

# Welcome!

## County of Lambton

### Intersection Improvements at County Road 4 and County Road 31 Municipal Class EA Public Consultation Centre



Welcome to the Public Consultation Centre (PCC) for the Intersection Improvements at County Road 4 and County Road 31 Schedule B Municipal Class Environmental Assessment Study.

Should you have any questions regarding the study, please contact the County or Consultant Project Managers listed below.

Several background reports are available to supplement the information shown in the exhibits. Should you have any questions regarding the materials or any other aspect of the study, please contact the following by **July 12, 2023**.

Steve Taylor, P.Eng.  
BT Engineering Inc., Consultant Project Manager  
Email: [stevenj.taylor@bteng.ca](mailto:stevenj.taylor@bteng.ca)  
Phone: 613-228-4813

Glen Hamill, C.E.T.  
Public Works Department - Engineering  
County of Lambton  
Email: [glen.hamill@county-iambton.on.ca](mailto:glen.hamill@county-iambton.on.ca)  
Phone: 519-845-0809 Ext 5250

There is an opportunity at any time during the Class EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act*. Personal information you submit will become part of the public record that is available to the general public unless you request that your personal information remain confidential.

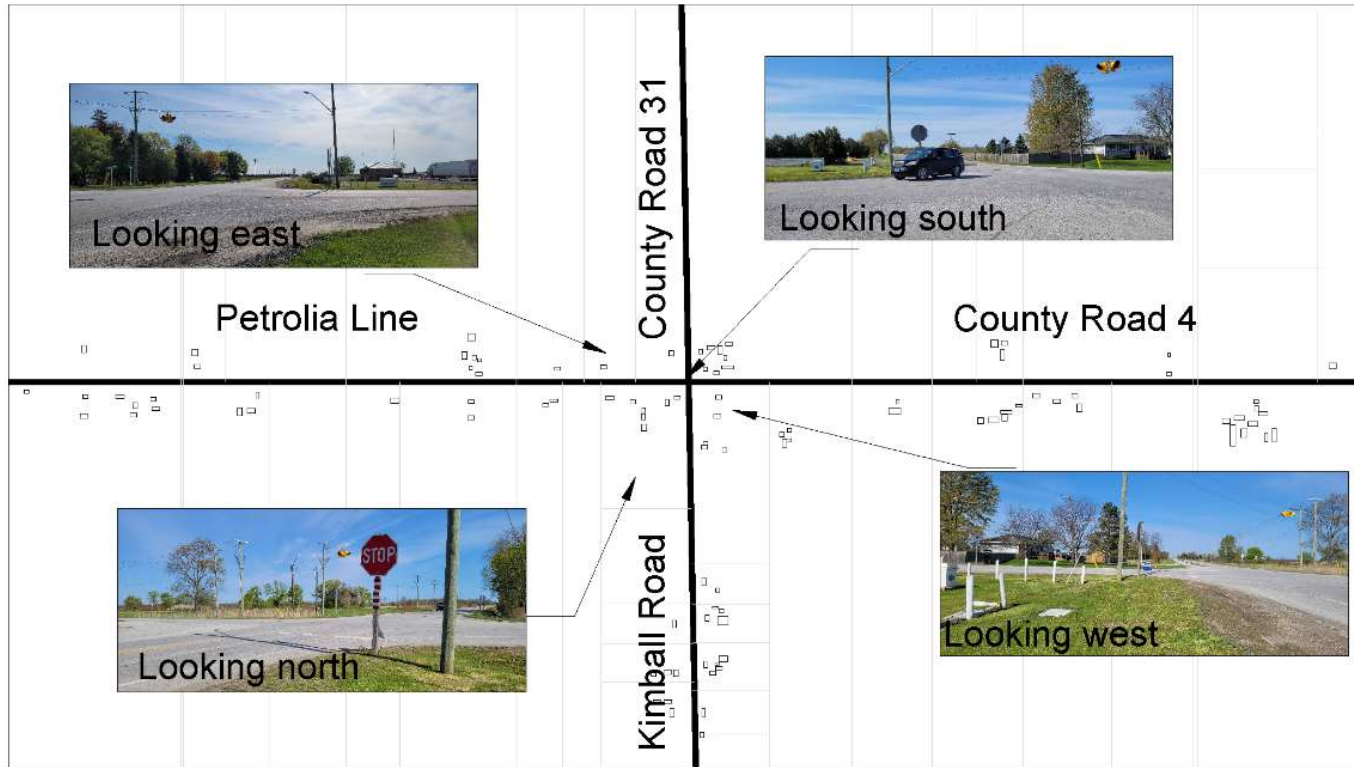


# Introduction

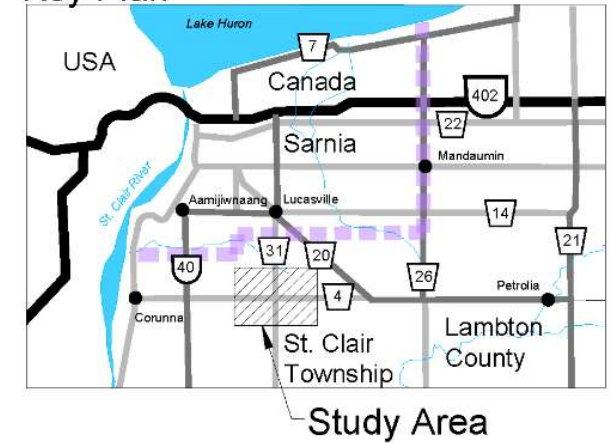
The County of Lambton is conducting this Municipal Class Environmental Assessment (EA) for safety improvements to the intersection of County Road 4 and County Road 31. The Study has developed and evaluated alternatives for the roadway intersection and has determined the property requirements to implement the project.

Alternatives considered include an all-way stop, traffic signals or a roundabout control.





Key Plan



# County of Lambton

## Intersection Improvements at County Road 4 and County Road 31 Municipal Class EA

# Study Area



# Purpose of Public Consultation Centre (PCC)

The purpose of this event is to engage the public/stakeholders on their perspectives and interests in the Study.

This PCC will present:

- Overview of the Municipal Class Environmental Assessment Process.
- Introduction and Problem and Opportunity Statement for the Study.
- Description of the existing conditions in the area.
- Summary of work completed to date.
- Alternative Planning Solutions, Evaluation and Preliminary Recommendations.
- Next Steps.

# Municipal Class Environmental Assessment (Class EA) Process

The CR 4 (Petrolia Line) and CR 31 (Kimball Road) Intersection Improvements Environmental Assessment Study has been initiated as a Schedule B Class EA, based on the range of anticipated effects in accordance with the Municipal Class Environmental Assessment (2023). The Study may be reclassified as an Exempt Schedule project, depending on the recommendations.

