism and Culture Industries: Culture Division 	<ul style="list-style-type: none"> • Ministry of Agriculture, Food and Rural Affairs • Ontario Provincial Police
Municipalities and Regional Agencies	
<ul style="list-style-type: none"> • County of Essex • Town of Kingsville • Town of Essex • Town of Lakeshore • Essex Region Conservation Authority • Essex Windsor Emergency Medical Services 	<ul style="list-style-type: none"> • Greater Essex County District School Board • Windsor-Essex Catholic District School Board • Windsor Essex Student Transportation Services • Badder Bus Service
Indigenous Communities	

<ul style="list-style-type: none"> • Aamjiwnaang First Nation • Delaware First Nation • Walpole Island First Nation • Chippewas of Kettle and Stony Point First Nation 	<ul style="list-style-type: none"> • Chippewas of the Thames First Nation • Munsee-Delaware Nation • Oneida Nation of the Thames • Caldwell First Nation
Utilities	
<ul style="list-style-type: none"> • Hydro One • Bell Canada • Cogeco Cable • Enbridge O/A Union Gas • Enbridge Gas Distribution • Municipality of Leamington 	<ul style="list-style-type: none"> • ELK Energy • Telus • Rogers • Luxline Network • Town of Kingsville • County of Essex
Public	
<ul style="list-style-type: none"> • Essex County of Federation of Agriculture • South Essex community Council • Property owners along Highway 3 	<ul style="list-style-type: none"> • Residents and businesses in the immediate vicinity of the Study's limits • Other public members who express an interest in the Study

6.2 Methods, Frequency and Timing of Consultation

Several communication methods were utilized during the Study for consulting with review agencies, Indigenous communities, and the public, which were tailored to each group.

6.2.1 Local Members of Provincial Parliament

The primary method for communicating with the local MPP was direct correspondence issued by GHD on behalf of MTO. The letters to the local MPP were sent a minimum of two weeks prior to each Notice being published in area newspapers. The letters were issued to the Local MPP as follows:

- Notice of Commencement on December 20, 2019
- Notice of Online Public Information Centre (PIC) on June 1, 2020
- Notice of Addendum on July 15, 2021

6.2.2 Review Agencies

The primary method for communicating with review agencies (e.g., ministries, departments, agencies, municipalities, etc.) was written and email correspondence issued by GHD on behalf of MTO. Letters to review agencies were issued after the local MPP was notified and coincided with each Notice being published in the area newspapers as follows:

- Notice of Commencement on January 14, 2020
- Notice of Online PIC on June 16, 2020
- Notice of Addendum on July 28, 2021

In addition to issuing the preceding notifications, the following review agency meetings were held during the Study:

Table 6-2 Review Agency Meetings Held During the Highway 3 Study

Meeting Date	Review Agency(ies)	Meeting Purpose
February 26, 2020	County of Essex and Town of Kingsville	Present the history of Highway 3, the early results from the traffic engineering and planning work completed, and the 2020 Technically Preferred Plan.
March 31, 2020	County of Essex	Discuss the proposed road closures and detours at the Intersection of County Road 18 and Highway 3.
August 19, 2020	County of Essex and Town of Essex	Discuss the results of the Online PIC and address the comments received from the County of Essex and the Town of Kingsville.
October 13, 2020	Town of Kingsville	Present the modifications to the 2020 Technically Preferred Plan in response to comments received during the Study prior to confirming the 2020 Recommended Plan to the Town of Kingsville Council.
October 21, 2020	County of Essex	Present the modifications to the 2020 Technically Preferred Plan in response to comments received during the Study prior to confirming the 2020 Recommended Plan to the County of Essex Council.
October 26, 2020	Ministry of the Environment, Conservation and Parks	Present the findings from the terrestrial Investigation including the assessment of butternuts, the potential for hibernacula and habitat for eastern foxsnake, barn swallow nesting activity, bat acoustic surveys, and general species at risk findings.

Appendix M includes the presentations/notes from the preceding review agency meetings.

6.2.3 Indigenous Communities

The primary method for communicating with Indigenous communities was written and email correspondence. However, unlike review agencies where GHD issued the correspondence, MTO issued all correspondence to Indigenous communities on their letterhead. The letters were issued on the same date as the review agency letters:

- Notice of Commencement on January 14, 2020
- Notice of Online PIC on June 16, 2020
- Notice of Addendum on July 28, 2021

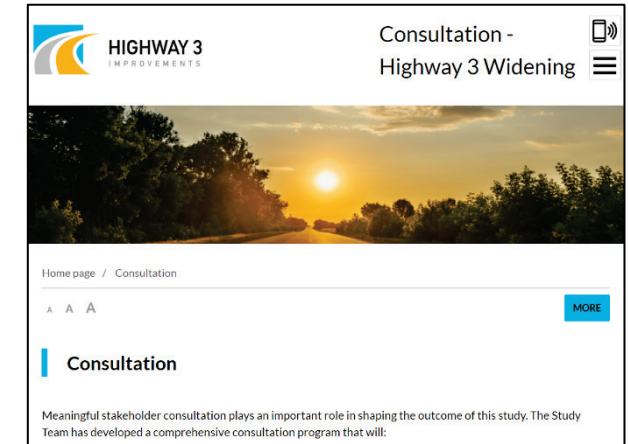
In addition to the preceding notifications, MTO emailed all the notified Indigenous communities on May 28, 2021 regarding their interest in being engaged with respect to the Stage 2 Archaeological Assessment field work.

6.2.4 The Public

The public was consulted through several methods including a Project website, newspaper advertisements, social media, an Online PIC, written and email correspondence, and telephone calls.

Project Website

A Project website (<https://highway3widening.ca/consultation/>) was established at the beginning of the Study and kept current with updates. The Project website included, among other things, an overview of the Study and background information and provided access to consultation materials including notices, the online PIC, public reports, links, and who to contact for additional information or to submit comments.



Print Newspaper Advertisements

Traditional print advertisements of the three Study notices were placed in local newspapers including the Essex Free Press and the Leamington Southpoint Sun. Further, the Notice of Commencement was also published in the Kingsville Reporter; however, between the Notice of Commencement and Notice of Online PIC the Kingsville Report ceased its publication. Notifications were published on the following dates:

- Notice of Commencement (Appendix N)
 - Leamington Southpoint Sun on January 15, 2020
 - Essex Free Press on January 16, 2020
 - Kingsville Report on January 14, 2020
- Notice of Online PIC (Appendix O)
 - Leamington Southpoint Sun on June 17, 2020
 - Essex Free Press on June 18, 2020
- Notice of Submission of TESR Addendum
 - Leamington Southpoint Sun on July 28, 2021
 - Essex Free Press on July 29, 2021

Social Media and Media Articles

In addition to direct notification methods, the Online PIC was advertised through County of Essex and Town of Kingsville’s Facebook channels on June 17 and June 19 respectively along with a post on the County’s website news section on June 17. Further, CTV News Channel (Windsor) communicated the information of the Online PIC with an article entitled “New website launched regarding plans to widen Highway 3 in Essex County” on July 18, 2020 with a link to the Online PIC. Appendix O includes the third part postings.

Online Public Information Centre

As part of the TESR Addendum Review process, an in-person PIC was planned. However, since the consultation activities took place during emergency orders prohibiting public gatherings to limit the spread of COVID-19, an in-person gathering was not possible. As a result, the traditional in-person PIC was replaced with a self-directed Online PIC (June 18 to July 3, 2020). The Online PIC followed a format similar to an in-person drop-in style PIC where participants are able to review the information at their own pace and provide comments at the end. With this approach in mind, the Online PIC included the following features:



- **Welcome Page:** A clear and simple homepage welcoming participants, which outlined the purpose of the Online PIC and provided instructions on how to navigate the Online PIC including how to provide their comments.
- **Study Information:** The panel displays initially developed for the originally planned in-person PIC were re-purposed for developing the Study's information content. The following five content web pages were established for the Online PIC:
 - **Home Page:** Welcome and navigating the Online PIC, purpose of the Study and Online PIC, Project Team contact information
 - **Study History:** An overview of the 2006 Approved Plan and the TESR Review Process.
 - **Study Area Conditions:** Details on the Transportation Conditions and Environmental Conditions within the Study Area.
 - **Recommended Improvements:** Outlines changes to the 2006 Approved Plan, the 2020 Technically Preferred Plan, and a summary of the proposed changes including specific content on traffic signals and intersection closures.
 - **Next Steps and Thank you:** next steps, thank you and comment form.
- **Videos:** Two separate short videos were embedded on a couple of the web pages to further explain the content being conveyed. For example, the video for the Welcome Page would provide a human connection with the participants, explain the potentially unfamiliar format being used, and wish participants well in this uncertain time.
- **Comment Form:** At the bottom of each of the webpages there was an embedded comment form included for participants to provide their feedback on the information presented for consideration by the Project Team. In addition, on the last page of the self-directed Online Public Consultation, a complete form was embedded, as well as a downloadable PDF Comment Form that could be emailed back to the Project Team for those interested in providing their comments in an alternative format.
- **Registration for Project Notifications:** Participants were able to provide their contact information to receive future Study notifications if they so wished.
- **Analytics:** Analytics were embedded as part of the Online PIC. The analytics allowed Online PIC web traffic information to be captured including unique daily visitors, length of time on the Online PIC, geography (by municipality) of reviewers, etc.

Appendix O provides the Online PIC content.

Since this was an Online PIC only event, the previously mentioned notifications were modified to provide instructions on what to do if an alternative format was required by an individual. For example, there could be public members who may not have access to the internet or who have accessibility needs. In these cases, arranging a separate phone call and/or sending a print copy of the Online PIC information for their review may be preferable to that public member.

During the time that the Online PIC was "live" (June 18 to July 3, 2020) for review and comment by the public, there were a total of

- 1,718 unique visitors.

- 204 comments received.
- 186 views of the Introduction Video; and
- 71 views of the Technically Preferred Plan Video

Visitors accessed the Online PIC using their desktop (43%), mobile (29%), and tablet (28%) devices. All 1,718 visitors accessed the Online PIC through devices in Ontario. The top locations interested in the Study were from the following locations:

- Windsor (378 users)
- Cottam (214 users)
- Kingsville (146 users)
- Toronto (142 users)
- Leamington (93 users)
- Essex (53 users)
- London (32 users)

Correspondence and Telephone Calls

The Notice of Online PIC was also distributed to area residents/businesses through the Canada Post Admail service. The distribution took place between June 15 and 19, 2020 and 4,734 area residents/businesses received the Notice of Online PIC directly (**Appendix O**).

Property owners directly impacted by the 2020 Technically Preferred Plan were also issued individualized letters with three attachments: The Notice of Online PIC, a figure illustrating potential private property requirements specific to the impacted owner, and MTO's Right of Way Designation and Property Acquisition for Highway Projects brochure. In total, 25 property owners received an individualized letter from GHD on behalf of MTO (**Appendix O**).

In addition, written and email correspondence were issued, and telephone calls were held with the public throughout the Study (e.g., responding to comments, answering questions, etc.).

6.3 Consideration of Comments Received

All comments received during the Study were considered as part of the TESR Review process. Most of the comments received during the Study were from the public followed by review agencies with only one comment being received from Indigenous communities. The comments received and how they were considered as part of the Study are summarized in the sections that follow via a series of tables organized by participant group in accordance with **Section 4.3.7** of the MECP's Code of Practice for Preparing and Reviewing Environmental Assessments in Ontario (January 2014):

- **Table 6-3** summarizes the comments received from review agencies through meetings/presentations, correspondence (written and electronic), and telephone calls and how they were considered (organized by individual review agency)



- **Table 6-4** summarizes the comments received from the public through correspondence (written, including Online PIC comment forms, and electronic) and telephone calls and how they were considered (organized by type or issue).

Appendix P provides a complete list of comments received during the Study and how they were considered.

6.3.1 Review Agencies

Nine of the 28 review agencies notified of the Study responded (**Table 6-3**). Those who responded included the Ministry of Natural Resources and Forestry (MNRF), Ministry of Environment, Conservation and Parks (MECP), Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI), Hydro One, County of Essex, Municipality of Leamington, Town of Essex, Town of Kingsville, and Essex Region Conservation Authority (ERCA). In terms of review agencies, most of the comments received were from the County of Essex and Town of Kingsville because of the implications of the proposed improvements on the local area road network.

