



# Highway 401 Preliminary Design and Environmental Assessment Study from County Road 28 to Hamilton Road, Port Hope, Study #2 GWP 4010-21-00

**Northumberland County Council Meeting  
June 3, 2024**

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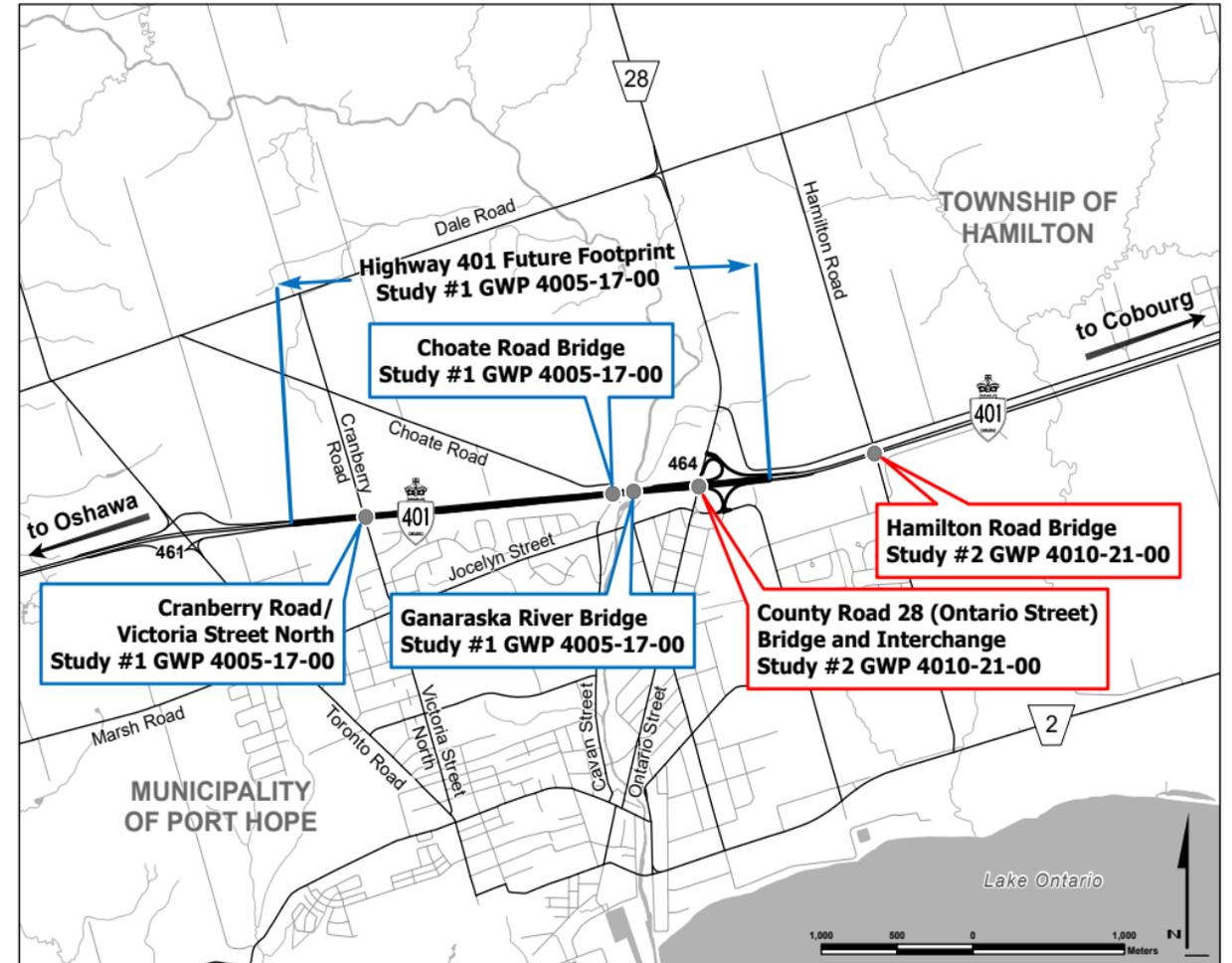
# PROJECT DESCRIPTION AND PURPOSE