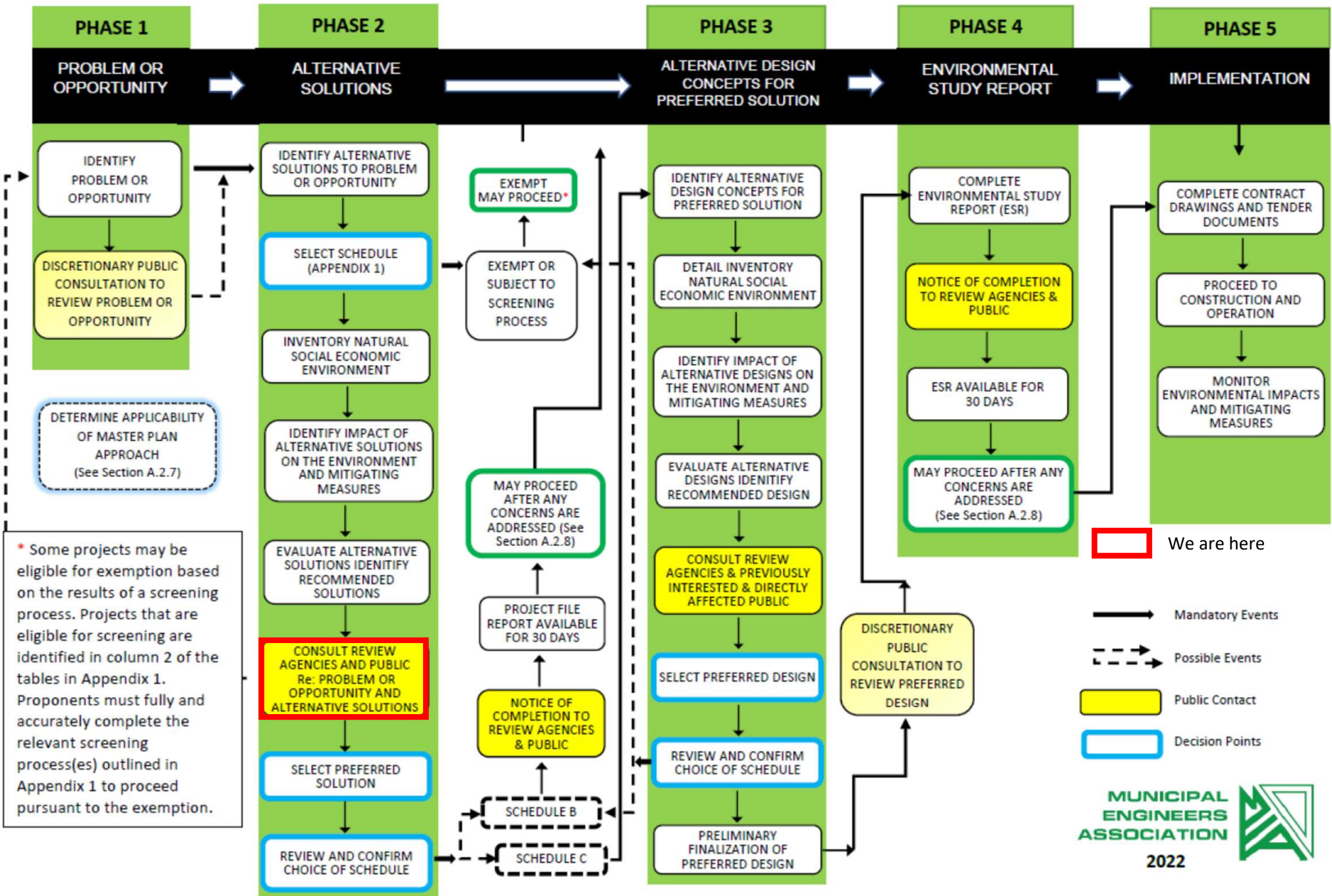
The Schedule B EA Study will be documented in a Project File, which is a summary of all public consultation, data, recommendations and reports produced for the project.

If after viewing the PCC exhibits and making your concerns known to the project team, you still have concerns at the time the Notice of Study Completion is published in the media and on the County website, you will have the right to request the Minister of Environment, Conservation and Parks to undertake a higher level of assessment on the project based on two criteria:

- The need for a Part II Order, now referred to as a Section 16 Order, regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights.
- The need for additional assessment and evaluation of all other non-Aboriginal issues and concerns.

These rights and guidance on how to contact the Minister of Environment, Conservation and Parks will be described in the Notice of Study Completion at the end of the Study.

The Municipal Class EA Process Flowchart is illustrated on the following exhibit.



# Problem and Opportunity Statement

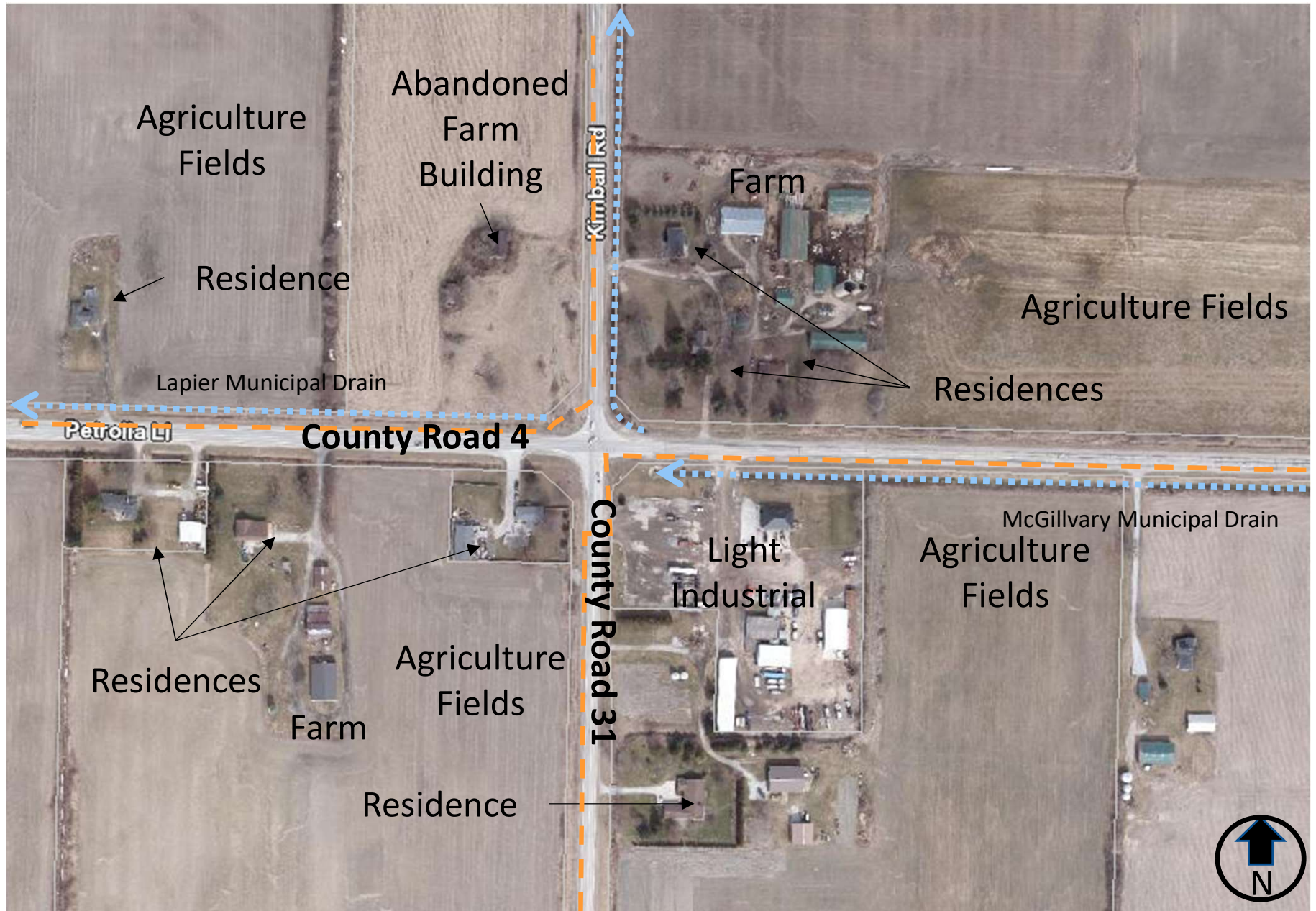
Develop an intersection design that will reduce the frequency and severity of vehicular collisions at the County Road 4/31 intersection while minimizing delays to the travelling public and impacts to adjacent landowners. Where possible, the intersection configuration should also minimize construction and operational/maintenance costs and can accommodate oversized vehicles.