Table 6-3 Summary of Review Agencies Comments and How They Were Considered in the TESR Review Process

Review Agency	Summary of Comments Received	Consideration of Comments Received
MNRF	MNRF's primary areas of interest and involvement relating to EA studies are determined based on the Ministry's mandate relative to natural resources including (1) Natural Heritage and <i>Endangered Species Act (ESA)</i> interests; (2) Petroleum Wells & Oil, Gas and Salt Resource Act; and (3) Public Lands Act & Lakes and Rivers Improvement Act	The potential impacts to Natural Heritage and Species at Risk were determined through a review of background information, Fisheries and Terrestrial field studies, and an impact assessment. There are no petroleum wells within the Study Area. The Study is a Provincial undertaking; therefore, the Study is not subject to the <i>Public Lands Act</i> or <i>Lakes and Rivers Improvement Act</i> .
MECP	Requested that Ministry's Species at Risk staff (SARontario@ontario.ca) be consulted on the Study.	Ministry's Species at Risk staff were consulted as part of the Study.
MECP	Requested that the Essex Region Source Water Protection Plan be reviewed as part of the Study.	The Essex Region Source Water Protection Plan was reviewed as part of the Study.
MECP	Requested that the Butternut Health Assessment (BHA) Report prepared as part of the Study be submitted to MECP for review.	The BHA Report was submitted to MECP for review.
MECP	Recommended that tree clearing activities avoid the bat maternity window (April through September).	Avoiding tree removal during the bat maternity roosting season (April 1 to September 30) was included as part of the proposed mitigation measures.
MECP	Notified that barn swallow registration may be required, depending on the final scope of the culvert works.	If required, then a Notice of Activity for impacts to Barn Swallow habitat under the <i>Endangered Species Act</i> will be registered.

Review Agency	Summary of Comments Received	Consideration of Comments Received
MECP	An Information Gathering Form may not be required depending upon the Ministry's review of the Terrestrial Report and preliminary findings.	The Terrestrial Report and preliminary findings were submitted to MECP for review.
MECP	Requested information on the Study's proposed culvert works.	Information on the Study's proposed culvert works was submitted to MECP for review.
MHSTCI	Requested that MHSTCI's <i>Criteria for Evaluating Archaeological Potential</i> be completed to determine if an archaeological assessment is required for this study.	A separate stand-alone Stage 1 Archaeological Assessment (AA) was carried out as part of the Study. Following completion of the Stage 1 AA and review of the report by MHSTCI, further discussions are underway to confirm the Stage 2 AA approach prior to it being initiated.
MHSTCI	Requested that MHSTCI's <i>Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes</i> be completed to determine if a Cultural Heritage Evaluation Report (CHER) is required.	MHSTCI's <i>Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes</i> was completed, which confirmed that the Study will not impact cultural heritage resources. Therefore, no CHER is required.
MHSTCI	All technical cultural heritage studies and their recommendations are to be addressed and incorporated into the Study.	All technical cultural heritage studies and their recommendations were incorporated into the Study.
Hydro One Networks Inc.	Approved design in place for construction of a 3-circuit pole line on County Road 34 crossing Highway 3.	The location of the crossing and other facilities in the Highway 3 Study Area was requested so they could be appropriately considered in the 2020 Recommended Plan.
County of Essex	Requested information on the effect of the proposed intersections closures on County roads.	Low volume road closures will have minimal impact on County roads.
County of Essex	Requested information on whether roundabouts will be considered as part of the Study.	Roundabouts were reviewed at all intersections but were not included as part of the 2020 Recommended Plan.
County of Essex	Requested details on the 2020 Technically Preferred Plan	The requested details on the 2020 Technically Preferred Plan were provided.
County of Essex	Requested a summary of the Online PIC results.	A summary of the Online PIC results was provided.
County of Essex	Requested the current and design year projected traffic volumes generated as part of the Study.	The requested information on projected traffic volumes will be provided.
County of Essex	The County has no existing or planned facilities within the Study Area.	The existing conditions update reflected this information.



Review Agency	Summary of Comments Received	Consideration of Comments Received
Municipality of Leamington	Requested that the eastern Study Area be extended to Essex Road 31.	Since the 2006 Approved Plan limits are to Union Avenue (Essex Road 34), the eastern Study Area was not extended, but kept consistent for the TESR Addendum Review process.
Municipality of Leamington	Requested information on whether roundabouts will be considered as part of the Study.	Roundabouts were reviewed at all intersections, but they were not included as part of the 2020 Recommended Plan.
Municipality of Leamington	Requested if consideration would be given to an "all ages and abilities off-road trail" cycle/pedestrian facility as part of the Study.	Highway 3 is classified as a controlled access highway with a posted speed limit of 80km/h and this stretch of Highway is not part of the County Wide Active Transportation System or the Province Wide Cycling Network. Therefore, an "all ages and abilities off-road trail" cycle/pedestrian facility was not considered as part of the Study. However, the signalized intersections will be Accessibility for Ontarians with Disabilities Act (AODA) compliant and will provide opportunities for pedestrians and cyclists to cross Highway 3.
Municipality of Leamington	Requested consideration of the industrial areas within the municipality relative to the Study Area.	The existing and projected industrial, commercial, and residential growth were considered as part of the Study and traffic projections.
Town of Essex	Requested a summary of the Online PIC results.	A summary of the Online PIC results was provided.
Town of Kingsville	The Township has a watermain crossing of Highway 3 between Graham Side Road and Union Avenue and south of Highway 3 at Marsh Road. The Township may want to include additional ducts crossing Highway 3. Follow-up required in details design.	Utility mark-up information for all existing and proposed crossings was requested and documented as part of the existing conditions update.
Town of Kingsville	Requested the current and design year projected traffic volumes generated as part of the Study.	The requested information on projected traffic volumes was provided.
Town of Kingsville	The Township prefers that the intersection of Highway 3 and Graham Side Road remain open and signalized.	The 2020 Recommended Plan includes traffic signals at Highway 3 and Graham Side Road.
Town of Kingsville	A project is underway to reconstruct Graham Side Road south of Highway 3. The improvements to Graham Side Road will appear in the Towns 2021 infrastructure plan.	Requested that the Township provide the traffic data that was collected as part of that project.
ERCA	Requested that all culverts are sized appropriately for drainage infrastructure subject to current public safety	All structural culverts within the Study Area's limits were assessed from a

Review Agency	Summary of Comments Received	Consideration of Comments Received
	standards for flooding and erosion and should reflect current best practices found in the region.	hydraulic capacity perspective and sized appropriately.
ERCA	Requested that any modelling completed for watercourses during the Study be shared with ERCA.	The Structural Culvert Hydrology and Hydraulic Report (Draft), July 3, 2020, was provided, which documents the modelling completed for the eight structural culverts within the Study Area.
ERCA	Requested that all culverts have updated hydraulic performance assessments completed.	The Structural Culvert Hydrology and Hydraulic Report (Draft), July 3, 2020, was provided.
ERCA	Requested that the Study reflect the Provincial Policy Statement (2020).	The Study has been carried out within the context of applicable provincial legislation, policies, and procedures.
ERCA	Requested that any biological inventory works from the Study be shared with the MNR (Natural Heritage Information Centre, Aylmer District) and ERCA.	As requested, the information was provided to both MNR and ERCA.
ERCA	Requested that County of Essex Official Plan Schedule B2 be used to inform the location of any required compensation habitat.	Impact management measures for potential habitat loss have been recommended and follow up with appropriate agencies as required will continue to be carried out.
Cogeco Cable	One aerial fiber one optic cable crossing at Highway 3 at Graham Side Road, and three buried fiber optic cables at Highway 3 at Arner Tline Road, South Talbot Road, and Union Avenue.	Utility mark-up information was requested and documented as part of the existing conditions update.
Bell Canada	Utility mark-ups provided.	Utility mark-up information was documented as part of the existing conditions update.
Gosfield North Communications Cooperative Ltd.	Five crossings in four locations including two crossings at Highway 3 and Marsh Side Road and one crossing at Highway 3 and Belle River, Division Road (6W) and Inman Side Road.	Utility mark-up information was requested and documented as part of the existing conditions update.
Enbridge O/A Union Gas	Seven gas mains within the Highway 3 Right Of Way or within 50 m of it along the side roads including Cameron Road West, Division Road, east of Inman Side Road, Upcott Side Road, Road 4 East, Graham Side Road, and County Road 34.	Utility mark-up information was requested and documented as part of the existing conditions update.
Enbridge Gas Distribution Inc.	Enbridge Pipelines Inc (crude Oil) does not have any assets in the Study Area.	The existing conditions update reflected this information.
ELK Energy	E.L.K. Energy has no existing or planned facilities within or near the Study Area.	The existing conditions update reflected this information.



Review Agency	Summary of Comments Received	Consideration of Comments Received
Rogers Communications	Rogers Communications has no existing or planned facilities within or near the Study Area.	The existing conditions update reflected this information.
Telus Communications Inc.	Telus Communications Inc. has no existing or planned infrastructure within or near the Study Area.	The existing conditions update reflected this information.

6.3.2 Indigenous Communities

One of the eight Indigenous communities notified of the Study responded. In December 2020, Walpole Island First Nation met with MTO to discuss the Highway 3 widening in the Town of Essex (from 0.8 km west of Ellis Side Road easterly to 2.2 km east of Essex County Road 23) Detailed Design, Class EA and Construction Design Build Contract 2020-3006. Walpole Island First Nation expressed an interest in further participation on Ministry projects moving forward.

In June 2021, the Caldwell First Nation replied to MTO's May 28, 2021, email indicating their interest in the Stage 2 AA. Coordinating the Caldwell First Nation's involvement in the Stage 2 AA field work is ongoing.

Engagement with Indigenous communities will be ongoing as the Study progresses.

6.3.3 Public

Over 200 comments were received from the public during the Study with most of their comments in response to the Online PIC being "live". Considering the extensive number of comments received, they were grouped by type to understand the community's perspective more easily on the Technically Preferred Plan. Some comments only mentioned one issue; however, many more of them stated a number of issues. **Table 6-4** summarizes the public's comments by type/issue and how they were considered as part of the Study.

There was general support for the Study with a total of 88 comments citing support despite potential concerns with specific aspects of the Technically Preferred Plan. In addition, several comments raised a sense of urgency in proceeding with the Study. Specific comments were received in support of the proposed signals at Belle River Road (12 comments).

With 116 comments, the greatest area of concern with the public was sideroad closures. Sideroads of greatest concern were Cameron Side Road (47 comments), Graham Side Road (30 comments), and Marsh Road (14 comments). Closing Cameron Side Road was identified as a concern because of the potential impact to businesses and farmers. As a result of this potential sideroad closure, a local owner started a petition (written and online). The written petition received 289 signatures and the online petition received 1,862 signatures. With regards to comments received concerning Graham Side Road, the focus was on the disruption to travel across Highway 3.

There were 38 comments received concerning the additional traffic signals for Belle River Road (Essex Road 27) and Essex Road 18. The comments were varied with indications of support for roundabouts, for full interchanges, and for retaining the current stop condition.

The potential impact to the farming community was an issue/concern (25 comments). Comments were received from both public members concerned about the farming community as well as from farmers who were specifically concerned about impacts to their operations. In addition, there were related comments from the public noting their concerns of increased vehicles including large agricultural equipment traveling County roads because of the sideroad closures.

Other more notable issues/concerns raised by the public included the implementation of Phase 3 Contract 1 (Contract 2020-3006) and the bottle neck east of Maidstone Avenue (15 comments), acquisition of private property (8 comments), impacts to cyclists (11 comments), and access and/or response time of emergency vehicles (10 comments).

Table 6-4 Summary of the Public's Comments by Type/Issue and How They Were Considered as part of the TESR Review Process

Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
Support for the Study	General support for the Study's proposed changes	88	Support for the project was noted.
Proposed Sideroad Closures	General support for all proposed sideroad closures	16	Support for the proposed sideroad closures was noted.
Proposed Sideroad Closures	<ul style="list-style-type: none"> Concerned about the proposed sideroad closures in general Do not support the proposed sideroad closure of Cameron Side Road Do not support the proposed sideroad closure of Marsh Side Road Do not support the proposed sideroad closure of Inman Side Road Do not support the proposed sideroad closure of Upcott Side Road 	<ul style="list-style-type: none"> 116 47 14 4 2 	<p>Highway 3 is classified as a controlled access highway with a posted speed of 80 km/hr and the 2006 Approved Plan will widen the highway from two-lanes to four-lanes with a 15m wide depressed median.</p> <p>As part of considering safety enhancements that could be made to the 2006 Approved Plan, the closure of at-grade intersections that do not warrant traffic signals were assessed and incorporated into the proposed 2020 Recommended Plan. The rationale for the proposed closures includes:</p> <ul style="list-style-type: none"> The 2044 traffic analysis indicated that the intersections would perform poorly during the am and pm peak periods such that traffic would be delayed entering the highway. The traffic volumes on the sideroads are low and can be rerouted within the existing local road network. The closure of the intersections eliminates collision conflict points with Highway 3 traffic. The depressed median for the widened highway can be challenging for drivers to understand gaps in the highway traffic to permit a safe entry.



Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
Proposed Sideroad Closures	Do not support the proposed sideroad closure of Graham Side Road	30	<p>As part of considering safety enhancements that could be made to the 2006 Approved Plan, the closure of at-grade intersections that do not warrant traffic signals were assessed and incorporated into the 2020 Recommended Plan. Safety is enhanced with access to Highway 3 controlled by traffic signals and the local road network supports connectivity to the signalized intersections.</p> <p>At Graham Side Road, the traffic analysis identified that County Road 18 / Graham Side Road would warrant traffic signals. Since Essex Road 18 is part of the County's road network and due to the number and severity of the collisions at the intersection of Highway 3 and Graham Side Road during the period of study, it was included as a sideroad closure in the 2020 Technically Preferred Plan.</p> <p>From information received and concerns expressed by the public and the Town of Kingsville in response to the Online PIC, MTO re-assessed the 2020 Technically Preferred Plan. From this re-assessment, a traffic signal intersection at Highway 3 and Graham Side Road was added to the 2020 Recommended Plan along with the previously proposed traffic signals at Highway 3 and County Road 18.</p>
Proposed Sideroad Closures	Implement roundabouts at the Highway 3 and sideroad intersections instead of traffic signals	16	<p>Roundabouts were reviewed at all intersection locations but were not included as part of the 2020 Recommended Plan, which uses signalized intersections to enhance safety of the travelling public and improve the flow of traffic. Additionally, roundabouts may be preferred on a highway network when traffic volumes are balanced between the highway and the sideroad or where an intersection is geometrically constrained. Since the sideroad traffic volumes are low in comparison to the Highway 3 traffic volumes, roundabouts are not appropriate for the Highway 3 Widening and Safety Enhancements Study.</p>
Proposed Sideroad Closures	Implement a controlled access highway replacing at-grade intersections with overpass structures	17	<p>Highway 3 is presently classified as a controlled access highway. The 2006 Approved Plan provided for the widening of Highway 3 from two-lanes to four-lanes with a 15m wide grass median. In the Approved Plan, traffic signals were confirmed for the intersections at Division Road (County Road 29) and Union Avenue (County Road 34).</p>

Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
			<p>The Highway 3 Widening and Safety Enhancements Study confirmed that additional traffic signals are warranted at the intersections with Highway 3 at Belle River Road (Essex Road 27), County Road 18, and Graham Side Road. The warrant was based partially on the delay to sideroad traffic to cross/enter Highway 3. All the traffic signals within the Highway 3 Study Area will be designed to initiate a change in the signal based on a presence detection at the sideroad. With this design, the traffic signals on Highway 3 will remain green unless there is a demand from the sideroad. In addition, the 2020 Recommended Plan includes the closure of the low traffic volume intersections at Cameron Side Road, Marsh Road, Inman Side Road and Upcott Side Road. The closure of these intersections will reduce the number of locations where traffic can enter the corridor and thereby enhancing safety and promoting traffic progression on Highway 3. Interchanges were considered as part of the Highway 3 Widening and Safety Enhancements Study; however, the proposed four lane cross-section, planned traffic signals and the low volume road closures will operate effectively until the year 2044 and beyond based on traffic growth projections.</p>
Farming Community	Community concerned about the potential adverse effects to the farming community because of the proposed changes	25	<p>MTO recognizes the potential impacts that the closures of the low volume intersections will have on the farming community, especially to those farmers who tend to fields on both sides of the highway. However, access across the highway needs to be controlled by traffic signals to enhance safety to the farmers and the travelling public. Access to the signalized intersections is provided through the local road network.</p>
Farming Community	Farmers concerned about the potential adverse effects to the farming community because of the proposed changes	8	<p>MTO recognizes the potential impacts that the closure of the low volume intersections will have on the farming community, especially to those farmers who tend to fields on both sides to the highway. However, access across the highway needs to be controlled by traffic signals to enhance safety to the farmers and the travelling public. Access to the signalized intersections is provided through the local road network.</p>
Farming Community	Concern that large agricultural equipment/vehicles traveling on the County roads will	2	<p>MTO recognizes that closure of the low volume intersections will re-route large farm equipment/vehicles onto the County road network. As part of the Study, it was determined that the existing local roads are sufficient to convey the</p>



Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
	adversely affect driving conditions for other motorists		large farm equipment/vehicles until they reach alternative intersections to cross Highway 3. The Ministry encourage farmers to use lower traffic volume municipal roads to connect to the Highway 3 crossings when they are required to travel to the other side of the highway.
Highway 3 Study Area Limits	Consider extending the Highway 3 Study Area east of County Road 34 to Highway 77	9	The 2006 Approved Plan provides for the widening of Highway 3 from Outer Drive to 1.1km east of Union Avenue (Essex Road 34). As part of this Study, traffic data was collected between Union Avenue (Essex Road 34) and Highway 77 to evaluate existing and future traffic volumes. Based on the current and projected traffic volumes, Highway 3 does not warrant widening to four-lanes between Union Avenue and Highway 77. Highway 3 between Essex Road 34 and Highway 77 is planned to be rehabilitated in 2021, subject to funding and approvals. The work will improve the existing pavement condition, improve drainage, and implement additional safety measures.
Highway 3 Study Area Limits	Implementation of Phase 3 Contract 1 (Contract 2020-3006) and the traffic constraints on Highway 3 east of Maidstone Avenue	15	A separate study is underway for widening and other improvements from Maidstone Avenue to 1.2km east of County Road 23 (Arner Townline). MTO has selected a Design-Build Consultant to complete the detail design and construction of this section of Highway 3. It is anticipated that the construction will begin as early as Spring 2021.
Cycling	Potential adverse effects on cyclists such as reducing the locations to cross Highway 3 and thus re-directing cyclists onto other roads with higher vehicle traffic because of the proposed changes	11	Highway 3 is classified as a controlled access highway with a posted speed of 80 km/hr and the approved plan will widen the highway from two-lanes to four-lanes with a 15 m wide depressed median. This stretch of Highway 3 is not part of the County Wide Active Transportation System or Provincial Wide Cycling Network. As part of considering safety enhancements that could be made to the 2006 Approved Plan, the closure of at-grade intersections that do not warrant traffic signals were assessed and incorporated into the 2020 Recommended Plan. By closing access and routing all traffic to the intersections with traffic signals, pedestrians and cyclists will be crossing the future four lane divided Highway 3 under controlled conditions, with traffic stopped on Highway 3. All the traffic signals within this section of the Highway 3 corridor will be <i>Accessibility for Ontarians with Disabilities Act (AODA)</i> compliant once construction has been completed.

Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
Emergency Services	Potential adverse effects to access and/or response time of emergency services vehicles because of the proposed changes	10	Emergency services staff from Essex County and the Town of Kingsville have participated in the development of the 2020 Recommended Plan. Emergency services is supportive of the closure of the low volume sideroads and the enhanced access to the highway through traffic signals at the added locations of Belle River Road (Essex Road 27), Essex Road 18, and Graham Side Road.
Property Acquisition	Acquisition of private property needed for implementing the proposed changes	8	As part of the Study, individualized letters to potentially affected property owners were issued detailing the planned property takings to implement the 2020 Recommended Plan. Once the 2020 Recommended Plan has been approved, MTO will initiate the property acquisition process providing fair market value compensation as part of securing the property required from each of the affected owners in accordance with their policies and applicable laws
Highway 3 Speed Limit	Increase the speed limit on Highway 3	7	Highway 3 is classified as a controlled access highway with a posted speed of 80 km/hr and the approved plan will widen the highway from two-lanes to four-lanes with a 15 m depressed median. Following the construction of the 2020 Recommended Plan, Highway 3 may be a candidate for an increase in the posted speed limits. However, increasing the posted speed limits would only be considered with a reduction of the severity and number of collisions within the corridor.
Improving South Talbot Road	South Talbot Road should be re-paved/improved	6	Paving of South Talbot Road is not considered to be required at this time due to the low traffic volumes.
Traffic Camera/Data for the Study	Accuracy of the traffic data collected for the Study considering COVID-19	4	Traffic data has been collected within the Highway 3 corridor for many years by MTO, Essex County, and the Town of Kingsville. This historical data was reviewed and supplemented by traffic counts collected during the Fall of 2019 prior to the COVID-19 pandemic outbreak.
Sideroad Volumes	Changes in sideroad volumes because of the proposed sideroad closures causing potential local road network issues	4	The amount of traffic being diverted from the road closures is not expected to require changes to the existing local road network. At this time, it is difficult to predict if there will be spill over traffic concerns generated by the Highway 3 Widening and Safety Enhancement Study. As part of the Study, both Essex County and the Town of Kingsville have been consulted regarding potential implications on the existing local road network.



Type of Comment	Issue	Number of Comments that mentioned the Issue	Consideration of the Comment (Issue)
Drainage on Private Property	Potential adverse effects to drainage on private property because of the proposed changes	3	As part of the Study, an extensive review of the drainage for Highway 3 was completed including an assessment to determine if changes are required to accommodate the 2020 Recommended Plan. In general, the existing culverts conveying water under the highway can be extended to permit the construction of the four-lane widening and associated improvements. The 2020 Recommended Plan will clean out accumulated sediment from the existing culverts and re-establish the municipal drains and ditches to design profiles.
Highway 3 Illumination	Consider adding illumination on Highway 3 as part of the proposed changes	1	The 2020 Recommended Plan includes the installation of traffic signals at the intersections of Highway 3 with Belle River Road (Essex Road 27), Division Road (Essex Road 29), Essex Road 18, Graham Side Road, and Union Avenue (Essex Road 34). At each of these intersections, the traffic signals will be accompanied by the MTO's standard illumination. Full illumination is not warranted for the Highway 3 corridor at this time.
Carpool Lot	Support for a new carpool Lot on Highway 3	1	Currently, a commuter parking lot is not required for the corridor. However, opportunities for a commuter lot will be further considered by MTO as the project proceeds to detailed design and construction.



7. Potential Impacts, Proposed Mitigation and Monitoring Requirements

The potential impacts, proposed mitigation measures, and monitoring requirements, as appropriate, were identified based on the 2020 Recommended Plan and environmental conditions updated through the investigations/assessments carried out as part of the Study. The following overview provides the rationale for the potential environmental impacts, proposed mitigation and monitoring requirements that are presented in **Table 7-6**.

7.1 Natural Environment

7.1.1 Drainage and Hydrology

Potential Impacts

As stated earlier, there are no natural drainage crossings of Highway 3 within the Study Area. Stormwater conveyance is completed through municipal drains with their contributing area originating in the predominately agricultural lands to the north and generally bounded between Union Avenue (Essex Road 34) and Highway 3. Minor modifications have been identified for the existing municipal drains. These modifications are required to provide for the widening of Highway 3 through the extension and/or replacement of the existing culverts. Other minor modifications include the relocation of a municipal drain to avoid conflicts with the planned improvements or utilities.

Therefore, in general existing drainage patterns will remain and the proposed improvements will maintain the current drainage function and therefore potential impacts to drainage patterns are negligible.

Proposed Mitigation

Temporary by-pass and dewatering measures as necessary, will be provided during replacement and cleanout of the culverts. By-pass measures will be designed by the Contractor and are expected to include utilizing a by-pass pump to divert flows from upstream of the culvert to downstream of the culvert. As per the MTO Highway Drainage Design standards, temporary by-pass measures during construction are based on the 2-year return period. Treatments to control sediment will be installed as part of construction to control sediments from entering the municipal drains.

Temporary flow passage around in-water construction with pumping is being utilized following all discharge measures specified within Interpretive Bulletin, Nov. 2016 titled "Water Taking Exemptions and Environmental Activity Sector Registry (EASR) Regulation". In accordance with MTO Special Provision 100S59, the Contractor shall obtain any permits, licenses, certificates, and registrations required for the performance of the Work. EASR registration will be required from MECP.

7.1.2 Fish and Fish Habitat

Potential Impacts

Potential impacts to fish and fish habitat may include the following:

- Infilling of fish habitat by encroachment of the water crossing footprint or channel realignment to accommodate the culvert works

- Removal of vegetation on top and along the banks of the municipal drains
- Alteration of channel morphology and sediment transport processes caused by the physical structure of the crossing resulting in upstream and downstream of sediment aggradation/erosion
- Re-entry of sediment that was removed/stockpiled into the municipal drain
- Impingement of entrainment of fish when dewater pumps are used
- Short term or chronic transport of deleterious substances, including sediment into fish habitat from construction or road drainage.
- Alteration of channel flow velocity and/or depth

The fish habitat within the Study limits is common throughout the area, and the fish habitat removal will not limit or diminish the ability of fish to rely on the use of the habitat to carry out one or more of their life processes. Impacts to fish and fish habitat can largely be avoided or mitigated by implementing Best Management Practices (BMPs), adhering to in-water timing restrictions, and using site specific measures to control the sources of these effects. The municipal drains that are considered fish habitat are depicted within **Figure 5-10 Municipal Drains and Fish Habitat** located within **Appendix A**.

