



**County of Lambton, County Road 22 (London Line)  
and County Road 8 (Forest Road) Intersection  
Roundabout Design Project**

PUBLIC CONSULTATION CENTRE

NOVEMBER 25, 2024



# Meeting Overview

---



Project  
Purpose



Traffic  
Review



Recommended  
Solution



Design and  
Safety Features



Project  
Examples



Questions

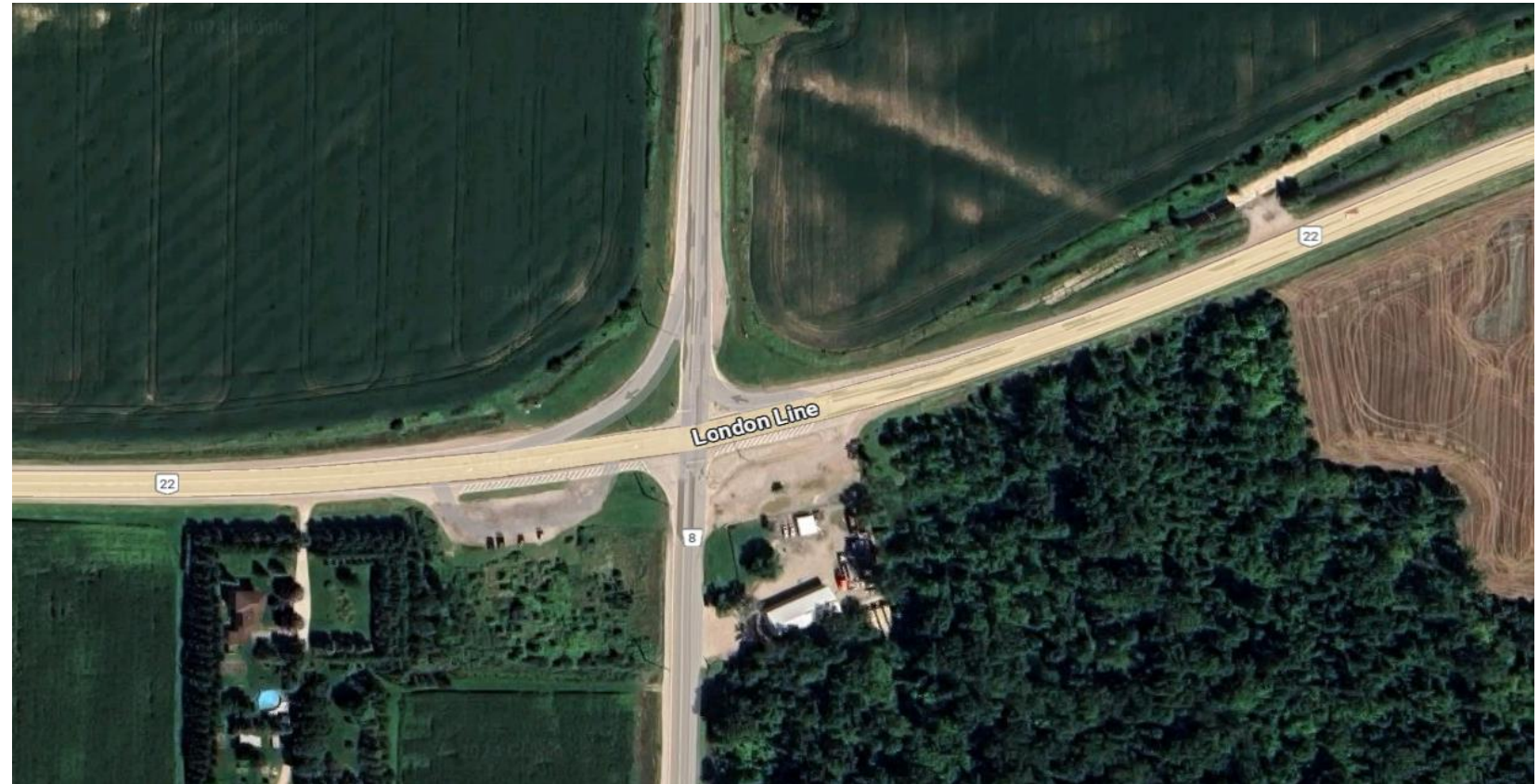
# Project Purpose

---

# Project Background and Purpose

---

- The County of Lambton conducted an Intersection Control Study in 2022. It concluded that a single lane roundabout was the preferred solution at this intersection.
- This treatment was approved by County Council in February of 2023.
- BTE was retained by the County in 2024 to design a single lane roundabout at this location.



# Traffic Review

---

# Existing Roadways and Intersection

---



- **London Line (County Road 22)** and **Forest Road (County Road 8)** are both two-lane rural roads. **Stop control** is in place northbound and southbound on Forest Road.