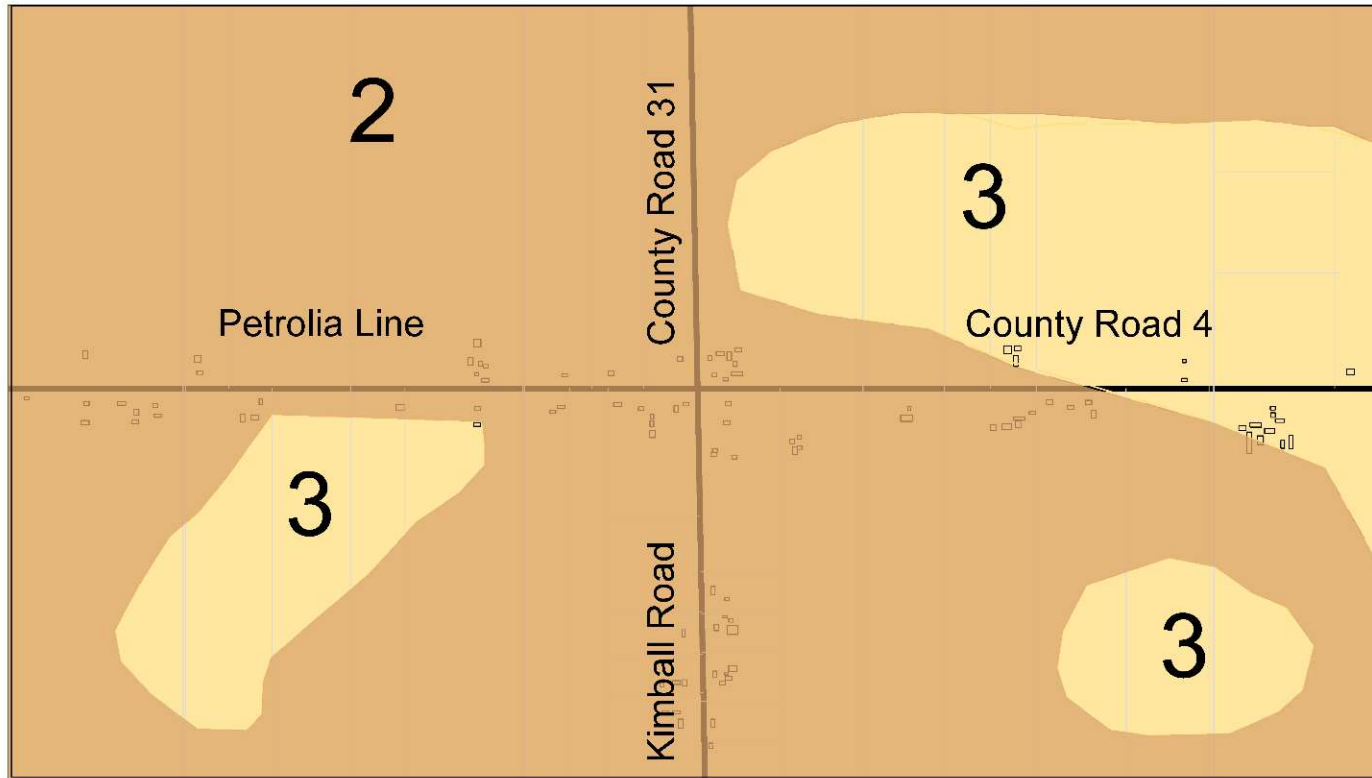
# Existing Land Uses

## Legend

- Enbridge Gas Line
- ... Municipal Drains







Legend

- Class 2 - Moderate Limitations
- Class 3 - Moderate Severe Limitations



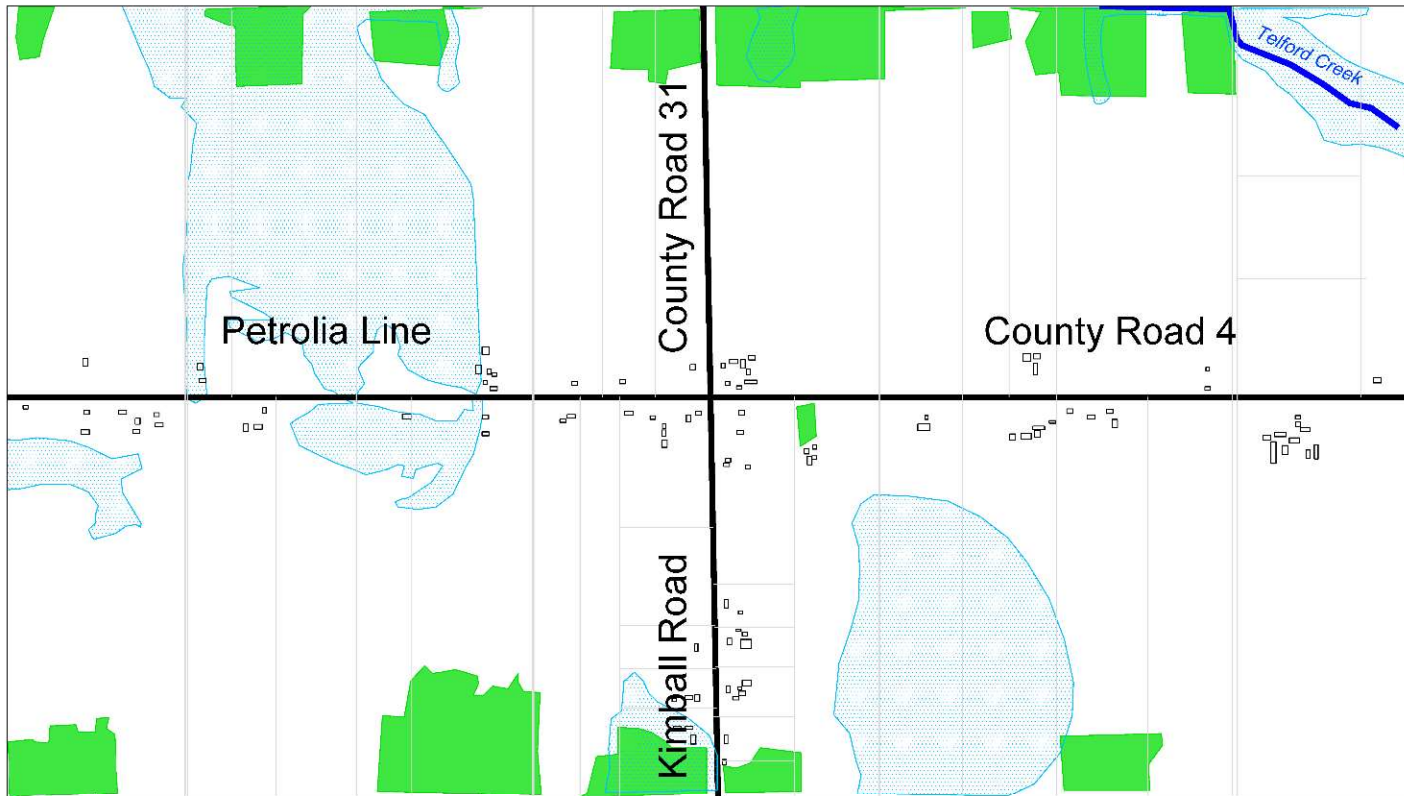
**County of Lambton**  
**Intersection Improvements at**  
**County Road 4 and County**  
**Road 31 Municipal Class EA**

Source:  
 County of Lambton Appendix Map E - CLI Class for Agriculture,  
 January 2018


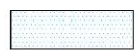

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**Canadian Land Inventory Class for Agriculture**



**Legend**

-  Woodlots
-  Floodplain
-  Watercourse



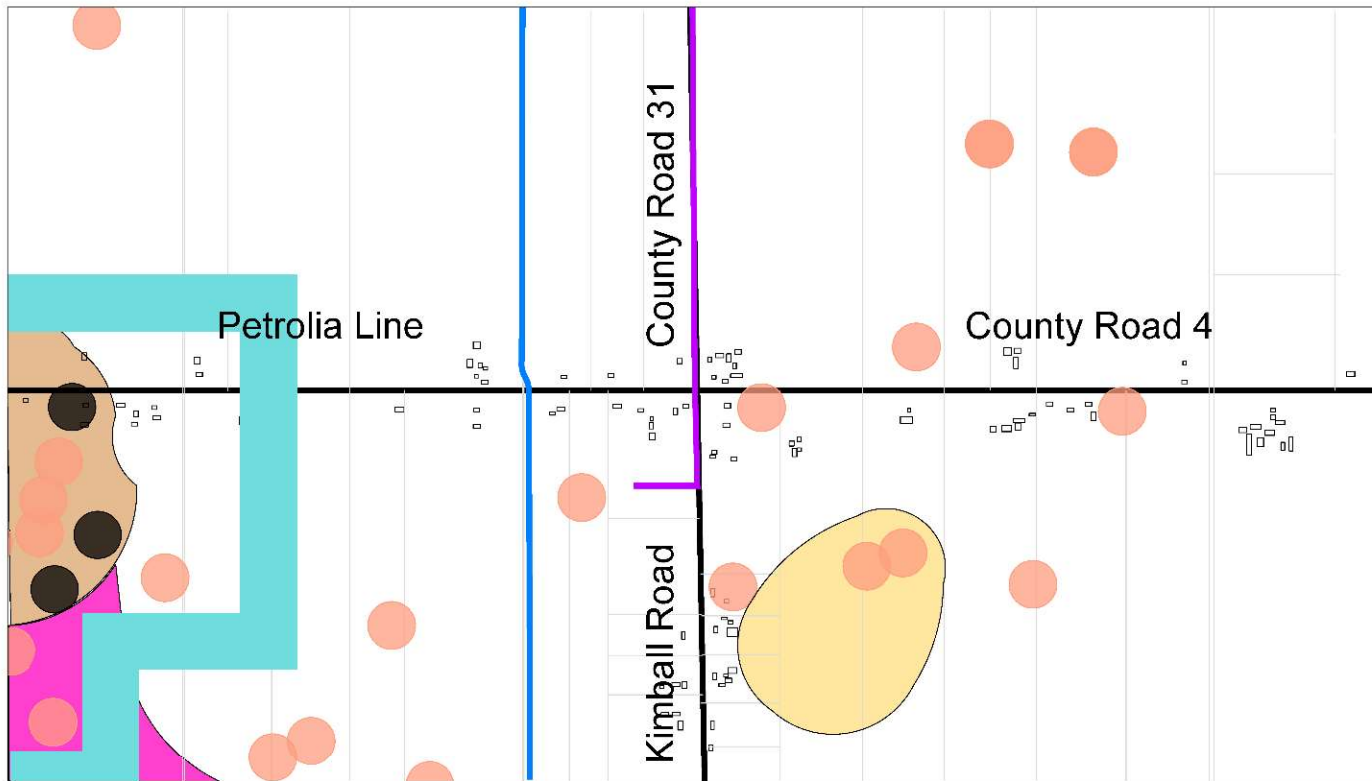
**County of Lambton  
Intersection Improvements at  
County Road 4 and County  
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**Natural Environment**