Culvert Replacements/Extensions

The proposed culvert replacements/extensions will not require infill of the channel and will result in the permanent alteration of existing fish habitat. In total, approximately 775 m² of direct and 675 m² of indirect fish habitat will be permanently altered to accommodate the extension of the culvert footprint and any inlet/outlet channel maintenance.

Culvert Relocation and Municipal Drain Realignment

The culvert relocation and municipal drain realignment includes two culvert locations which will be relocated slightly to the east to accommodate municipal road works associated with the Highway 3 widening. Infilling of the channel is required for the proposed works to accommodate for the removal of existing culverts and for the permanent removal of a segment of the municipal drains that exists parallel to the intersecting roads to Highway 3. The proposed channel realignment will result in approximately 675 m² of infill, 30 m² of permanent alteration and 650 m² of habitat creation, resulting in a net loss of approximately 25 m² of direct fish habitat.

New Sideroad Culvert Installation on Existing Municipal Drain

Seven new sideroad culverts which will be constructed on existing municipal drains to provide drainage for the municipal road realignment areas. No infilling of fish habitat is required for this proposed work grouping. The impacts are limited to the permanent alteration of approximately 225 m² of indirect and approximately 30 m² of direct fish habitat.

New Sideroad Culvert Installation Requiring Municipal Drain Realignment

Two new sideroad culverts and the realignment of one municipal drain to accommodate the municipal road realignment. Infilling associated with the proposed works is identified for a portion of Schiller Drain which is situated parallel to Division Road. The proposed works will result in approximately 200 m² of infill (fish habitat destruction),



10 m² of permanent fish habitat alteration and 225 m² of fish habitat creation, resulting in a net gain of approximately 25 m² of direct fish habitat.

Municipal Drain Realignment to Accommodate Cul-de-sac Construction

The realignment of one municipal drain to accommodate the construction of a cul-de-sac associated with the road closure of Concession Road 9. Infilling associated with the proposed works was identified for a portion of 9th Concession Road Drain which supports direct fish habitat. This proposed work will result in approximately 200 m² of infill (fish habitat destruction), 50 m² of permanent fish habitat alteration and 275 m² of habitat creation, resulting in a net gain of approximately 75 m² of direct fish habitat.

Minor Routine Drainage Works

All culverts within the Study Area will be reviewed and cleaned out as necessary and can be addressed by following MTO BMPs for *Culvert Maintenance – Debris and Sediment Removal*. Drainage ditching will be completed by following MTO BMPs for *Ditch Maintenance within 30 Metres of a Waterbody*. There is no likelihood of causing the death of fish or harmful alteration, disruption, and destruction (HADD) of fish habitat if the proposed works are carried out in accordance with the BMP's operational conditions, constraints, protection measures and submission requirements, and the project works would be in compliance with the *Fisheries Act* and of the MTO/DFO/MNRF Fisheries Protocol.

Proposed Mitigation Measures

The following design and construction stage mitigation measures have been identified to avoid, eliminate, or significantly reduce the potential for death to fish and HADD to fish habitat. Where required, design mitigation measures will be finalized in detail design and identified on contract drawings. Construction mitigation will be identified in MTO Tender Contract Documents as Operational Constraints, General Standard Special Provisions, Item-Specific Standard Special Provisions (SSP), and Item-Specific Non-Standard Special Provisions (NSSP).

Construction Mitigation Measures

To protect fish and fish habitat and maintain the construction works as “Low Risk”, the mitigation measures, as summarized below, should be implemented. Environmental Protection for Construction in Waterbodies and Waterbody Banks shall be conducted in accordance with OPSS 182, which includes the following:

Operational Constraint

- Implementation of in-water works from July 16th to March 14th of any given year (i.e., no in water works between March 15th - July 15th), to protect sensitive life stages/processes of fish (OPSS. PROV 182 and SSP 101F23).
- Where possible, in-water works shall be conducted in-the-dry during low flows or when flows are non-existent.
- Design and implement isolation/containment system to delineate temporary in-water work zones and to always maintain clean flow downstream/around the work zone.
- When temporary flow control must be undertaken for the work, it shall be according to the Contract Documents as per OPSS 182 and 517 and relevant permits and supported by all appropriate erosion and sediment control measures to isolate the temporary instream construction zones required for the works.

- When using a pump, the intake shall be controlled to prevent entry of fish and other aquatic wildlife (screen any water intakes or outlet pipes to prevent entrainment or impingement of fish).
- The limit of any area to be disturbed shall be clearly marked prior to the commencement of work.
- Limit access to banks to protect riparian vegetation and minimize bank erosion.
- Only clean materials free of fine particulate matter will be placed in the water for temporary construction measures (e.g., coffer dams will be constructed of ‘pea gravel’ bags, geotextile fabric, sheet pile or other clean material);
- Unless specified in the Contract Documents, vehicles and equipment shall not enter or be operated in the municipal drains or on waterbody banks or in riparian vegetation areas.
- Vehicular and equipment maintenance and refueling shall be conducted as far away from waterbodies, waterbody banks and riparian vegetation areas as possible and practical and shall be controlled to prevent any discharge of equipment fuels and fluids onto the ground or into waterbodies.
- Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species, and noxious weeds.
- Operate, store, and maintain all equipment and associated materials in a manner that prevents the entry of any deleterious substance to the waterbody.
- All stockpiled materials, including but not limited to excavated overburden and topsoil, excess materials, construction debris and containers shall be stored and stabilized in a manner that prevents them from entering any waterbody.
- All construction debris and litter will be removed frequently.
- All materials used to provide environmental protection shall not contain deleterious substances.
- All exposed soils or disturbed areas that drain into a drain/watercourse shall be treated with seed and cover according to OPSS 804 immediately after exposure or upon completion of the work in or around the drain/watercourse or on the drain/watercourse bank.
- All excess material shall be managed in accordance with OPSS 180.
- Develop a Response Plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site; and
- As a general condition of the contract, the Contractor will be responsible for the control of dust for all road works.
- Construction of pools in waterbody beds, shall be according to OPSS 821.

Dewatering Operations – General

The control of water from dewatering operations is to be conducted in accordance with OPSS 518, 517, and 182 which includes the following:



- Where dewatering is required, appropriate energy dissipation and settling/filtration measures will be used for discharge of dewatering water to ensure no erosion or sediment release occurs in the drain/watercourses in accordance with OPSS 517 and 182.
- Dewatering operations shall be directed to a sediment control device or natural attenuation area prior to discharge to drain/watercourses. If a natural attenuation area is used, a minimum 30 m setback shall be maintained from the receiving drain/watercourse.
- When water is discharged to a drain/watercourse, it shall be done in a manner that does not cause erosion or other damage to adjacent lands; and
- Any fish stranded within the temporary work zones isolated for the in-water works will be rescued using appropriate techniques by qualified individuals and released 'downstream of'/away from the temporary work zones (OPSS 182 and Special Provision 101F23).

Sediment and Erosion Control – General

Sediment and erosion controls are to be used for the duration of the work, which include the following:

- Design and implement erosion and sediment controls to contain/isolate the construction zone, manage site drainage/runoff and prevent erosion of exposed soils and migration of sediment to the waterbody, and ensure site is stabilized prior to removal following construction per OPSS 805.
- Regular inspection and maintenance of erosion and sediment control measures during the course of construction, including repairs to erosion and sediment control measures if damage occurs.
- Removal of non-biodegradable erosion and sediment control materials once site is stabilized.
- A 200 m stand-by supply of prefabricated light duty silt fence barrier, in addition to silt fence barrier which may be specified elsewhere in the Contract, shall be maintained at the Contract site prior to commencement of grading operations in a safe location away from any waterbodies.
- The time interval between commencement and completion of any work that disturbs earth surfaces shall be a maximum of 45 calendar days. Commencement of such work shall be considered to have occurred when the original stabilizing ground cover has been removed, including grubbing, or has been covered with fill material. Completion of such work shall be considered to have occurred when the specific cover material (seed and mulch, seed and erosion control blanket, sod, riprap, etc.) has been applied.
- Along the highway ROW, for the construction and operation phases, design drawings are to identify locations where check flow dams and temporary straw bales are required within roadside drainage to prevent/retard sediment transport into the municipal drain.
- Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent the entry of sediment to drains/watercourses.
- Within the ROW where bare soils occur as a result of the road works, these areas will be re-vegetated using a standard MTO approved seed mix. Seeding can be undertaken by hand spreading or hydroseeding to the extent possible given the rock fill embankments that are present.
- Erosion and sedimentation control measures shall not be placed in drains/watercourses unless otherwise specified in the Contract, or directed by the Contract Administrator; and

- Where works are required at locations where fish habitat has been identified, the work area will be delineated through the erection of temporary fencing, and all vegetated cover not specified for removal shall be preserved in order to minimize erosion and sedimentation.

Protection of Fish and Fish Habitat – General

- Municipal drains should not be diverted or blocked.
- Replacement of the existing culvert should be designed in a manner not to impede fish passage.
- The Contract Administrator shall monitor construction activities in and around the municipal drains and ensure all related mitigation measures are properly installed and maintained and are functioning effectively.
- All erosion and sediment control measures should be integrated with the construction operation schedule as determined by the Contractor and Contract Administrator. Operations near or in municipal drains should not commence until temporary erosion and sediment control measures have been installed. In the event that the Contract Administrator determines that controls are unacceptable or ineffective, the Contractor should cease the offending operations and operations should remain suspended until otherwise directed by the Contract Administrator in writing; and
- The Contractor shall take such measures and provide such protection systems to ensure that any materials resulting from construction:
 - Do not fall into or enter the waterbody
 - Minimize the escape of dust such that no visible dust reaches the waterbody

Site-Specific Mitigation Measures

- Where riparian vegetation has been removed, re-establish bank vegetation with native species suitable for the site.
- Where riparian vegetation must be re-established, the proponent shall plant or seed vegetation when at least four weeks remain in the growing season.
- Whenever possible, operate machinery on land above the high-water mark and in a manner that minimizes disturbances to the banks and bed of the municipal drain
- New concrete box culverts shall be embedded to accommodate 400 mm of suitable sized substrate.

Likelihood of Death of Fish or HADD of Fish Habitat

Culvert Replacement/Extension

Following the implementation of BMPs, mitigation measures and restoration techniques, the remaining disturbance following the work is expected to be minimal. It is determined that the proposed culvert replacements and extensions is not likely to result in the death of fish or HADD of fish habitat.

Culvert Relocations and Municipal Drain Realignment

Due to the infilling of the channel which results in the permanent destruction to fish passage, it is determined that proposed culver relocation and municipal drain realignments is likely to result in the death of fish or HADD of fish habitat.



New Sideroad Culvert Installations on Existing Municipal Drain

Following the implementation of BMPs, mitigation measures and restoration techniques, the remaining disturbance and intensity of the installation of seven new sideroad culverts is considered to be low. It is determined that this proposed work grouping is not likely to result in the death of fish or HADD of fish habitat.

New Sideroad Culvert Installations Requiring Municipal Drain Realignments

Due to the infill of the channel that will result in the permanent destruction of fish habitat, it is determined that the installation of two new sideroad culverts and associated municipal drain realignment is likely to result in the death of fish or HADD of fish habitat.

Municipal Drain Realignment to Accommodate Cul-de-sac Construction

Due to the infill of the channel that will result in the permanent destruction of fish habitat, it is determined that the municipal drain realignment and Cul-de-sac construction at Concession Road 9 is likely to result in the death of fish or HADD of fish habitat.

Minor Routine Drainage Works

It is determined that the minor routine drainage works can comply with the MTO BMP's for 'Culvert Maintenance – Debris and Sediment Removal' and 'Ditch Maintenance within 30 Metres of a Waterbody' and will not result in the death of fish or HADD of fish habitat.

7.1.3 Vegetation, Flora, Natural Heritage, Wildlife and Wildlife Habitat

Potential Impacts

The potential impacts include the temporary complete removal of the existing ROW vegetation and the permanent removal of a large portion of the ROW sufficient to accommodate the 2020 Recommended Plan. None of the potentially impacted vegetation communities are provincially rare or limited within the general area, but some woodland habitat will require removal. The clearing or earthworks for construction and equipment access may result in sediment run-off discharging into nearby vegetation communities and watercourses. In addition, the use of machinery and vehicles on site could result in leaks or spills of oil, gasoline and other fluids which could enter the surrounding natural communities.

There is also the potential that Special Concern species may be impacted by the proposed culvert and widening works (i.e., swamp rose-mallow, snapping turtle, and eastern wood-pewee). Butternut removal is required and is being addressed through the Butternut Health Assessment process.

The ROW currently also functions as habitat for a variety of common wildlife (reptiles, bats, and mammals). There will be a permanent loss of a majority of this habitat from the ROW; however, other woodlands exist in the general area and are expected to be utilized by these species. Other potential wildlife impacts include disturbance of nesting activity and inadvertent harm to species using the ROW and immediate vicinity.