- The posted speed limit is **90 km/h** on London Line. Forest Road is posted at **80 km/h** north of the intersection and **90 km/h** to the south.
- There are **channelized right-turn lanes** for southbound-to-westbound and westbound-to-northbound traffic, and an auxiliary **left-turn lane** for eastbound traffic.

# Existing Traffic

- The traffic volume demand is shown to the right. The intersection is identified as part of the **Emergency Detour Route for Highway 402**.
- An Intersection Control Study was undertaken in December 2022 for the intersection of **County Road 22 (London Line)** and **County Road 8 (Forest Road)**.

		County Road 8 (Forest Road)				
		(23)	(38)	(6)	↑ <b>N</b>	
		29	42	2		
County Road 22 (London Line)	↔ ↓ ↲				↕ 3 (1)	
					← 33 (26)	
	(46) 19 ↱				↘ 6 (9)	
	(50) 26 →					
	(25) 15 ↴					
					↔ ↑ ↔	
					21 57 3	
					(9) (59) (15)	

Existing Peak Hour Traffic Volumes (2020)  
AM Peak (**PM Peak**)

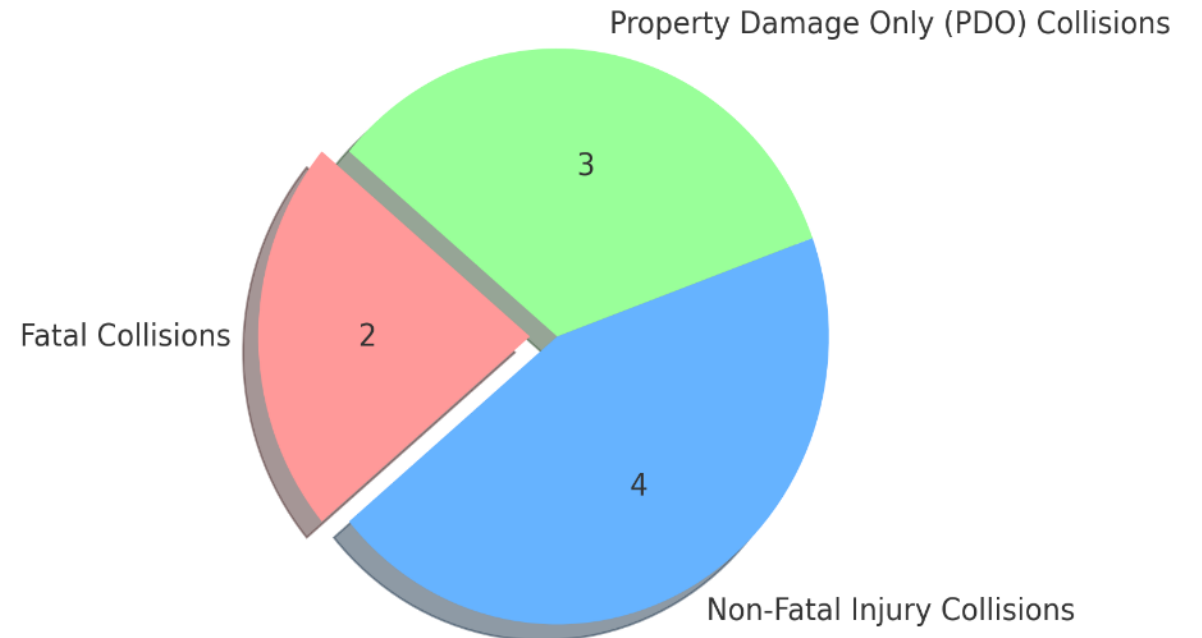
# Road Safety - Vehicle Collision Review