The Ministry of Transportation (MTO) has retained the services of Egis and LEA Consulting Ltd. Joint Venture (Egis-LEA Joint Venture) to carry out the Preliminary Design and Class Environmental Assessment (Class EA) for Highway 401 from 500m west of Cranberry Road to 450m east of County Road 28, including the Cranberry Road bridge, Choate Road bridge, Ganaraska River bridge, Hamilton Road bridge and County Road 28 (Ontario Street) Interchange in Port Hope.

The initial study has been divided into two (2) separate Class EA studies:

**STUDY # 1 GWP 4005-17-00** included the structural needs of 3 bridges (Cranberry Road Bridge, Choate Road Bridge and Ganaraska River Bridge) and establishing the eight (8) and ten (10) lane future footprint of Highway 401 from 500m west of Cranberry Road to 450m east of County Road 28 (Ontario Street). The Preliminary Design for the Choate Road and Ganaraska River Bridges was completed in 2022, and a Transportation Environmental Study Report (TESR) was published on March 31<sup>st</sup>, 2022. The project is now in the Detail Design phase.

**STUDY #2 GWP 4010-21-00** includes future operational long-term needs at the County Road 28 (Ontario Street) interchange, and structural needs of 2 bridges (County Road 28 bridge and Hamilton



# CLASS ENVIRONMENTAL ASSESSMENT PROCESS

Study #2 is being carried out in accordance with the approved environmental planning process for Group 'B' projects under the MTO *Class Environmental Assessment (Class EA) for Provincial Transportation Facilities (2000)*.

A **Transportation Environmental Study Report (TESR)** will be prepared to summarize the study process and recommendations. Upon completion, the TESR will be made available for a 30-day public comment period.

Upon completion of the 30-day public comment period and provided there are no outstanding concerns, the TESR will be submitted to the Ministry of Environment, Conservation and Parks (MECP) and the study will be considered to have met the requirements of MTO's Class EA process.



# CONSULTATION AND ENGAGEMENT

Consultation and engagement with external agencies, Indigenous communities, and the public at key milestones throughout the study are essential components of the Class EA process. Stakeholders and the public are encouraged to provide input at any point during this project.

Indigenous Communities that have been consulted with include:

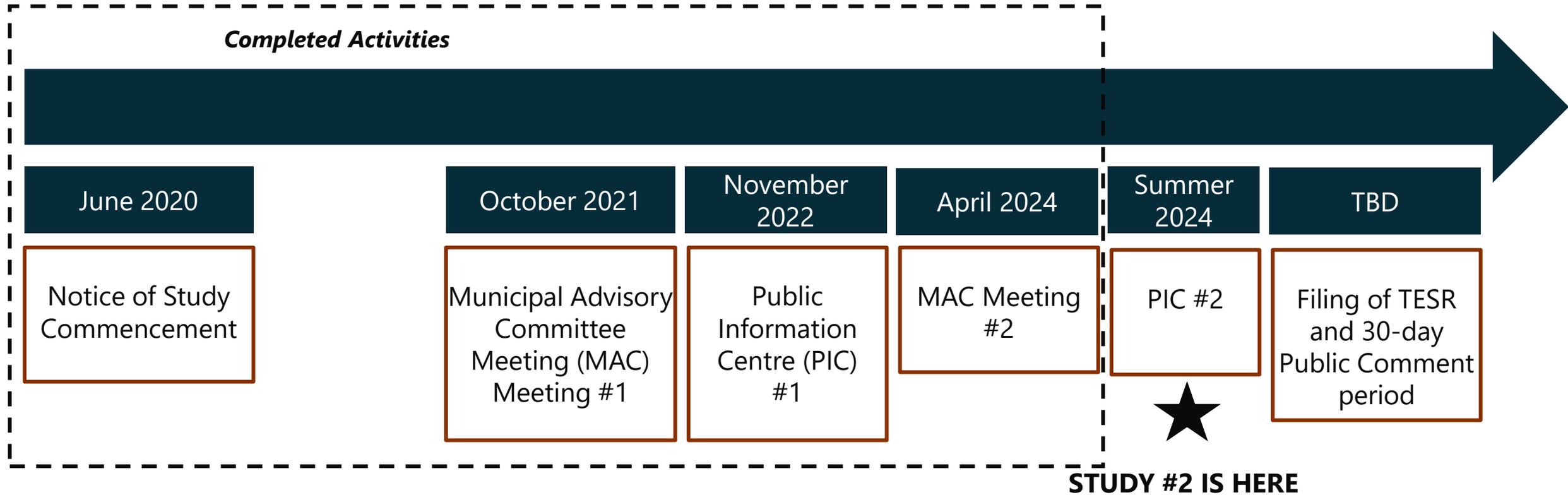
- **Curve Lake First Nation**
- **Alderville First Nation**
- **Mississaugas of Scugog First Nation**
- **Mohawks of the Bay of Quinte First Nation**
- **Beausoleil First Nation**
- **Georgina Island First Nation**
- **Chippewas of Rama First Nation**
- **Métis Nation of Ontario**
- **Williams Treaties First Nations**
- **Hiawatha First Nation**

External Agencies that have been consulted with include:

- **Ministry of Environment, Conservation and Parks (MECP)**
- **Ministry of Natural Resources and Forestry (MNRF)**
- **Ministry of Tourism, Culture and Sport (MTCS)**
- **Infrastructure Ontario (IO)**
- **Ministry of the Environment and Climate Change (MECC)**
- **Ontario Federation of Agriculture (OFA)**
- **Local Emergency Services (Fire, Paramedic, Police)**
- **Ganaraska Region Conservation Authority (GRCA)**
- **Port Hope Area Initiative (PHAI)**
- **Municipality of Port Hope, Township of Hamilton and County of Northumberland**

# CONSULTATION AND ENGAGEMENT

Consultation and engagement opportunities that are being conducted at key points throughout Study #2 include:



# OVERVIEW OF ENVIRONMENTAL STUDIES

STUDY	DATE
Fisheries Existing Conditions	Complete
Terrestrial Impact Assessment	Complete
Noise Assessment Report	Complete
Erosion and Sediment Overview Risk Assessment Report	Complete
Cultural Heritage Assessment	Complete
Stage 1 Archaeology Assessment	Complete
Contamination Overview Study	Complete

# COUNTY ROAD 28 (ONTARIO STREET) EXISTING ENVIRONMENTAL CONDITIONS

## Social and Cultural Environment

### Cultural Heritage

- There are built heritage resources and cultural heritage landscapes due to historical farming activities north of Highway 401