Proposed Mitigation Measures

Vegetation

The following mitigation measures are recommended to minimize effects to the local retained vegetation communities and their associated habitat functions:

- Clearly demarcate work limits at outset of construction and minimize unnecessary vegetation clearing. A silver birch identified along the south edge of the right-of-way, east of Graham Side Road and two white oaks identified along the south edge of the right-of-way, west of Concession Road 9 should be preserved, if possible, as part of the Study.
- Install temporary erosion and sediment control (ESC) measures prior to construction and maintain them throughout construction (See Ontario Provincial Standard Specification [OPSS] 805).
- Routinely inspect erosion and sediment control measures, including following storms, and repair, as required.
- All erosion and sediment control measures must be in place prior to the start of construction and remain in place until restoration is complete and disturbed areas are stabilized against erosion.
- Appropriate vegetation clearing techniques will be used (e.g., felling trees away from retained natural areas and watercourses).
- Avoid working underneath canopy of existing trees to be retained. Where equipment must operate in close proximity to trees to be retained, prune branches using best management practices to mitigate impacts to trees.
- Where excavation is required in close proximity to trees, tree roots are to be cut/pruned to the face of the excavation with a clean and sharp handsaw or loppers. Pruning cuts should result in a clean cut, with root bark securely attached at either side of the cut.
- In dust-sensitive areas (e.g., near the watercourses, wetlands etc.), control dust using water and not chemical suppressants.
- Conduct equipment maintenance and refueling at the designated and properly contained maintenance areas in the works yard or at commercial garages located well away from the municipal drains, ditches and outside of the retained vegetation areas. The Contractor will have a Spills Prevention Plan and required materials on site at all times in accordance with OPSS 100.
- Ensure that all construction machinery is cleaned and maintained prior to arrival on-site to prevent the introduction of pollutants or exotic invasive species
- Any temporarily stockpiled soil, debris or other excess materials, and any construction-related materials, will be properly contained (e.g., inside silt fencing) in areas separated at least 30 m from the watercourses/municipal drains in accordance with OPSS 180. All construction materials, excess materials and debris will be removed and appropriately disposed of following construction. Cut and grubbed material shall be disposed of through chipping or other appropriate means, in accordance with OPSS 180. Implement environmental inspection during construction to ensure that all mitigation measures are implemented properly, maintained, and repaired and remedial measures are initiated in a timely manner where warranted.
- The potential for fuel oil and other hydrocarbon spills and leaks will be controlled by utilizing off-site fueling locations, a minimum distance of 30 m from a drainage ditch, waterbody or wetland. The Contractor will have a Spills Prevention plan and required materials on site at all times.
- Re-stabilize and re-vegetate exposed surfaces as soon as possible following disturbance, per OPSS 804 using native seed relevant to the seed zone and habitat type.



Wildlife

The preceding mitigation measures that minimize effects to vegetation and protect adjacent vegetation areas will also protect the associated wildlife habitat functions. However, it is also necessary to ensure the protection of breeding birds, reptiles and other wildlife that may nest or otherwise use areas where construction is proposed. Therefore, the following measures are recommended:

- Ensure that no bird nests will be removed or disturbed in accordance with the Migratory Birds Convention Act (MBCA), SARA, and ESA. No tree clearing should occur within the breeding bird period or bat maternity roosting period. Avoid vegetation clearing (including grubbing) during the breeding bird season (April 1 to August 31) and avoid tree removal during the bat maternity roosting season (April 1 to September 30).
- Erect exclusion fencing around culvert works and road widening activities during the active reptile season to avoid entrapment of reptiles in work zones. Synthetic Plastic Erosion Control blankets and mats cannot be used as they pose an entrapment hazard for reptiles. Only fibre-based bio-degradable Erosion Control Blankets/Mats are to be utilized.
- Any wildlife incidentally encountered during construction will not be knowingly harmed and will be allowed to move away on its own. In the event that an animal encountered during construction does not move from the construction zone and construction activities are such that continuing construction in the area would result in harm to the animal, all activities that could potentially harm the animal will cease immediately and the Contract Administrator will be notified. Any turtle encountered laying eggs will be avoided and not moved or disturbed. If any migratory bird protected under the MBCA builds a nest in the construction area, construction must cease until the young have fully fledged.

7.1.4 Species at Risk

Potential Impacts

Several protected SAR are present within the Study Area and may be impacted by the proposed improvements. Butternut and Barn Swallow will require additional consultation with MECP to determine the required procedures for addressing impacts to these species. Suitable mitigation measures can be implemented to minimize the potential to harm/damage SAR species and their habitat.

Proposed Mitigation Measures

Butternut and Barn Swallow require specific approvals under the ESA and consultation with MECP to determine approval requirements for the Study is in progress. Once requirements are determined (e.g., registering the Study for alterations to barn swallow habitat), these procedures must be implemented to comply with the ESA.

To protect these species and any other SAR generally from potential impacts during construction, all relevant handling and MECP notification protocols will be adhered to. The following measures are proposed:

- Implement the mitigation measures outlined for vegetation and wildlife.
- Adhere to timing windows. Avoid vegetation clearing (including grubbing) during the breeding bird season (April 1 to August 31) and avoid tree removal during the bat maternity roosting season (April 1 to September 30).
- Contractor awareness activities should be incorporated into the contract (NSSP ENVR0007), as follows:

- Prior to works starting each day, a sweep of the construction area will be completed to ensure no wildlife has entered the work area. All equipment will be inspected daily before operating to make sure snakes or other wildlife are not using it as shelter.
- All persons with any on-site role shall be provided information/ trained on:
 - The species at risk present in the vicinity of the work area, what these species are, what these species look like and how to distinguish these from other species potentially found in the vicinity; and
 - General species at risk awareness training including the need to avoid species at risk.
 - The appearance of species at risk compared to other common not at-risk species.

In the event that a SAR, or potential SAR, is found within the construction area, the Contractor will immediately cease all work that could potentially harm the animal and will contact the Site Manager for direction, as these animals are protected under the Ontario Endangered Species Act (2007). The Site Manager or their Environmental Inspector will then contact the MECP SAR Biologist for instruction.

- Reports should include the following information:
 - Names of species encountered,
 - Locations, dates, and time of day where the species were encountered,
 - Photographs of the species, if taken,
 - Condition of animal, and
 - Locations, dates, and time of day when the species left the work area.

Although the Eastern Foxsnake was not observed during the surveys carried out as part of the Study and the species is likely absent from the Study Area, the following measures are proposed based on those detailed in the *Highway 3 Improvements, Town of Essex, GWP 317-98-00, Transportation Environmental Study Report Addendum* (Dillon Consulting Ltd., 2016):

- A fact sheet and detection protocol for Eastern Foxsnake should be provided to the construction crew before the project begins.
- Workers must be vigilant and check work area and machinery for the presence of herptiles (i.e., reptiles and amphibians) prior to each day of construction.
- Measures shall be put in place to prevent herptiles from entering construction areas. These measures shall include the installation of temporary fencing prior to April 1 to exclude herptiles and contain the work area in proximity to drainage features and other potential natural habitats. Exclusion fences will be included in the Contract drawings and specifications. Fencing shall be inspected daily during active construction to check for breaches of instability and shall be kept in place from April 1 to October 1.
- Exclusion fencing shall be installed according to the guidelines detailed in the *Best Practices Technical Note on Reptile and Amphibian Exclusion Fencing* (MNRF, 2013). It is not recommended that netting type erosion control measures be used for projects over drains. At these locations, alternatives such as Curlex Netfree© blanked or rip rap over geotextile fabric should be used for erosion control to prevent entanglement of Eastern Foxsnake.



- If herptile species are encountered in the construction area, work must be suspended until the animal is out of harm's way. If the species persists in the work area, a person qualified to handle herptiles should be contacted to relocate the animal.
- For removal of structural culvert SC5, work will be conducted between April 1 and May 31 to avoid disturbance to or entrapment of hibernating snakes or snakes that may be nesting. Prior to commencement of work, the work area will be swept for snakes and exclusion fencing erected at the limits of the work area.

7.1.5 Groundwater

Potential Impacts

The potential impacts of constructing the 2020 Recommended Plan on groundwater resources is anticipated to be relatively minor, of a short duration, and manageable using normal construction techniques given the anticipated shallow open cut construction excavations, which would intersect low permeability silty clay and till deposits. The construction water takings are anticipated to only require maintenance pumping (i.e., removal of sump water). The construction excavations that intersect the low permeable silty clay and till deposits are anticipated to have water takings of less than 50,000 L/day. Based on the low groundwater seepage, an Environmental Activity and Sector Registry (EASR) water taking registration would not be required.

Any construction dewatering is anticipated to be temporary at the open cut excavations, and once construction is completed, dewatering will no longer be required, and groundwater levels will return to pre-construction conditions. Any seepage is anticipated to be local, limited in extent, flow, and duration and should be manageable using normal construction techniques. Given that the construction excavations will intersect low permeability silty clay and till deposits and will only result in temporary and low construction watering takings (if any), it is anticipated there will be little, if any, impact of the construction water takings on water supply wells, surface water features, mobilization of impacted groundwater, or settlement issues.

Given the rural setting of the Highway 3 Study Area, nearby residential properties are anticipated to be serviced by private water supply wells (and/or cisterns). It is expected that the wells would obtain water within the deeper overburden or bedrock. Private wells in proximity to the Study Area are anticipated to be completed much deeper than the proposed improvements, such that, there would be a low potential for well interference.

The construction excavations in the vicinity of the drainage features are anticipated to intersect low permeability silty clay and till, and as such a change in groundwater/surface water interactions or impacts on surface water baseflow are unlikely. Given the rural setting, temporary low water takings and small area of influence, mobilization of impacted groundwater and settlement issues are not anticipated.

Potential long-term impacts of highway operations and maintenance on groundwater quality and quantity are not anticipated with respect to source water supply protection areas, vulnerable aquifers and significant recharge area given the majority of Highway 3 is underlain by an aquitard and distant from a municipal water supply.

Proposed Mitigation Measures

The need for extensive construction mitigation measures is not anticipated based on the shallow construction excavation depths and fine-grained soils. Therefore, normal construction methods for managing any seepage could include scheduling activities during drier periods, diverting seepage around the excavation, modifying the excavation, or installing a local sump and pumping to land drainage. Although mobilization of impacted groundwater

and settlement issues are not anticipated, an assessment of the risks of geotechnical settlement must be carried out by a qualified geotechnical engineer in the event of any groundwater dewatering.

Notwithstanding the low potential for impacting groundwater quantity and quality, MTO's Best Management Practices (BMPs) should be applied to the construction activities (e.g., handling and storage of fuel, erosion and sediment control, etc.) and for the operation and maintenance of the highway (MTO Salt Management Plan) to further reduce this potential.

7.2 Built Environment

7.2.1 Property Requirements

Potential Impacts

Property is required from several private property owners to construct the 2020 Recommended Plan including the intersection improvements at Belle River Road (Essex Road 27), Division Road (Essex Road 29), Essex Road 18, and Graham Side Road. Property is also required for the treatment of the intersection closures at Concession Road 9, Concession Road 8, and Upcott Side Road. The 2020 Recommended Plan: Preliminary Drawings located in **Appendix C** identify the locations where property is required. **Table 7-1** lists the number of property owners affected and the total amount of property required to implement the 2020 Recommended Plan.

Table 7-1 Property Requirements for Implementing the 2020 Recommended Plan

Location	Number of Property Owners Affected	Total Amount of Property Required (ha)
Concession Road 9 closure	1	0.015
Concession Road 8 and McCain Side Road connection	2	0.06
Belle River Road (Essex Road 27) and South Talbot Road Relocation	5	2.815
Division Road (Essex Road 29), South Talbot Road Relocation and closure	12	1.675
Upcott Side Road closure	1	0.127
Essex Road 18 Realignment	8	0.50
Graham Side Road Intersection Improvements	4	0.23

Proposed Mitigation

MTO compensates property owners for the lands required at fair market value. MTO respects and protects each property owner's rights as individuals under the laws of Ontario. The following provides an overview of MTO's property acquisition process:

Property Acquisition Process

1. The TESR Addendum for the Study is issued for public comment and approved. The 2020 Recommended Plan identifies the private properties to be acquired as part of the proposed work. MTO initiates the property acquisition process.



2. An independent property appraiser will provide an estimation of the market value of property required by MTO. Compensation is based on market value. Market value is what a similar property might be expected to sell for on the open market by a willing seller to a willing buyer.

The value of MTO's property requirement and other related damages are determined by an independent professional property appraiser who inspects each property individually and considers various factors that influence market value, including recent sales and current listings of similar properties. All of this information is compiled to provide an offer that reflects the specific characteristics of the property.