Source:  
2128997\_Regulations Viewer\_Floodplain St Clair Region CA

NTS





**Legend**

-  Oil Pool
-  Natural Gas Storage Pool
-  Past Producing Natural Gas Pool
-  Designated Hydrocarbon Storage Area
-  Hydrocarbon Well - Active
-  Hydrocarbon Well - In Active
-  Active Pipeline  
Source: Plains Asset Location Map
-  Proposed Pipeline  
Source: Robert E. Dale Ltd



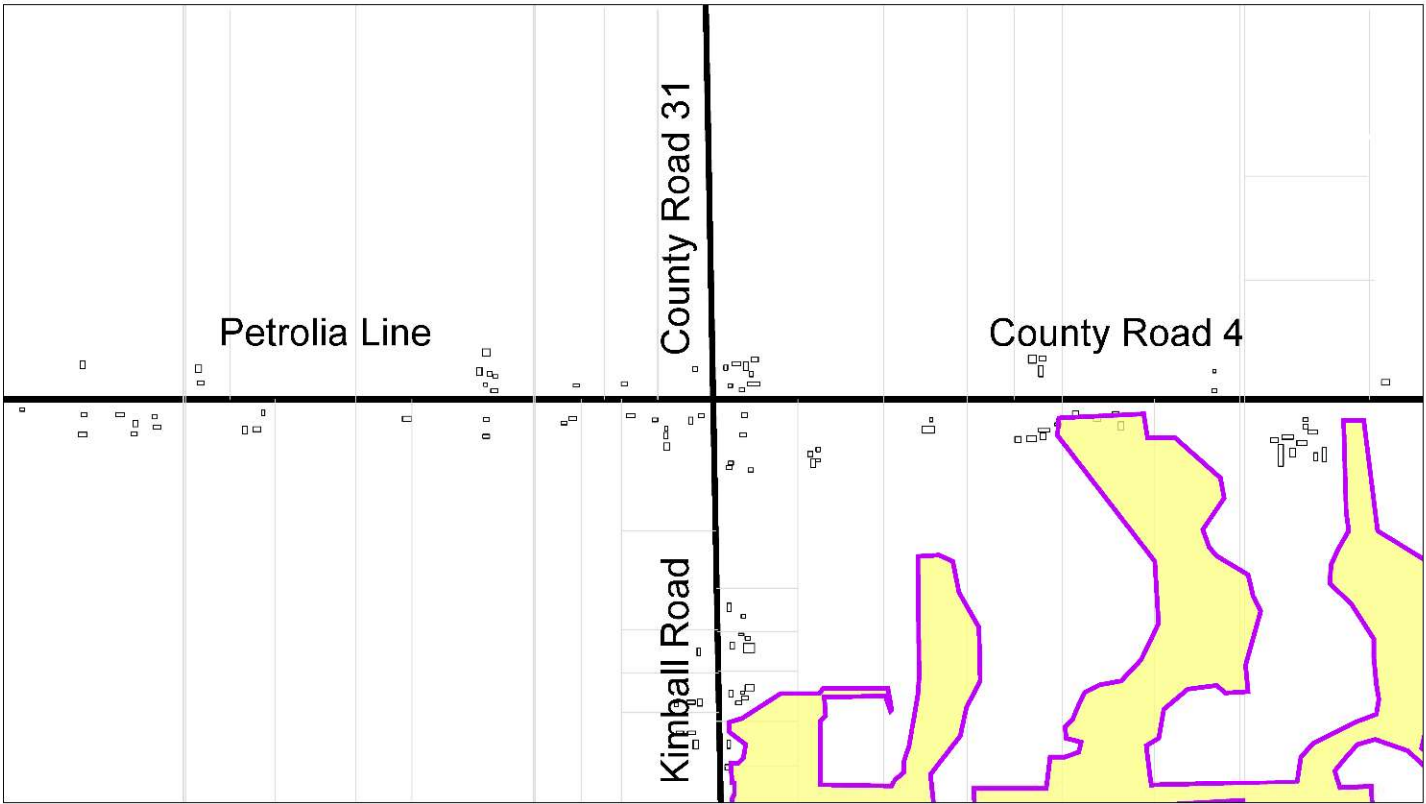
**County of Lambton  
Intersection Improvements at  
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# Oil Resources


Source:  
County of Lambton Appendix Map C - Oil, Natural Gas and Salt  
Resources January 2018

NTS





**Legend**

 Significant Groundwater Recharge Area



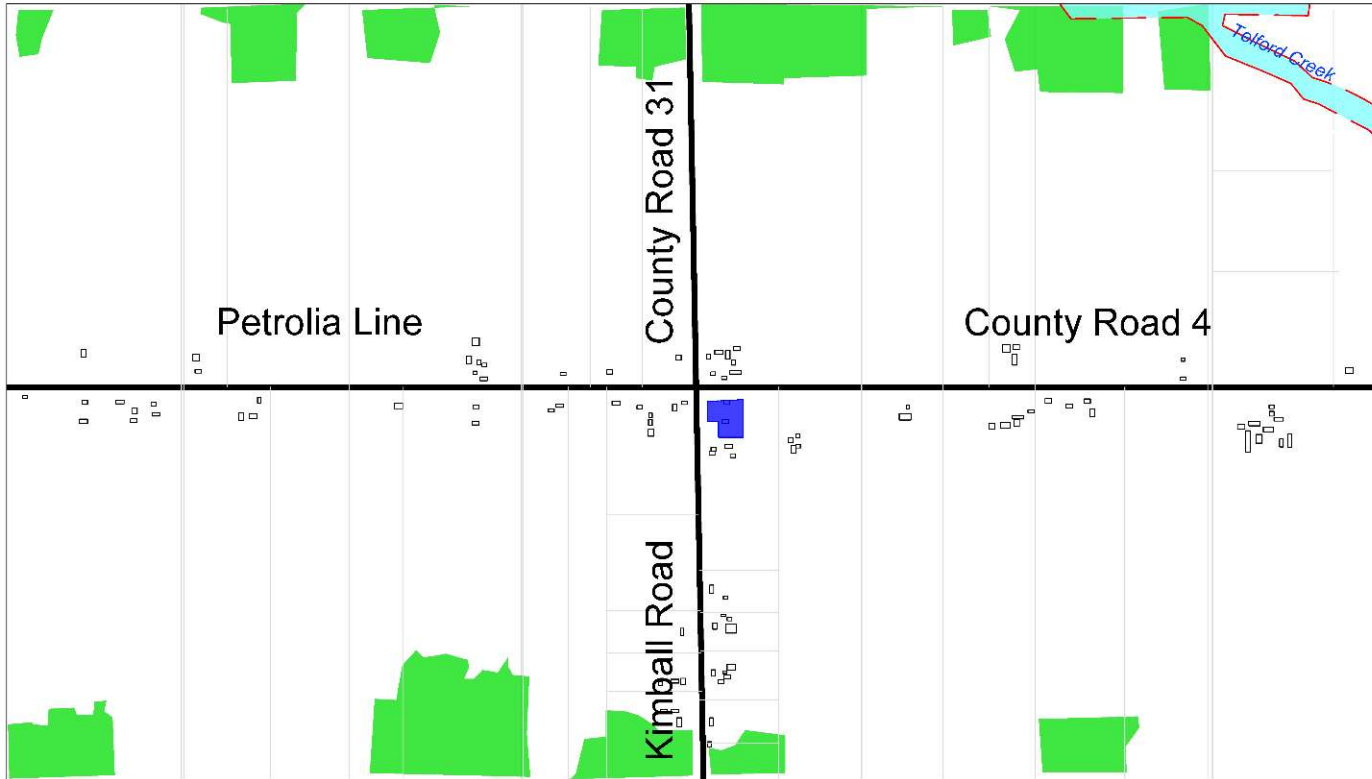
**County of Lambton  
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Source:  
County of Lambton Appendix Map A - Source Protection Plans,  
January 2018