---

## 2015-2022 (7-year History)





- 2 Fatal Collisions
- 4 Injury Collisions
- 3 Property Damage Only Collisions
- **9 collisions** in total
- All 9 collisions from 2015 to mid-2021 were **angle collisions**.
- Failure to either stop or yield the right-of-way on County Road 8 to oncoming traffic on County Road 22 was the main cause.

Injury Type Breakdown (2015-2021)





# Summary of Intersection Control Measures

	Mitigation	Intent	Efficacy
	No Change (Maintain Stop Control on County Road 8)	Continue to warn drivers with rumble strips and flashing beacons.	Has not prevented angle collisions or eliminated drivers failing to stop on County Road 8.
	All-way Stop Control (Not Warranted)	Reduce collisions resulting from drivers failing to stop at County Road 8 and make left turns easier.	Similar issues will occur on County Road 22, with drivers failing to stop. Will not reduce collision severity.
	Traffic Signals (Not Warranted)	Reduce turning movement conflicts in the intersection.	May increase rear-end collisions. Will reduce but not prevent angle collisions.
	 Roundabout	Improve safety and traffic operations (reduce delays).	Due to reduced vehicle speeds on entry and less conflict points, the frequency and likelihood of injury and fatal collisions may be reduced.

# Recommended Solution

---

# Recommended Solution: Single-Lane Roundabout

Example: County Road 28 and County Road 56, Elgin County (east of St. Thomas), ON



## Why a Roundabout?

- Reduced conflict points and collision severity.
- Continuous traffic flow, reduced wait times at minor street and lower vehicle speeds.
- Long-term cost savings due to fewer angle-type collisions and low maintenance requirements (electrical equipment for traffic signals is not required).
- Societal Benefits: reduced likelihood of injuries or fatalities
- Environmental Benefits: reduced idling, fuel consumption, and emissions.

# Design and Safety Features

---

Example: McNeely Avenue and Captain A. Roy Brown Boulevard, Carleton Place, ON



## Design Features:

---

LED lighting (during nighttime and low-light conditions) for enhanced visibility and to provide safe navigation.

Single-lane layout provides a simple and intuitive design.

Directional splitter islands and curb and clear signage for driver guidance.

Aesthetic and prominent centre island décor that can include low-maintenance vegetation.

Example: Limoges Road (County Road 5) at Route 300, Russel Township, United Counties of Prescott and Russell, ON



# Safety Features and Reduced Conflict Points in a Single-Lane Roundabout

## Key Safety Features:

### Yield at Entry:

- Vehicles entering the roundabout yield to circulating traffic, reducing stop-and-go conflicts.

### Splitter Islands:

- Separates entering and exiting traffic, guiding vehicles into appropriate paths.

### Reduced Speeds:

- Entry and circulating speeds are typically between 25 to 40 km/h, lowering collision severity.