If MTO requires only a portion of the property, then compensation considers the land area required; loss/replacement of buildings; loss/replacement of other infrastructure such as wells, septic systems and farm field tile and irrigation systems; interference with special considerations such as approved farm nutrient management plans; and the effect of the acquisition on the rest of the property.

3. The property owner and an MTO property agent will meet and discuss the details of the property acquisition. MTO will provide the property owner with an offer for sale. If the offer is accepted, MTO will proceed with the acquisition of property.

If a property owner is not satisfied with the offer of compensation, and a mutually agreeable offer cannot be reached, the property owner can make a request to bring the case before the Board of Negotiation, which conducts informal hearings into compensation matters. Although the recommendations for settlement are not binding on either party, their independent opinion can be helpful in resolving the difference between the parties. If an agreement is not reached, the Local Planning Appeal Tribunal (LPAT) can be asked to determine the compensation. The decision of the LPAT is binding, unless appealed by either party to the Divisional Court within six weeks of the decision of the tribunal.

7.2.2 Travel Required Due to Intersection Closures

Potential Impacts

The planned closures of Concession Road 9 / Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road with Highway 3 have the potential to reduce access to Highway 3 and increase the overall travel time for affected members of the public, school bus routes and emergency response routes. Emergency services staff from Essex County and the Town of Kingsville participated in the development of the 2020 Recommended Plan. With their involvement, emergency services are supportive of the closure of the low volume sideroads and the enhanced access to Highway 3 through traffic signals at the added locations of Belle River Road (Essex Road 27), Essex Road 18, and Graham Side Road.

Proposed Mitigation

Although there would be a reduction in access to and across Highway 3 due to the proposed road closures, there are other alternative routes available within the local road network which would minimize potential disruption to local traffic, school buses and emergency response vehicles. MTO is committed to completing future traffic studies to confirm that the 2020 Recommended Plan does not impact the capacity of the local road network.

7.2.3 Utilities

Potential Impacts

Constructing the 2020 Recommended Plan would result in potential conflicts with local utilities/municipal services (i.e., Hydro One, Bell Canada, Cogeco, Gosfield North Communications, Enbridge Gas, and the Town of Kingsville watermain).

Proposed Mitigation

All affected utility/service providers are in the process of being contacted to confirm conflicts and arrange for relocations prior to the implementation of the 2020 Recommended Plan.

7.2.4 Properties of Potential Environmental Concern

Potential Impacts

Seventeen locations of potential environmental concern were identified as having the ability to contribute to subsurface impacts on the Highway 3 ROW. In addition, areas of fill placement are assumed to be present where the grade appears to have been raised (i.e., roadways). The quality and source of fill material is unknown. It is anticipated that salt-related impacts because of roadway de-icing activities may also be present along Highway 3.

Proposed Mitigation

Considering the 2020 Recommended Plan and the preceding findings, the following preliminary recommendations are provided based on the COS completed as part of the Study:

- Where possible, geotechnical boreholes should be placed in the vicinity of the areas of potential environmental concern identified via the COS as having moderate or high risk, to assess for potential subsurface impacts that may affect the proposed construction work.
- A Phase I Environmental Site Assessment of the lands to be acquired by MTO based on the 2020 Recommended Plan, identified via the COS as having a moderate or high risk, should be conducted.
- The construction specifications should incorporate the requirements regarding the environmental characterization and management of excess soil.
- An assessment of the quality of the fill would be required, where encountered, if materials are required to be managed or reused off-Site as excess soil.

7.3 Social Environment

7.3.1 Agriculture

Potential Impacts

The potential impacts to the agricultural land uses within the Study Area are primarily related to proposed property takings, loss of Prime Agricultural Land, and sideroad closures associated with the 2020 Recommended Plan. There would be the displacement of farm operations on thirteen farm properties with a total removal of approximately 4.66 ha of Prime Agricultural Land due to additional property requirements to construct the 2020 Recommended Plan outside of existing ROWs. However, no agricultural related buildings would be displaced.

As mentioned, the planned closures of Concession Road 9 / Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road with Highway 3 have the potential to disrupt farm operations by reducing access across and to Highway 3 and increasing overall travel time. Sideroad closures have the potential to further separate farm operations that work both sides of Highway 3 and increase the number of large agricultural equipment/vehicles on local roads.

Notwithstanding these potential impacts, safety is enhanced for all users including farmers by limiting access to, egress from and crossing of Highway 3 at the signalized intersections proposed by the 2020 Recommended Plan.

Proposed Mitigation

Regarding property takings, MTO would provide compensation at fair market value as part of securing the property required from each of the affected owners. Although there would be a reduction in access to and across Highway 3 due to the proposed road closures, there are other alternative routes available in the municipal road network, which would minimize potential disruption to area farm operations because of out of way travel.

7.3.2 Residential

Potential Impacts

There would be the encroachment on 11 residential properties with a total removal of approximately 0.27 ha of land due to additional property requirements to construct the 2020 Recommended Plan outside of existing ROWs. However, no residences would be displaced. The planned closures of Concession Road 9/ Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road with Highway 3 have the potential to reduce access across and to Highway 3 and increasing overall travel time for affected area residents. However, as mentioned, safety would be enhanced for all users including residents by limiting access to, egress from and crossing of Highway 3 at the signalized intersections proposed by the 2020 Recommended Plan.

Proposed Mitigation

Regarding property takings, as mentioned, MTO would provide compensation at fair market value as part of securing the property required from each of the affected owners. Although there would be a reduction in access to and across Highway 3 due to the planned road closures, there are other alternative routes available in the municipal road network, which would minimize potential disruption to affected area residents because of out of way travel.

7.3.3 Commercial, Industrial and Tourism

Potential Impacts

There would be the encroachment on four industrial properties with a total removal of approximately 0.42 ha of land due to additional property requirements to construct the 2020 Recommended Plan outside of existing ROWs. However, no industrial related buildings would be displaced.

In addition, there could potentially be reduced highway exposure for some commercial businesses near Concession Road 9/ Cameron Side Road due to its closure including 4D Sausage Kitchen. The planned closures of Concession Road 9/ Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road with Highway 3 have the potential to reduce access across and to Highway 3 and increasing overall travel time for affected area commercial businesses.

As stated, safety would be enhanced for all users including industrial and commercial vehicles and tourists by limiting access to, egress from and crossing of Highway 3 at the signalized intersections proposed by the 2020 Recommended Plan.

Proposed Mitigation

Regarding property takings, as stated, MTO would provide compensation at fair market value as part of securing the property required from each of the affected owners. Although there would be a reduction in access to and across Highway 3 due to the proposed road closures, there are other alternative routes available in the municipal road network, which would minimize potential disruption to affected area commercial businesses because of the out of way travel.

7.3.4 Recreation/Active Transportation

Potential Impacts

Although Highway 3 within the Study Area does not provide for active transportation within the corridor, the planned closures of Concession Road 9/ Cameron Side Road, Concession Road 8 / Marsh Road, Inman Side Road / South Talbot Road and Upcott Side Road with Highway 3 have the potential to reduce access across and to Highway 3 for cyclists and pedestrians because sideroad closures eliminate crossing points along the highway. Notwithstanding this, safety would be enhanced for all users including cyclists and pedestrians by limiting access to, egress from and crossing of Highway 3 at the signalized intersections proposed by the 2020 Recommended Plan.

Proposed Mitigation

Although there would be a reduction in access to and across Highway 3 due to the proposed road closures, there are other alternative routes available in the municipal road network, which would minimize potential disruption to cyclists and pedestrians because of out of way travel. Further, with the installation of traffic signals at the proposed intersections, controlled traffic conditions are provided. At the traffic signals, pedestrian traffic signals will be implemented to provide for sufficient green time for pedestrians to cross the highway.

Figure 7-1 Location of Recommended Noise Barrier





7.3.5 Highway Noise

Potential Impacts

As per **Section 4.2.7**, there are four NSAs where the noise level after the planned improvements are constructed increases by 5 dBA or more compared to the noise level if the planned improvements are not constructed (NSA 39a, NSA-59, NSA-60, and NSA-68). Therefore, consideration of noise mitigation is required for each of these NSAs.

Proposed Mitigation

As stated in MTO Noise Guideline, the decision to implement noise mitigation must consider whether mitigation is cost-effective, technically practical, broadly supported by the affected residents, and fits into overall priorities. Taking these considerations into account, a noise barrier was determined to be technically and economically feasible only for NSA-39a.

Figure 7-1 illustrates the location, extent, and height of this recommended barrier. With this barrier in place, the noise level at NSA-39a would be 60 dBA resulting in an average noise level reduction of 5 dBA compared to the future scenario if no barrier was installed.

7.3.6 Construction Noise

Potential Impacts

Temporary or short-term construction related noise could impact receptors in the vicinity of the planned improvements based on the Noise Assessment Study carried out for the various construction stages. Therefore, there is the potential for noise complaints from area residents based on the predicted noise impacts.

Proposed Mitigation

The following measures are recommended to minimize temporary noise impacts based on the anticipated construction equipment and activities:

- All construction equipment should be properly maintained according to manufacturer's recommendations and fitted with efficient muffling devices as well as be in accordance with MECP's NPC-115 document.
- Construction equipment and/or activities typically known to be of annoyance should consider the following options:
 - Limit operating time within the daytime period when ambient noise levels are expected to be higher. If construction needs to be undertaken outside of the normal daytime hours, local residents shall be informed beforehand of the type of construction planned and the expected duration.
 - Avoid unnecessary revving of engines and switch off equipment when not required (do not idle).
 - Minimize drop heights of materials. Administrative controls are required to eliminate uncontrolled tailgate banging and the use of experienced equipment operators.
 - Route haulage/dump trucks on main roads where possible, rather than quieter residential roads.
 - Maintain an acceptable setback distance from the identified NSAs, where practical.
 - Carry out additional noise studies or monitoring program to verify and document noise levels.
 - Use of high-capacity compressed air storage to limit compressor usage.

- Investigate other alternative construction equipment or processes to complete the task.

It is recommended that additional mitigation measures be considered and implemented during construction work adjacent to residential areas if it is determined that there is a need to further reduce noise impacts (e.g., if persistent complaints arise). With this in mind, a process for dealing with noise complaints during the construction phases should be considered by MTO, and if deemed appropriate, implemented.

7.3.7 Air Quality

Potential Impacts

Localized air quality may be adversely affected during construction due to dust generation from construction activities and equipment movements. The potential impacts are expected to be minor and temporary in nature.

Proposed Mitigation

Provisions to minimize potential air quality related impacts during construction include the following best management practices for dust and other emissions:

- Clean construction sites and paved roadway regularly to remove construction-caused debris and dust.
- Employ covered loads when hauling fine-grained materials.
- Use tire washes and other methods to prevent trucks and other vehicles from tracking soil, mud or dust onto the paved roadway.
- Cover soil and aggregate stockpiles as necessary.
- Enforce compliance with posted speed limits and, as appropriate, implement further reductions in speeds when approaching work zone.
- Re-establish removed vegetation including tree plantings as soon as practically possible.

With the preceding in mind, consideration should be given to including a Best Management Practices Plan (BMPP) for Fugitive Dust in the Construction Management Plan to manage fugitive dust emissions.

7.3.8 Construction and Traffic Staging

Potential Impacts

The construction of the 2020 Recommended Plan is anticipated to take place over a two to three-year period. During this time, it is anticipated that construction activities will temporarily disrupt traffic operations on Highway 3 and the affected interconnecting sideroads.

Table 7-2 outlines the proposed construction and traffic staging for implementing the 2020 Recommended Plan to minimize the temporary disruption of traffic operations.

Table 7-2 Proposed Construction and Traffic Staging for the 2020 Recommended Plan

Stage	Duration	Traffic	Activities
1	18 months	- Highway 3 transitioned from the west to the existing highway as it will be constructed	- Extension and relocation of the structural and non-structural culverts as required.