**Source Water Protection**

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Legend

-  Environmental Protection - Woodlots
-  Environmental Protection - Hazard
-  Agricultural - 1
-  Industrial Type 2



**County of Lambton**  
**Intersection Improvements at**  
**County Road 4 and County**  
**Road 31 Municipal Class EA**

**Zoning**

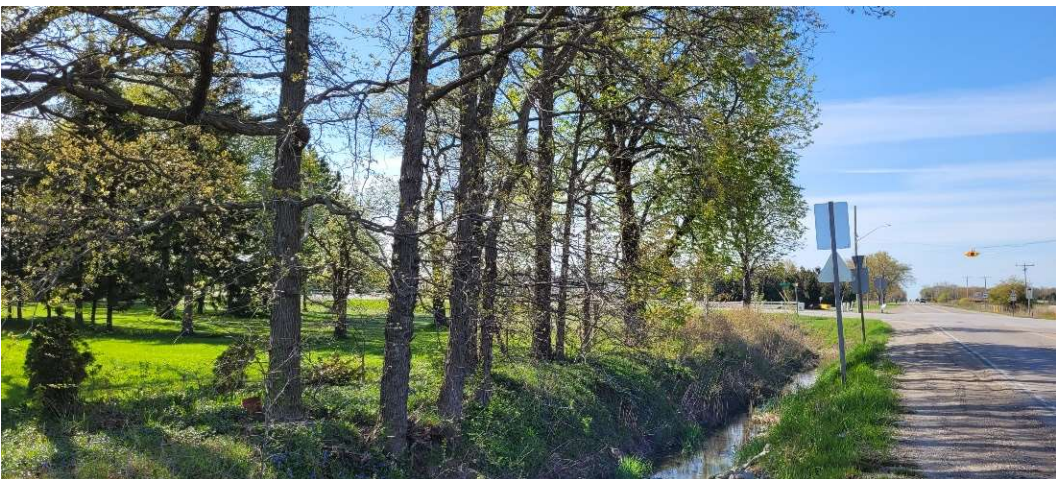
Source:  
 Township of St. Clair Schedule "A" May 2004

NTS



# Drainage Existing Conditions and Stormwater Management Recommendation

- The intersection is located in the St. Clair Region Conservation Authority.
- Existing road drainage is conveyed by roadside ditches.
- There is a municipal drain/ditch in the northeast quadrant of the intersection within the road allowance that will be modified by the Township of St. Clair.
- Given that the localized increase in percent imperviousness for the intersection under proposed conditions is small ( $< 5\%$ ), it is recommended that runoff from the Study Area be drained using roadside ditches (grassed swales).

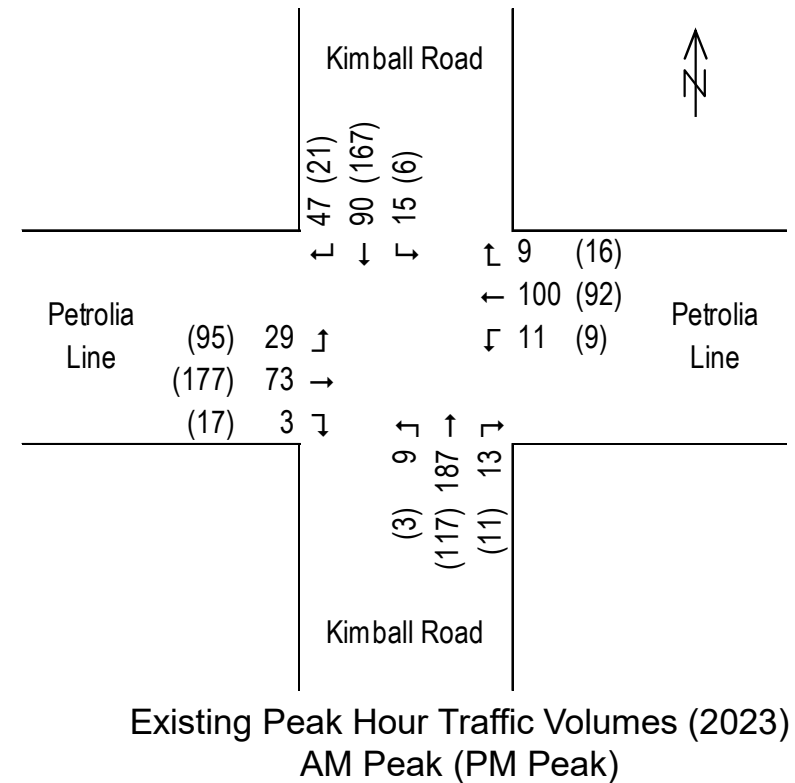


# Proposed Municipal Drain Improvements 2023

- Changes to the municipal drain are being implemented to accommodate over sized vehicle wheel tracking at the intersection.
- These movements currently occur on the north and west legs of the intersection.
- Modifications to the McGillvary Municipal Drain have been planned under the *Municipal Drainage Act*. As per By-Law 34, 2022.

# Existing Traffic

- A traffic review was undertaken in May 2023 for the intersection of County Road 4 (Petrolia Line) and County Road 31 (Kimball Road) west of Petrolia. Both are 2-lane rural arterial roads. Stop control is in place northbound and southbound on Kimball Road. Posted speed limits are 90 km/h on Petrolia Line (reduced to 70 km/h through the intersection) and 80 km/h on Kimball Road. There are no auxiliary turning lanes at the intersection, and several access driveways are in the vicinity.
- The traffic demand is shown to the right. The intersection is identified as part of the Oversized Load Corridor.





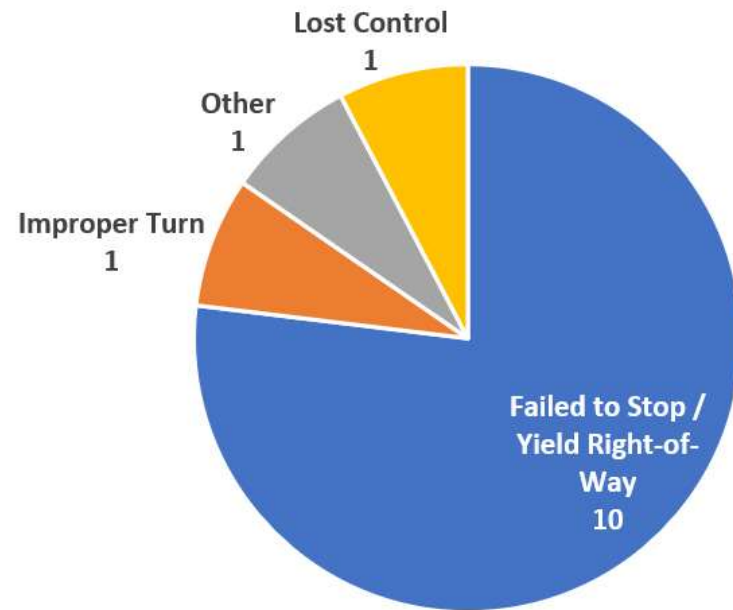
# Road Safety

2017-2022

- 2 Fatal Collisions
- 2 Injury Collisions
- 9 Property Damage Collisions, most involving significant vehicle damage
- 13 collisions in total
- 10 angle collisions in the intersection between vehicles from Kimball Road and Petrolia Line, 4 of which resulted in injury or death.
- 10 failures to either stop or yield the right-of-way on Kimball Road
- Estimated cost of 2 fatal, 2 injury and 9 property damage collisions\*:
  - \$3.5M in direct costs
  - \$27.5 M in societal costs

*\*Actual collision costs differ in every crash due to the specific circumstances related to each collision event—the damage, injuries, response, and lasting effects. Collision costs are used to prioritize road safety improvements and are not intended to represent the value of a human life.*

Driver Action 2017-2022




## Mitigation Measures

Mitigation	Intent	Efficacy
No Changes	Continue to warn drivers with rumble strips and flashing beacons.	Has not prevented angle collisions or eliminated drivers failing to stop on Kimball Road.
Traffic Signals (Not Warranted)	Reduce conflicts in intersection.	Would typically increase rear end collisions. Will reduce but not prevent angle collisions.
Roundabout	Improve safety and traffic operations (reduce delays)	Will reduce vehicle speeds and conflict points resulting in fewer injury and fatal collisions.