### Central Island:

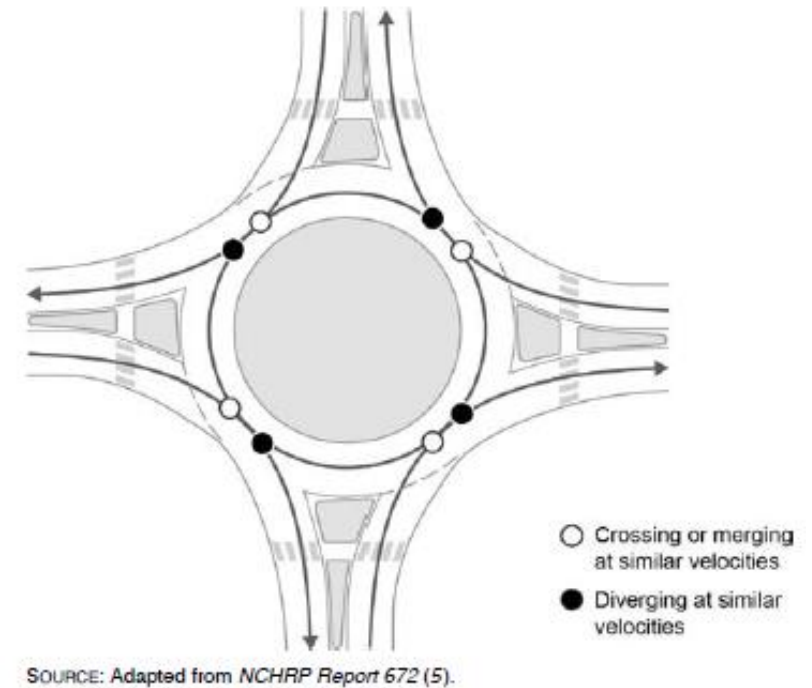
- Guides traffic and promotes counterclockwise movement, preventing head-on or right-angle collisions. Provides additional width for larger vehicles.

### Conflict Points:

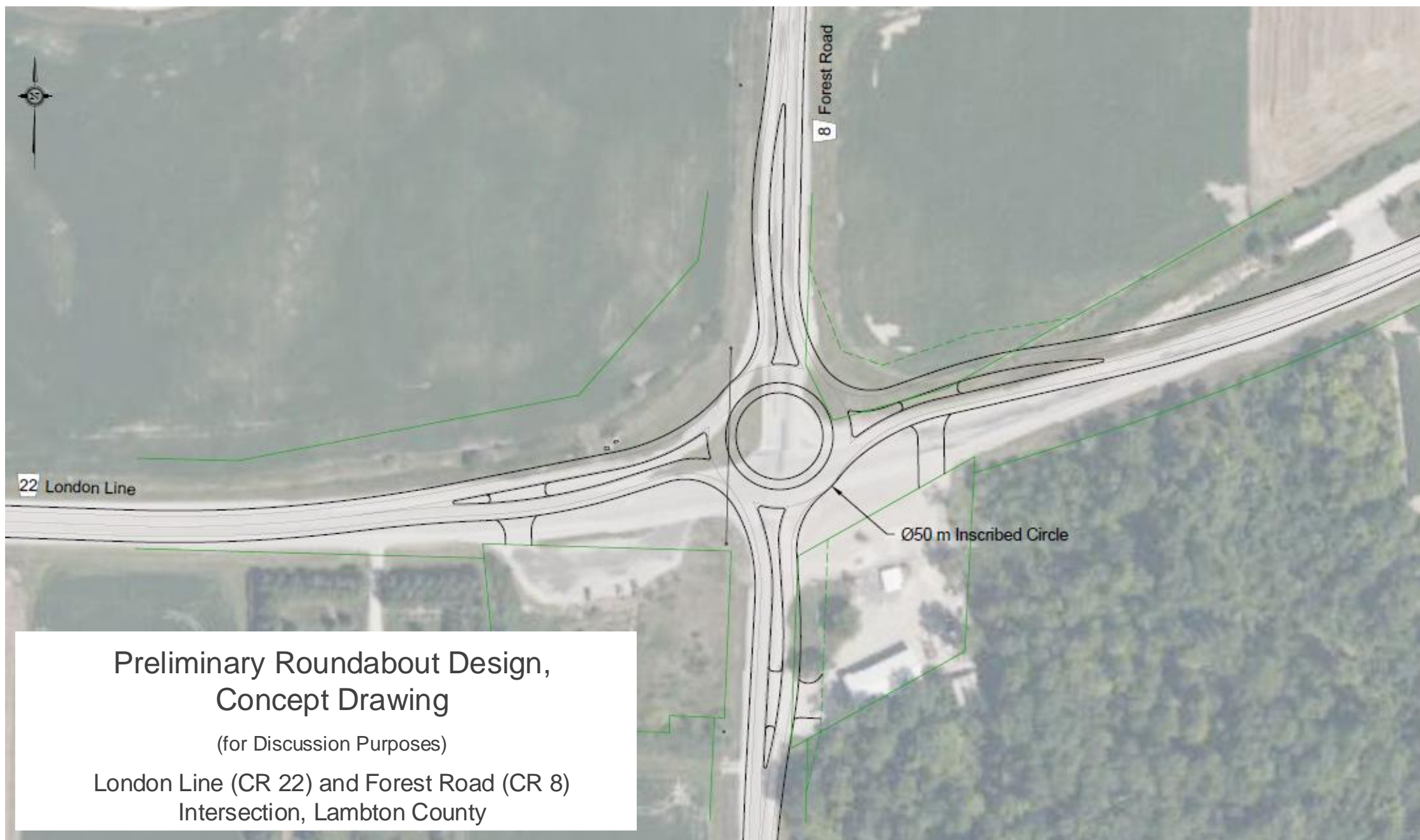
Single-lane roundabouts have **8 conflict points**, compared to 32 in traditional signalized intersections:

- Crossing Conflicts: Reduced by eliminating perpendicular traffic flow.
- Merging/Diverging Conflicts: Managed through controlled yielding and reduced speeds.

Exhibit 7.3. Conflict point diagram for single-lane roundabouts.



LOCATION: OR 126/SW Tom McCall Road, Prineville, Oregon.  
SOURCE: Kittelson & Associates, Inc.



## Preliminary Roundabout Design, Concept Drawing

(for Discussion Purposes)

London Line (CR 22) and Forest Road (CR 8)  
Intersection, Lambton County

# Roundabout Design for Large Farm Equipment



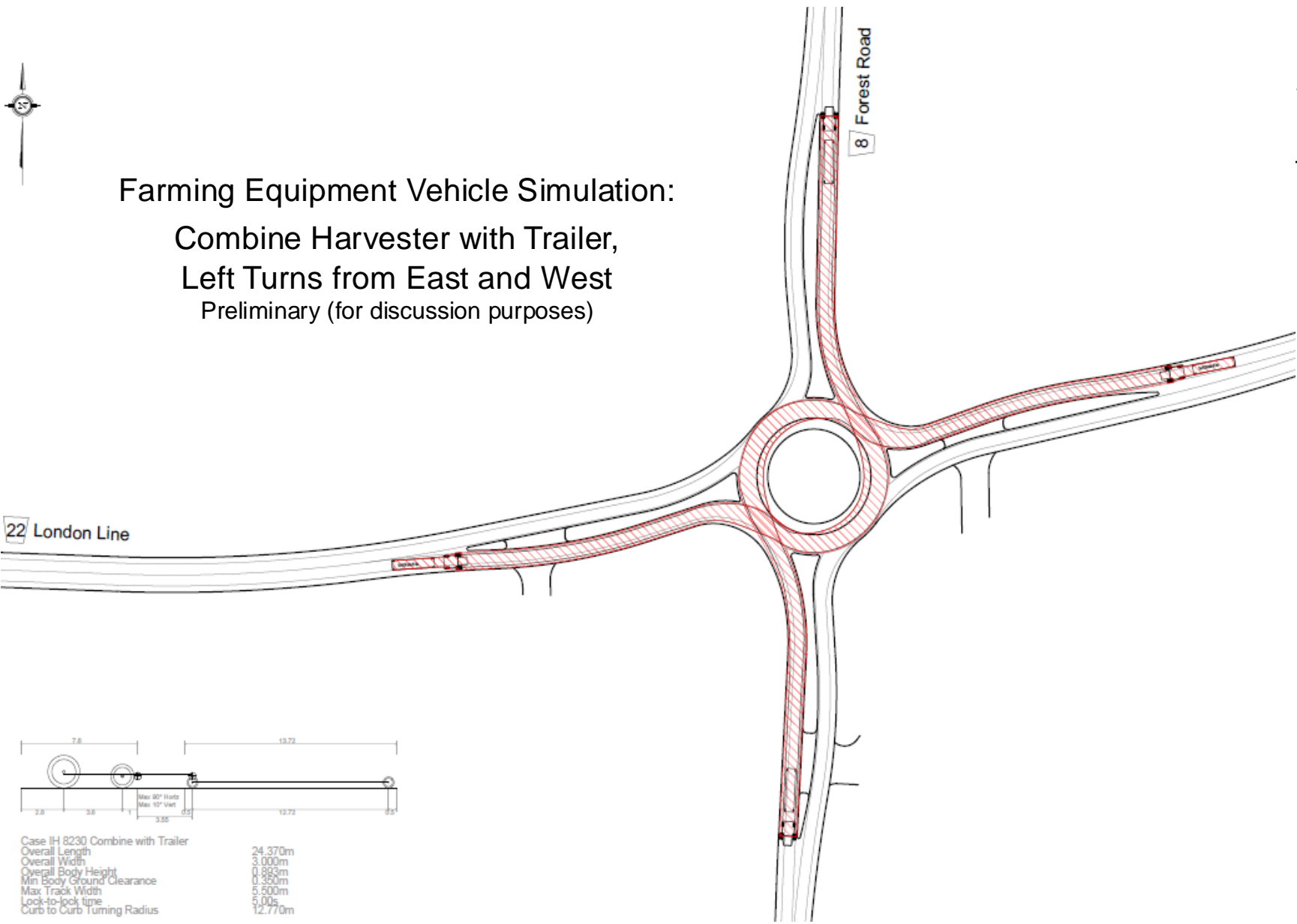
The proposed roundabout at CR 22 and CR 8 is specifically designed to accommodate large farm vehicles, such as combine tractors and other large agricultural equipment.

**Providing Improved Accessibility:** Farmers can transport equipment efficiently, benefiting the local economy.



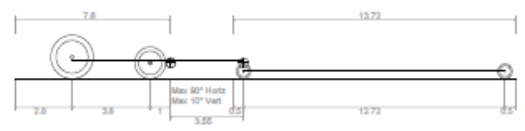


Farming Equipment Vehicle Simulation:  
Combine Harvester with Trailer,  
Left Turns from East and West  
Preliminary (for discussion purposes)



22 London Line

8 Forest Road



Case IH 8230 Combine with Trailer	24.370m
Overall Length	3.000m
Overall Width	0.893m
Overall Body Height	0.350m
Min Body Ground Clearance	5.500m
Max Track Width	5.00s
Lock-to-lock time	12.770m
Curb to Curb Turning Radius	

# Vehicle Turning Paths

## Enhanced Safety and Flow:

Turning paths for farming equipment (a combine harvester with trailer) are simulated and optimized in the design phase to make it safe for all users.

## Design for Large Vehicles:

Travel lanes are specifically designed to accommodate large farm tractors and transport trucks without interrupting flow.

## Mountable Curb Feature:

Semi-mountable curbs allowing increased width for smooth turns for vehicle types.

# Project Examples

---

# New Roundabout: County Road 60 (O'Brien Road) and Wrangler Road/Innovation Drive, Renfrew County, ON



# New Roundabout: Route 300 and Limoges Road (County Road 5), United Counties Prescott and Russell



# New Roundabout: City of Windsor Banwell Drive



# Questions

---