Stage	Duration	Traffic	Activities
		<p>as part of the Phase 3, Contract 1 project (Contract 2020-3006). Traffic remains on existing highway.</p> <ul style="list-style-type: none"> - Short term lane closures (non-peak period) required on existing Highway 3 for the subdrain installation and median shoulder construction - Short term closures for the non-signalized intersections for improvements to the south and north. 	<ul style="list-style-type: none"> - Construction of the new eastbound traffic lanes and intersection improvements to the south of existing Highway 3. - Removal and construction of the future median shoulder along existing Highway 3. - Subdrain and drainage improvements completed within the median of Highway 3. - Construction of the realignment of South Talbot Road at Belle River Road. Existing South Talbot Road closed. - Construction of the realignment of Division Road, Unnamed Road and the closure of South Talbot Road. - Construction of the realignment of Essex Road 18. - Installation of temporary traffic signals at the Highway 3 intersections with Division Road and Union Avenue - Conversion of the existing transition from four-lanes to two-lanes at the west project limit to the eastbound traffic lanes. - Construction of a temporary two-lane detour within the four lane to two lane transition to the east of Union Avenue.
2	4 months	<ul style="list-style-type: none"> - Highway 3 traffic transitioned from the existing to the new eastbound traffic lanes. The existing highway is closed. - Closure of the Cameron Side Road/Concession Road 9, Marsh Road/Concession Road 8, Inman Road/South Talbot Road and Upcott Side Road intersections with Highway 3. 	<ul style="list-style-type: none"> - Replacement and/or completion of the relocation of structural and non-structural culverts within the existing highway corridor. - Partial depth asphalt removals and resurfacing of the existing highway.
3	2 months	<ul style="list-style-type: none"> - Highway 3 traffic opens to the completed four-lanes with all traffic signals operational. - Short term lane closures (non-peak period) required for the removal of the temporary transition work. 	<ul style="list-style-type: none"> - New traffic signals are completed and operational. - The temporary transition work is removed at the temporary traffic signals at Division Road (Essex Road 29) and Union Avenue (Essex Road 34) intersections, and at the temporary transitions constructed at the west and east ends of the project. - Final grading and clean up is completed.

Proposed Mitigation

The means and methods for construction should minimize the impacts to traffic progression and retain access to all sideroads until all of the traffic signals are operational at the final stage. This could be completed by adhering to the following principles.

1. One lane in each direction on Highway 3 is to be maintained at all times except for short term one lane closures completed during non-peak periods. Table 7-3 represents the short-term one lane closure periods for the project.
2. Short duration closures are permitted for the following sideroads: Concession Road 9, Concession Road 8, South Talbot Road, Upcott Side Road to the south of Highway 3, Essex Road 18, and Graham Side Road at Highway 3. No consecutive sideroads are to be closed at any time. Cameron Side Road, Marsh Road, and Upcott Side Road to the north of Highway 3 are to remain open until closed in the second stage.
3. For each of these activities, access and egress from the work area will be required. Access and egress to Highway 3 will be completed at the sideroad intersections. No mid-block access and egress will be provided.
4. Given the access and egress limitations of the work on the sideroads, the posted speed on Highway 3 could remain at 80 km/hr for Stage 1 but reduced to 60 Km/hr in Stage 2 and returned to 80 km/hr in Stage 3. The rationale for the reduction in Stage 2 is the characterization change of the intersections with Belle River Road (Essex Road 27), Essex Road 18 and Graham Side Road. These intersections will remain as stop condition during Stage 2 with signalization occurring at the beginning of Stage 3.

Table 7-3 Highway 3 One Lane Closures

Location	Permitted Closure Periods
Arner Townline (Essex Road 23) to Division Road (Essex Road 27)	00:00 to 14:00 16:00 to 24:00
Division Road (Essex Road 27) to Union Avenue (Essex Road 34)	00:00 to 24:00
All Municipal Roads Impacted by the Work	00:00 to 24:00

7.3.9 Local Road Network Improvements

Potential Impacts

The 2020 Recommended Plan requires several improvements to the local area road network under the ownership and jurisdictional responsibility of either Essex County or the Town of Kingsville (Table 7-4).

Table 7-4 Local Area Road Network Improvements

Required Road Improvement	Jurisdictional Responsibility
Concession Road 9 cul-de-sac	Town of Kingsville
Concession Road 8 connection to McCain Side Road	Town of Kingsville
Belle River Road (Essex Road 27) auxiliary lane widening	Essex County
South Talbot Road Realignment at Belle River Road	Town of Kingsville
Division Road Realignment and auxiliary lane widening	Essex County
Unnamed Road between realigned Division Road and Inman Side Road	Town of Kingsville
South Talbot Road connection to realigned Division Road	Town of Kingsville
South Talbot Road cul-de-sac east of Division Road	Town of Kingsville
South Talbot Road cul-de-sac south of Highway 3	Town of Kingsville
Upcott Side Road cul-de-sac north of Highway 3	Town of Kingsville



Required Road Improvement	Jurisdictional Responsibility
Upcott Side Road closure south of Highway 3	Town of Kingsville
Essex Road 18 Realignment	Essex County
Graham Side Road auxiliary lane widening	Town of Kingsville
Union Avenue (Essex Road 34) auxiliary lane widening	Essex County

Proposed Mitigation Measures

MTO would undertake the required local area road improvements to municipal standards as part of constructing the 2020 Recommended Plan, but the roads will remain under the ownership and jurisdictional responsibility of either Essex County or the Town of Kingsville.

To implement the 2020 Recommended Plan, the following matters would need to be resolved with either Essex County or the Town of Kingsville.

- Essex County to review and implement a posted speed change for Division Road (Essex Road 29) north of Highway 3.
- Essex County to review and implement a posted speed change for Essex Road 18 north and south of Highway 3.
- The Town of Kingsville to approve the sideroad closures at Highway 3 for Cameron Side Road, Concession Road 9, Marsh Road, Concession Road 8, Inman Side Road, South Talbot Road, and Upcott Side Road.

7.4 Cultural Environment

7.4.1 Archaeological Resources

Potential Impacts

There is the potential for archaeological resources to be uncovered through the construction of the 2020 Recommended Plan based on the previously completed archaeological assessments associated with the Highway 3 Study Area and the Stage 1 Archaeological Assessment (AA) carried out as part of the Study.

Proposed Mitigation Measures

A Stage 2 AA is planned to be conducted in 2021 to identify and confirm the presence or absence of archaeological resources in the Study Area, as well as determine the degree of cultural heritage value of any archaeological resources found.

7.5 Environmental Permits and Approvals

In addition to satisfying the Ontario *Environmental Assessment Act*, there are several permits and approvals that may be required under municipal and provincial legislation to implement the 2020 Recommended Plan.

Table 7-5 lists the anticipated post-EA permits and approvals by approval authority. The actual required post-EA permits, and approvals will be confirmed as part of detail design and obtained prior to construction.

Table 7-5 Anticipated Post-EA Permits and Approvals

Municipal Approvals	
Approval Authority	Anticipated Permit or Approval Required
Town of Kingsville	Council approvals are required for the closure of the following municipal roads at Highway 3: Cameron Side Road / Concession Road 9 Marsh Road / Concession Road 8 Inman Side Road / South Talbot Road Upcott Side Road
Town of Kingsville	Municipal Drain modifications will need to be assessed in accordance with the Drainage Act
County of Essex	Council approvals are suggested for the two posted/regulatory speed reductions on County roads being recommended: A reduction in the posted speed for Division Road to 50 km/hr or 60 km/hr in the area of the proposed improvements. A reduction in the posted speed for Essex Road 18 to 60 km/hr in the area of the proposed improvements.
Provincial Approvals	
Approval Authority	Anticipated Permit or Approval Required
Ministry of Environment, Conservation and Parks	Register Notice of Activity for impacts to Barn Swallow habitat under the <i>Endangered Species Act</i>
Ministry of Environment, Conservation and Parks	Register Notice of Activity for impacts to Butternut under the <i>Endangered Species Act</i>
Ministry of Heritage, Sport, Tourism and Culture Industries	Confirmation Letter that applicable Archaeological Assessments have been accepted into the Ontario Public Register of Archaeological Assessments under the Ontario Heritage Act
Federal Approvals	
Approval Authority	Anticipated Permit or Approval Required
Fisheries and Oceans Canada (DFO)	A DFO Request for Review under the <i>Fisheries Act</i> shall be submitted to DFO for approval and confirmation to proceed for the proposed works groupings (i.e., channel infill) that have been identified to potentially result in the death of fish or HADD of fish habitat.

7.6 Monitoring

As part of detail design, an Environmental Synopsis will be developed for future distribution to the Contract Administrator and Contactor outlining the environmental elements associated with the Project, environmental issues that may arise during construction, environmental documents available, roles and involvement of specific review agencies, and a summary of environmental concerns and commitments table.



During construction, the on-site Contract Administrator will ensure that implementation of mitigating measures and key design features are consistent with the contract, external commitments, and permit requirements. In addition, the effectiveness of the environmental mitigating measures will be assessed to ensure that:

- Individual mitigating measures are providing the expected control and/or protection.
- Composite control and/or protection provided by the mitigating measures is adequate.
- Mitigation measures are maintained, and any necessary repairs completed quickly; and
- Additional mitigating measures are provided, as required, for any unanticipated environmental problems that may develop during construction.

An Environmental Inspector will ensure that the environmental protection measures outlined in this report and in the subsequent contract documents / specifications are carried out. If problems develop, the MTO Environmental Planner and appropriate external ministry and/or agency representatives will be contacted to provide additional input and to address specific notification requirements as may be required under specific legislation.

If the impacts of construction differ from those anticipated, or the method of construction is such that there are greater than anticipated impacts, the Contractor's methods of operation will be changed or modified to reduce those impacts.

Table 7-6 Summary of Environmental Concerns and Commitments Table

ID #	Environmental Component	Category	Issues/Concerns/Potential Effects	Concerned Agencies	Section	Mitigation/Protection/Monitoring
1.0	Natural Environment	Fish and Fish Habitat	<ul style="list-style-type: none"> Culvert Replacement and Extension', 'New Sideroad Culvert Installation on Existing Municipal Drains' 	MTO/ DFO/ MNRF	7.1.2	<ul style="list-style-type: none"> Death of fish or HADD of fish habitat can likely be avoided or mitigated through implementing best management practices, adhering to in-water timing restrictions, and using site specific Conduct Environmental Protection for Construction in Waterbodies and Waterbody Banks in accordance with OPSS 182 to protect fish and fish habitat and maintain the construction works Conduct the control of water from any dewatering operations in accordance with OPSS 518,
1.0	Natural Environment	Fish and Fish Habitat	<ul style="list-style-type: none"> Culvert Relocation and Municipal Drain Realignment', 'New Sideroad Culvert Installation Requiring Municipal Drain Realignment', and 'Municipal Drain Realignment to accommodate Cul- 	MTO/ DFO/ MNRF	7.1.2	<ul style="list-style-type: none"> The proposed works may result in the death of fish or the HADD of fish habitat. This work may not be in compliance with the <i>Fisheries Act</i> and of the MTO/DFO/MNRF Fisheries Protocol and
1.0	Natural Environment	Fish and Fish Habitat	<ul style="list-style-type: none"> Potential impacts to fish and fish habitat because of minor drainage works. 	MTO/ DFO/ MNRF	7.1.2	<ul style="list-style-type: none"> For proposed minor routine drainage works it has been determined these works pose minimal
2.0	Natural Environment	Vegetation, Flora, Natural Heritages, Wildlife and Wildlife Habitat	<ul style="list-style-type: none"> Potential for the temporary complete removal of the existing Right of Way (ROW) vegetation and the Potential sediment run-off discharging into nearby Potential leaks or spills of oil, gasoline and other fluids which could enter the surrounding natural Potential that Special Concern species may be impacted by the proposed culvert and widening Permanent loss of the ROW that currently functions Temporary disturbance of nesting activity and inadvertent harm to species using the ROW and 	MTO/ MNRF	7.1.3	<ul style="list-style-type: none"> Clearly demarcate work limits at outset of construction and minimize unnecessary vegetation clearing. Use appropriate vegetation clearing techniques. A silver birch identified along the south edge of the right-of-way, east of Graham Side Road and two white oaks identified along the south edge of the right-of-way, west of Concession Road 9 should be preserved, if possible, as Install temporary erosion and sediment control (ESC) measures prior to construction and maintain them throughout construction in accordance with OPSS 805. Routinely inspect ESC measures and repair, as required, keeping them in place until restoration is complete and Avoid working underneath canopy of existing trees to be retained. Where equipment must operate in close proximity to trees to be retained, prune branches using best management Where excavation is required in close proximity to trees, tree roots are to be cut/pruned to the face of the excavation with a clean and sharp handsaw or loppers. Pruning cuts should result in Ensure all construction machinery is cleaned and maintained prior to arrival on-site to prevent Properly contain any temporarily stockpiled soil, debris or other excess materials and any construction-related materials (e.g., inside silt fencing) in areas separated at least 30 m from watercourses/municipal drains in accordance with OPSS 180. All construction materials, excess materials and debris will be removed and appropriately disposed of following construction. Cut and grubbed material shall be disposed of through chipping or other appropriate means, in Control the potential for fuel oil and other hydrocarbon spills and leaks by utilizing off-site fuelling locations, a minimum distance of 30 m from a waterbody or wetland. The Contractor will have a Re-stabilize and re-vegetate exposed surfaces as soon as possible following disturbance, per OPSS 804 using native seed relevant to the seed zone and habitat type.