# Alternative Planning Solutions

The Alternative Planning Solutions for this Study are:

- Do Nothing - The Do Nothing Alternative must be considered, as mandated by the Class EA. It represents a baseline from which other approaches can be compared. The Do Nothing does not address the Problem Statement and is not recommended to be carried forward.
- All-way stop
- Signalized Intersection
- Roundabout Intersection 

The intersection control alternatives advantages and disadvantages are described on the following exhibits.

The Intersection Control Review Memos are available at the Resource Table.

# Advantages/Disadvantages of All-way Stop

## Advantages

- Low capital cost.

## Disadvantages

- 10 years or more (2032) before off-peak traffic volumes increase sufficiently to consider all-way stop control;
- Result in an increase in rear end vehicle collisions; and
- An all-way stop would make the existing intersection worse; the most common cause of the reported collisions is the failure of northbound and southbound motorists to stop for crossing traffic. It would create a similar condition for east/west traffic by adding an unexpected stop on Petrolia Line.



Recommended not to be Carried Forward



# Advantages/ Disadvantages of Signals

## Advantages

- Design consistency.

## Disadvantages

- Higher maintenance costs;
- Longer delays for most of the traffic especially during off-peak periods;
- Requires left turn lanes on all four legs of the intersection;
- Increased collisions in comparison to roundabout control; and
- Volumes would not warrant a traffic signal for 20 or more years..



Recommended not to be Carried Forward.



# Advantages and Disadvantages of a Roundabout



## Advantages

- Improves safety (reduces frequency and severity of collisions);
- Improves traffic operations (reduces delays);
- Reduces travel speeds; and
- Design accommodates oversized loads and farm equipment.

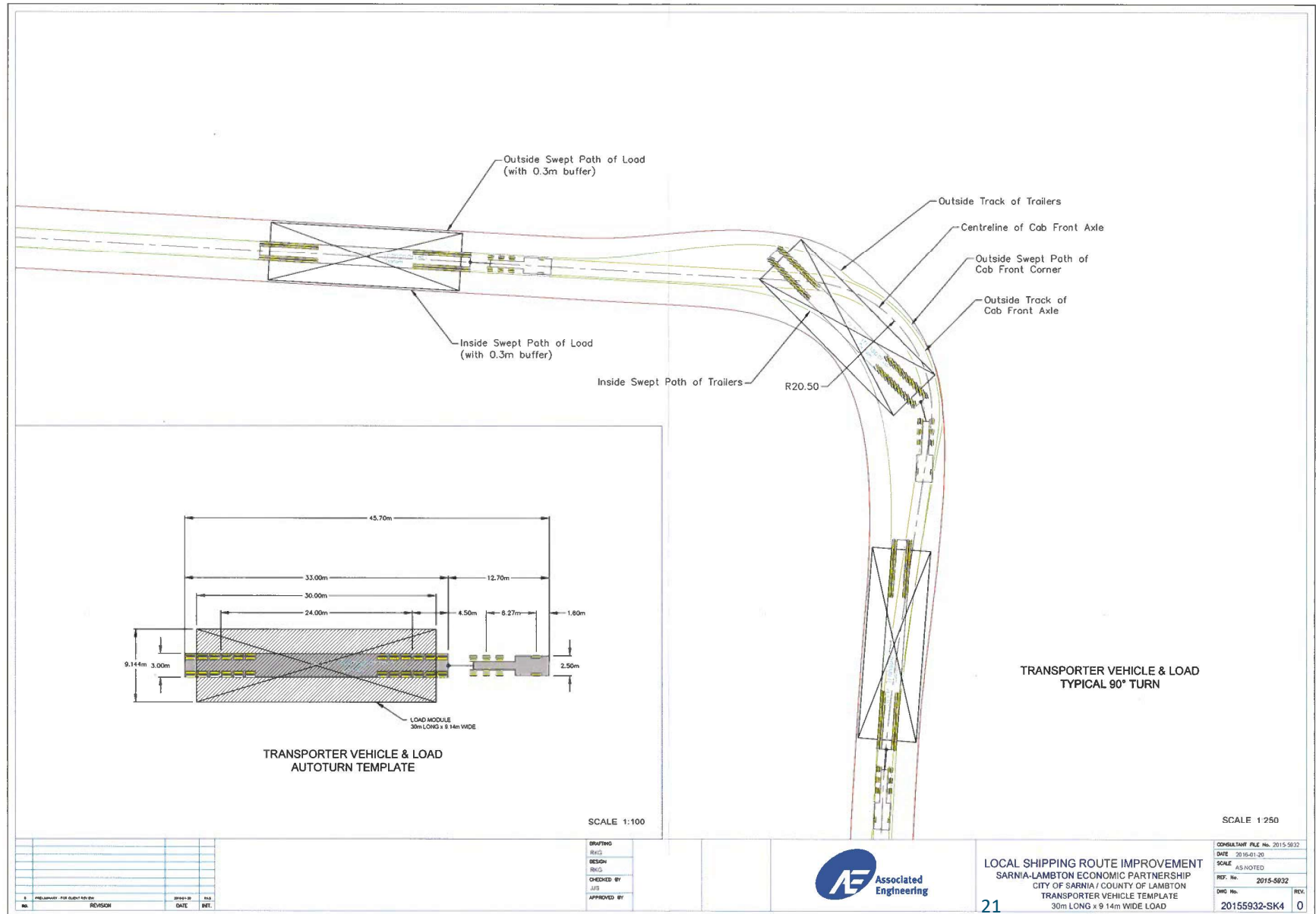
## Disadvantages

- Moderately higher construction cost;
- Requires property; and
- Drivers are less familiar with roundabouts.

- Recommended to be carried forward to Preliminary Design.