ID #	Environmental Component	Category	Issues/Concerns/Potential Effects	Concerned Agencies	Section	Mitigation/Protection/Monitoring
						<ul style="list-style-type: none"> Implement environmental inspection during construction to ensure that all mitigation measures are implemented properly, maintained, and repaired and remedial measures are initiated in a <p>ESA. No tree clearing should occur within the breeding bird period or bat maternity roosting period. Avoid vegetation clearing (including grubbing) during the breeding bird season (April 1 to August 31) and avoid tree removal during the bat maternity roosting season (April 1 to</p> <ul style="list-style-type: none"> Erect exclusion fencing around culvert works and highway widening activities during the active reptile season to avoid entrapment of reptiles in work zones. Synthetic Plastic Erosion Control blankets and mats cannot be used as they pose an entrapment hazard for reptiles. Only Any wildlife incidentally encountered during construction will not be knowingly harmed and will be allowed to move away on its own. In the event that an animal encountered during <p>continuing construction in the area would result in harm to the animal, all activities that could potentially harm the animal will cease immediately and the Contract Administrator will be notified. Any turtle encountered laying eggs will be avoided and not moved or disturbed. If any migratory bird protected under the MBCA builds a nest in the construction area, construction</p>
3.0	Natural Environment	Species at Risk	Potential impacts to SAR species including Butternut, Barn Swallow, and Eastern Foxsnake,	MTO/MECP	7.1.4	<ul style="list-style-type: none"> Undertake additional consultation with MECP to determine approval requirements for these SAR The following measures are proposed based on those detailed in the <i>Highway 3 Improvements, Town of Essex, GWP 317-98-00, Transportation Environmental Study Report Addendum</i> (Dillon A fact sheet and detection protocol for Eastern Foxsnake should be provided to the construction Workers must be vigilant and check work area and machinery for the presence of herptiles Measures shall be put in place to prevent herptiles from entering construction areas. These measures shall include the installation of temporary fencing prior to April 1 to exclude herptiles and contain the work area in proximity to drainage features and other potential natural habitats. Exclusion fences will be included in the Contract drawings and specifications. Fencing shall be inspected daily during active construction to check for breaches of instability and shall be kept in Exclusion fencing shall be installed according to the guidelines detailed in the <i>Best Practices Technical Note on Reptile and Amphibian Exclusion Fencing</i> (MNRF, 2013). It is not recommended that netting type erosion control measures be used for projects over drains. At these locations, alternatives such as Curlex Netfree© blanked or rip rap over geotextile fabric should be used for erosion control to prevent entanglement of Eastern Foxsnake.



ID #	Environmental Component	Category	Issues/Concerns/Potential Effects	Concerned Agencies	Section	Mitigation/Protection/Monitoring
						<ul style="list-style-type: none"> If herptile species are encountered in the construction area, work must be suspended until the animal is out of harm's way. If the species persists in the work area, a person qualified to handle For removal of structural culvert SC5, work will be conducted between April 1 and May 31 to avoid disturbance to or entrapment of hibernating snakes or snakes that may be nesting. Prior to commencement of work, the work area will be swept for snakes and exclusion fencing erected at Adhere to all relevant handling and MECP notification protocols to protect these species and any Adhere to timing windows: avoid vegetation clearing (including grubbing) during the breeding bird season (April 1 to August 31) and avoid tree removal during the bat maternity roosting In the event that a SAR, or potential SAR, is found within the construction area, the Contractor will immediately cease all work that could potentially harm the animal and will contact the Site Manager for direction, as these animals are protected under the <i>Endangered Species Act</i>. The Site Manager or their Environmental Inspector will then contact the MECP SAR Biologist for Follow species-specific or registration-specific mitigation measures associated with registration
4.0	Natural Environment	Groundwater	<ul style="list-style-type: none"> Low potential for impacting groundwater quantity Potential for mobilization of impacted groundwater 	MTO/ MECP	7.1.5	<ul style="list-style-type: none"> Apply MTO's BMPs to the construction activities (e.g., handling and storage of fuel, erosion and sediment control, etc.) and for the operation and maintenance of the highway (MTO Salt Assess the risks of geotechnical settlement in the event of any groundwater dewatering by a
5.0	Built Environment	Property Requirements	Need for property from 31 private property owners	MTO/Public	7.2.1	
6.0	Built Environment	Utilities/Municipal Services	<ul style="list-style-type: none"> Potential to reduce access across and to Highway 3 Potential conflicts with local utilities/municipal services because of highway widening and related 	MTO/Municipalities/ Utilities/Public	7.2.2	<ul style="list-style-type: none"> Provide alternative travel routes in the municipal road network, which would minimize potential Contact all affected utility/service providers during detail design so that potential conflicts would be confirmed and resolved through relocation in accordance with MTO and the utility/service
7.0	Built Environment	Properties of Potential Environmental Concern	<ul style="list-style-type: none"> Potential for subsurface impacts on the Highway 3 ROW from locations having identified environmental The quality and source of fill placement along the Highway 3 corridor (e.g., assumed to be present where the grade appears to have been raised) is 	MTO/ MECP	7.2.3	<ul style="list-style-type: none"> Place, where possible, the geotechnical boreholes in the vicinity of the areas of potential environmental concern identified via the Contamination Overview Study (COS) as having moderate or high risk, to assess for potential subsurface impacts that may affect the proposed Conduct a Phase I Environmental Site Assessment of the lands to be acquired by MTO Incorporate the requirements regarding the environmental characterization and management of Undertake an assessment of the quality of the fill, where encountered, if materials are required to be managed or reused off-Site as excess soil.



ID #	Environmental Component	Category	Issues/Concerns/Potential Effects	Concerned Agencies	Section	Mitigation/Protection/Monitoring
8.0			<ul style="list-style-type: none"> Potential for loss of agricultural land, including the permanent removal of 4.66 ha of Prime Agricultural Potential to disrupt farm operations by reducing access across and to Highway 3 and increasing overall travel time because of the planned sideroad closures, which could further separate farm operations that work both sides of Highway 3. 			<ul style="list-style-type: none"> See <i>Property Requirements</i> for proposed related mitigation measures. See <i>Utilities/Municipal Services</i> for proposed related mitigation measures.
9.0			<ul style="list-style-type: none"> Potential encroachment on 11 residential properties, including the total removal of approximal 0.27 ha of Potential to reduce access across and to Highway 3 and increase overall travel time for affected area residents because of the planned sideroad closures. 			<ul style="list-style-type: none"> See <i>Property Requirements</i> for proposed related mitigation measures. See <i>Utilities/Municipal Services</i> for proposed related mitigation measures.
			<p>properties with a total removal of approximately 0.42</p> <ul style="list-style-type: none"> Potential to reduce access across and to Highway 3 commercial businesses because of the planned 	MTO/Public	7.3.3	
			<ul style="list-style-type: none"> Potential to reduce access across and to Highway 3 for cyclists and pedestrians because the planned sideroad closures eliminate crossing points along 			<ul style="list-style-type: none"> Provide alternative travel routes in the municipal road network, which would minimize potential Ensure pedestrian signals are implemented at all planned signalized intersections to provide for
			<ul style="list-style-type: none"> Potential for a permanent increase in noise levels at four NSAs by 5 dBA or more (NSA 39a, NSA-59, 	MTO/MECP	7.3.5	<ul style="list-style-type: none"> Implement the recommended noise barrier for NSA-39a. With this barrier in place, the average noise level would be 60 dBA resulting in an average noise level reduction of 5 dBA compared to
			<ul style="list-style-type: none"> Potential for temporary or short-term construction related noise, which could impact receptors in the Potential for noise complaints from area residents 	MTO/MECP	7.3.6	<ul style="list-style-type: none"> Properly maintain all construction equipment according to manufacturer's recommendations and fit with efficient muffling devices as well as be in accordance with MECP Municipal Noise Control Consider further options for minimizing noise generated from construction equipment and/or Consider implementing a process for dealing with noise complaints during the construction
			<ul style="list-style-type: none"> Potential for localized air quality to be adversely affected during construction due to dust generation from construction activities and equipment 	MTO/MECP	7.3.7	<ul style="list-style-type: none"> Consider including a Best Management Practices Plan (BMPP) for Fugitive Dust in the
		Traffic Staging	<ul style="list-style-type: none"> Potential for construction activities to temporarily disrupt traffic operations on Highway 3 and the 	MTO/Municipalities/Public	7.3.8	
		Local Area Road	<ul style="list-style-type: none"> Improvements to the local area road network under the ownership and jurisdictional responsibility of 	MTO/Municipalities	7.3.9	<ul style="list-style-type: none"> MTO to carry out the required local area road improvements to municipal standards as part of constructing the 2020 Recommended Plan, but the roads will remain under the ownership and jurisdictional responsibility of either Essex County or the Town of Kingsville.



ID #	Environmental Component	Category	Issues/Concerns/Potential Effects	Concerned Agencies	Section	Mitigation/Protection/Monitoring
			be required to implement the 2020 Recommended Plan.			
17.0	Cultural Environment	Archaeological Resources	<ul style="list-style-type: none">Potential for uncovering archaeological resources.	MHSTCI	7.4.1	<ul style="list-style-type: none">Conduct a Stage 2 Archaeological Assessment as per the recommendations of the completed Stage 1 AA.

8. Summary

The results of reviewing the 2006 approved Transportation Environmental Study Report (TESR) and Preliminary Design Report (PDR) for the widening of 15.6 km of Highway 3 from 1.2 km east of Essex Road 23 easterly to 1.1 km east of Union Ave (Essex Road 34) in Essex County have been documented in this report. The improvements for this section of Highway 3 were originally approved in 2006 as part of the completed TERSR and PDR and included highway widening, municipal road improvements, drainage improvements, illumination, and signalization.

The widening of Highway 3 is classified as a Group 'B' project in accordance with the Ministry of Transportation's (MTO's) *Class Environmental Assessment for Provincial Transportation Facilities, 2000* (Class EA). Since the approved TERSR is older than five years, the original findings need to be reviewed with any significant changes being documented in a TERSR Addendum, which is to be issued for a 30-day public comment period.

As a result, MTO initiated the Highway 3 Widening and Safety Enhancements Study (Study) to review the approved 2006 improvements in comparison to the current transportation and environmental conditions in the Study Area. Taking the existing Study Area conditions into consideration, the improvements approved in 2006 for this section of Highway 3 were assessed to determine whether any significant changes were appropriate.

The assessment confirmed that a number of the improvements approved in 2006 were still appropriate and included the widening Highway 3 from two to four-lanes with a 15 m depressed median, the realignment of Division Road (Essex Road 29) to provide intersection separation, the closure of Inman Side Road / South Talbot Road at Highway 3, and traffic signals at Division Road (Essex Road 29) and Union Avenue (Essex Road 34). However, the assessment identified several significant changes to what was originally approved, which were developed into the 2020 Technically Preferred Plan and included the following:

- Installation of traffic signals at the Highway 3 and Belle River Road (Essex Road 27), Essex Road 18 and Graham Side Road intersections; and
- The closure of the intersections with Highway 3 at Cameron Side Road / Concession Road 9, Marsh Road / Concession Road 8, and Upcott Side Road.

The Technically Preferred Plan was modified as part of finalizing the recommended improvements for the Study in response to comments received from review agencies, particularly the County of Essex and Town of Kingsville, and

the public. The following summarizes the planned improvements put forward as part of the 2020 Recommended Plan for Highway 3 within the Study Area. The items highlighted in bold and in italics are considered to be significant changes to the 2006 Approved Plan.

- A new 4-lane cross section with a 15 m depressed median on the existing alignment, with two new lanes being construction for the eastbound direction and resurfacing/ reconstruction of the existing lanes for the westbound direction.
- ***Closure of Cameron Side Road/Concession Road 9, Marsh Road/Concession Road 8, Inman Side Road/South Talbot Road, and Upcott Side Road.***
- ***Concession Road 8 and McCain Side Road connection and intersection removal.***
- Traffic signal replacement for the Highway 3 widening at Division Road (Essex Road 29) and Union Ave (Essex Road 34).
- ***New traffic signals at Belle River Road (Essex Road 27), Essex Road 18, and Graham Side Road.***
- ***Realignment of South Talbot Road at Belle River Road (Essex Road 27) and Division Road (Essex Road 29).***
- Realignment and extension of Division Road (Essex Road 29) from the new west connection of South Talbot Road to Highway 3.
- Construction of a new Unnamed Road from realigned Division Road (Essex Road 29) to Inman Side Road.
- ***Realignment of Essex Road 18 at Highway 3.***
- Drainage improvements including the extension of six mainline structural culverts, replacement/extension of existing centerline culverts along with the installation of additional culverts for the modifications to the local road network.

With implementation of the proposed impact management measures and monitoring programs, the potential impacts associated with constructing the 2020 Recommended Plan should be satisfactorily mitigated. The potential impacts and proposed impact management measures and monitoring programs will be confirmed as part of detailed design and the acquisition of several post EA permits/approvals.