# Over Sized Load Transporter Vehicle Template 30 m Long x 9.14 m Wide Load







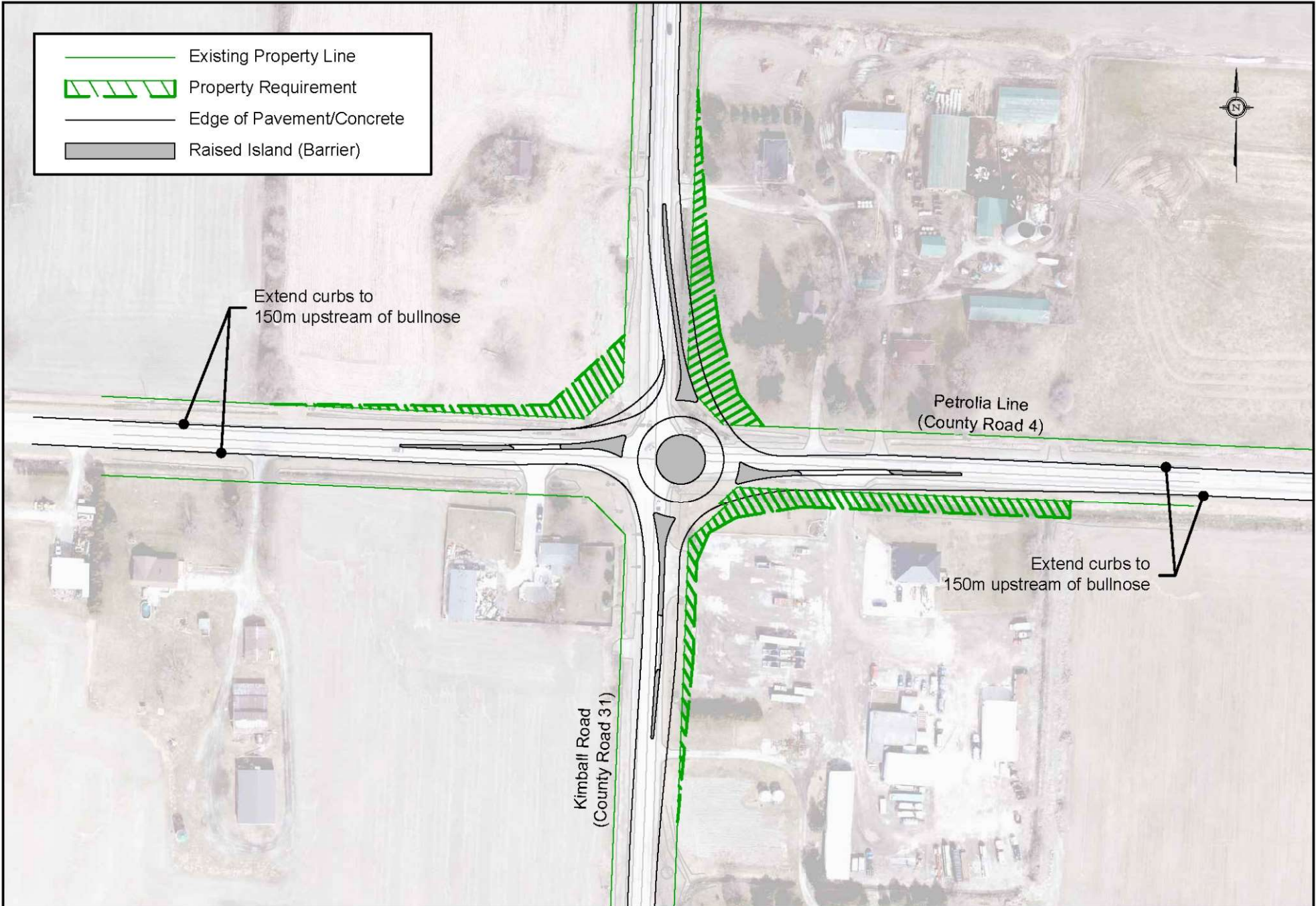
# Preliminary Design Alternatives

Two (2) Preliminary Design Alternatives are being considered for the Preferred Planning Solution:

- Alternative 1: Conventional 4-legged roundabout control.
- Alternative 2: Modified 4-legged roundabout control with splitter island bulb-outs (chicanes).

The alternatives are shown in the following exhibits.

-  Existing Property Line
-  Property Requirement
-  Edge of Pavement/Concrete
-  Raised Island (Barrier)




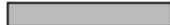


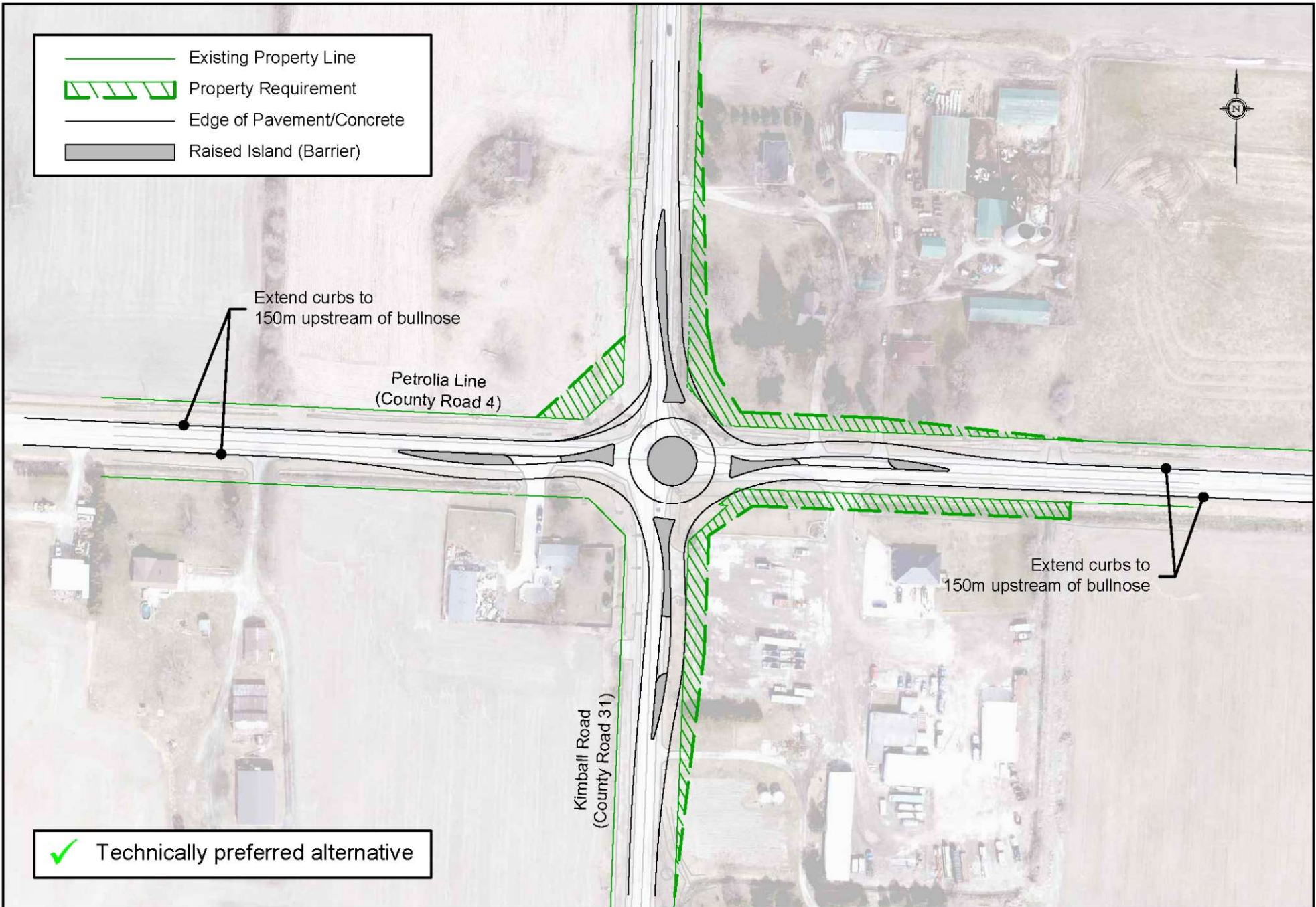
**BTE 23-018**  
 2023-06-20  
 Scale 1:2000


**Lambton County CR4 / CR31 Intersection**  
 Roundabout Design Alternative 1





-  Existing Property Line
-  Property Requirement
-  Edge of Pavement/Concrete
-  Raised Island (Barrier)



 Technically preferred alternative

**BTE 23-018**  
 2023-06-20  
 Scale 1:2000

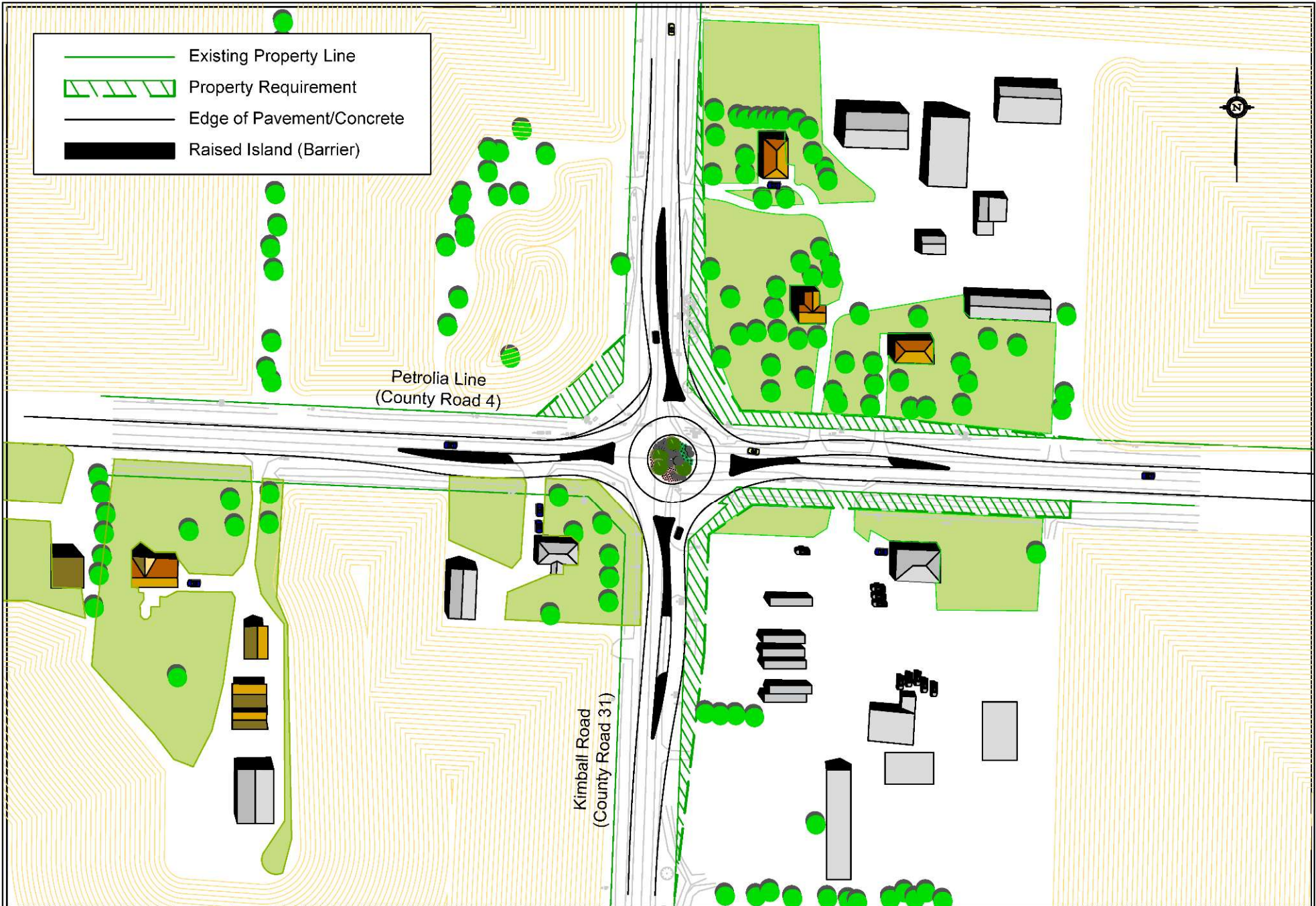
**Lambton County CR4 / CR31 Intersection**  
 Roundabout Design Alternative 2



# Evaluation of Preliminary Design Alternatives

The preliminary recommendation is to carry forward Alternative 2 as the Technically Preferred Alternative (TPA). The effects of this TPA include:

- Minor property impacts.
- Controls speeds to approaching the intersection.
- Improves safety.
- Reduced impacts to existing residence in southwest quadrant.



**BTE 23-018**  
 2023-06-20  
 Scale 1:2000

**Lambton County CR4 / CR31 Intersection**  
 Roundabout Design Technically Preferred Alternative



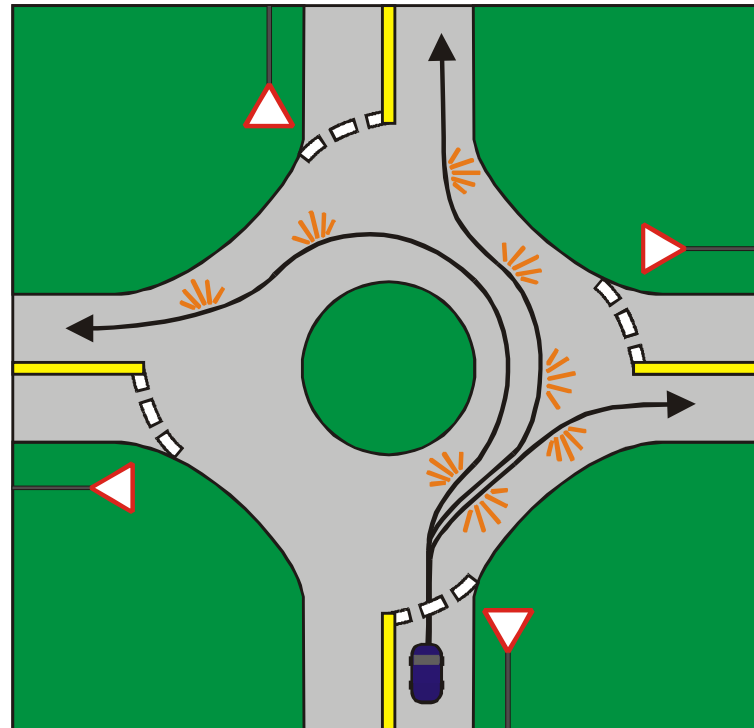
# Vissim Model

# Roundabout Driving Tips

- Slow down as you approach the roundabout.
- View direction signage to plan exit leg of roundabout.
- Watch and yield to pedestrians crossing the roadway when approaching or exiting a roundabout.
- Traffic in the roundabout has the right-of-way (treat roundabout as a one-way street).
- Do not stop within roundabout.
- Always signal your exit.

# Position and Signalling within the Roundabout

1. Drivers must signal to turn right.
2. Drivers must signal to exit the roundabout.
3. Drivers must signal to change lanes and should check their rear-view mirror and blind spot.
4. When travelling past two or more exits on the roundabout, drivers can use a courtesy left-hand signal.



## Effects and Mitigation

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures
Traffic Operations - Delay	Potential for traffic travel delays associated with construction staging.	<ul style="list-style-type: none"> <li>• Provide advance notice of all closures / lane reductions / detours.</li> <li>• Prepare / implement Traffic Management Plan during construction.</li> </ul>
Emergency Services	Potential impact to emergency service routes / access due to closures / lane reductions.	<ul style="list-style-type: none"> <li>• Prepare / implement Traffic Management Plan during construction.</li> <li>• Ensure ongoing and advance communication with emergency service providers during construction.</li> </ul>
Property Impacts	Property acquisition for intersection improvements for the ultimate plan.	<ul style="list-style-type: none"> <li>• Early communication / coordination with owner(s) and tenants to minimize disruption associated with property purchase.</li> <li>• Compensation for lands and decommissioning of wells if required.</li> </ul>
Aesthetics	Roundabouts provide opportunities to enhance aesthetics.	<ul style="list-style-type: none"> <li>• If extent of work at any given site supports it, context sensitive design elements will be considered for inclusion.</li> </ul>
Archaeology	Potential damage to or loss of archaeological artefacts.	<ul style="list-style-type: none"> <li>• If deeply buried archaeological remains are encountered during construction, construction will be stopped in the vicinity of the discovery and the Contractor must notify the Ministry of Citizenship and Multiculturalism.</li> <li>• Indigenous Peoples communities will be contacted during the construction phase.</li> </ul>
Noise (Construction)	Noise from construction equipment and vehicles during construction.	<ul style="list-style-type: none"> <li>• Maintain equipment in good operating condition to prevent unnecessary noise. Restrict idling of equipment to the minimum necessary to perform the work. Contractor will be required to abide by noise control by-laws for day-to-day operations.</li> <li>• Apply for a noise by-law exemption;</li> </ul>
Management of Excess Materials	The project will result in the generation of waste asphalt, granulars, concrete and possibly earth materials.	<ul style="list-style-type: none"> <li>• Excess generation will be minimized through promoting contractor salvage, recycling and re-use in the contract tender documents.</li> </ul>
Species at Risk	Potential disruption to migratory birds, nesting and / or species at risk (SAR).	<ul style="list-style-type: none"> <li>• Conduct site 'sweeps' prior to any tree removals and prior to and during construction.</li> <li>• Clear any vegetation outside of the breeding bird season.</li> <li>• Ensure Contractor's staff are trained to recognize potentially affected species and are required to notify authorities if any are encountered on site.</li> </ul>
Utilities	Potential for impacts to existing utilities.	<ul style="list-style-type: none"> <li>• Ensure advance coordination with utility companies and approval for all utility relocations / protections.</li> </ul>
Vegetation	Removal of various trees and woody vegetation due to clearing for staging areas.	<ul style="list-style-type: none"> <li>• Maintain, where possible, mature tree specimens with a diameter (DBH) greater than 50 cm.</li> </ul>
Lighting	Spill over to houses Headlight glare into residential properties	<ul style="list-style-type: none"> <li>• Use of cut-off lighting standards.</li> <li>• Use of landscaping to reduce effects.</li> </ul>
Drainage	Drainage modifications to roadside ditches	<ul style="list-style-type: none"> <li>• Consideration of piped stormwater system.</li> </ul>

# Next Steps

## Following this meeting we will:

- Review all PCC comments and ideas and prepare a Summary Report.
- Finalize the Recommended Plan.
- Project File 30-day Public Review Period.
- Property Acquisitions.

## How can you remain involved in the Study?

- Request that your name/e-mail be added to the mailing list.
- Provide a comment.
- Contact the Project Managers at any time (contact information is shown below).

Steve Taylor, P.Eng.  
BT Engineering Inc.  
Consultant Project Manager  
Email: [stevenj.taylor@bteng.ca](mailto:stevenj.taylor@bteng.ca)  
Phone: 613-228-4813  
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Phone: 519-845-0809 Ext 5250

**Thank you for your participation.** Your input into this study is valuable and appreciated.

Please submit any questions or comments to the contacts listed above by **July 12, 2023**.

All information is collected in accordance with the *Municipal Freedom of Information and Protection of Privacy Act*.

Personal information you submit will become part of the public record that is available to the general public unless you request that your personal information remain confidential.