### Archaeology

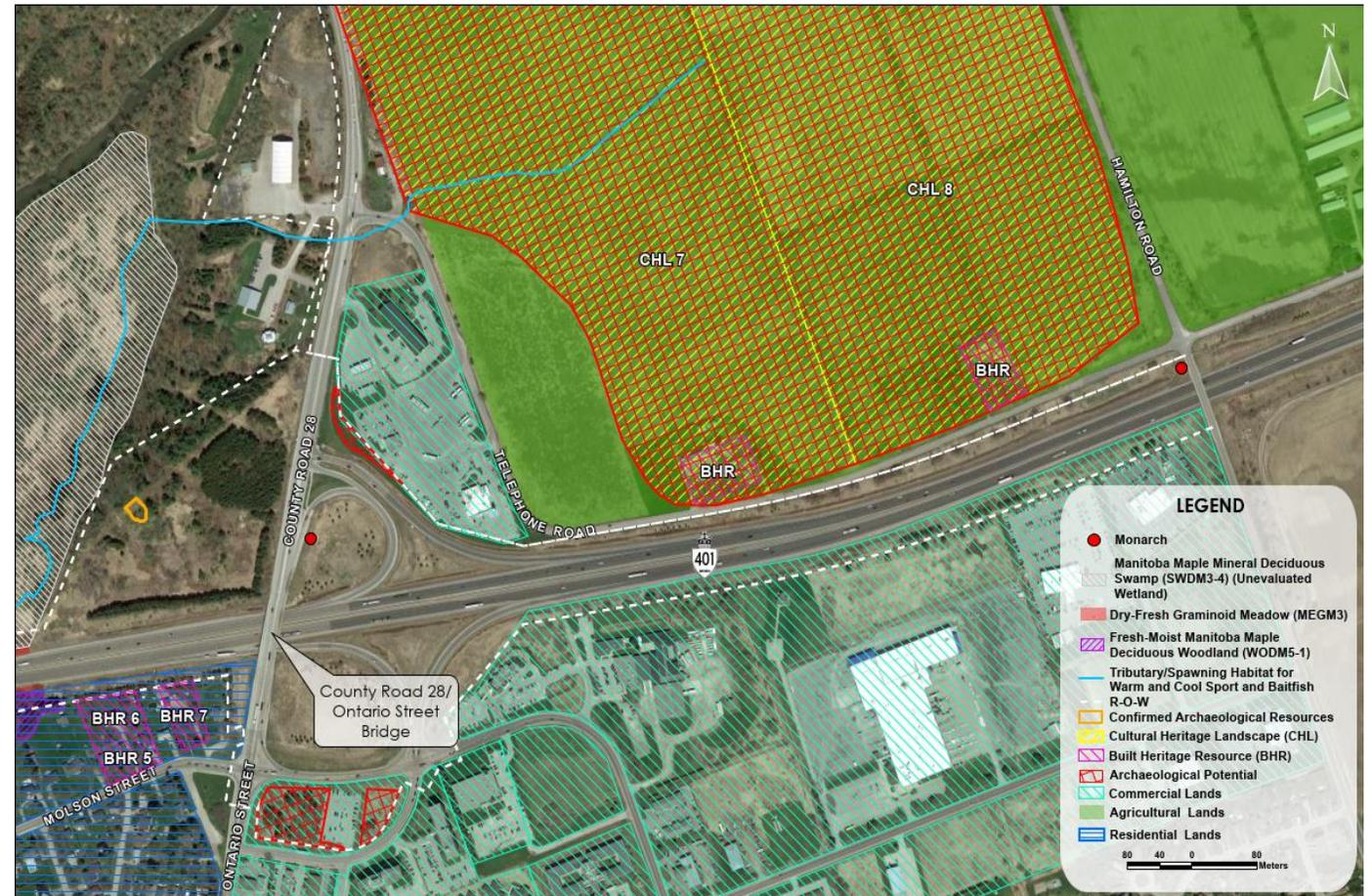
- Lands predominantly in the northwest quadrant contain archaeological resources, including Indigenous artifacts
- Stage 1 Archaeological Assessment complete, Stage 2 Archaeological Assessment to be completed.

### Land Use

- This area is predominantly used for commercial purposes
- Agricultural lands are located north of Highway 401
- Residential lands in the southwest quadrant
- Ganaraska Region Conservation Area (GRCA) in the northwest quadrant

## Natural Environment

- Channel that drains into the tributary of the Ganaraska River in NW quadrant.
- No significant Fish Habitat



# HAMILTON ROAD BRIDGE EXISTING ENVIRONMENTAL CONDITIONS

## Social and Cultural Environment

### Cultural Heritage

- There are built heritage resources and cultural heritage landscapes due to historical farming activities north of Highway 401.

### Archaeology

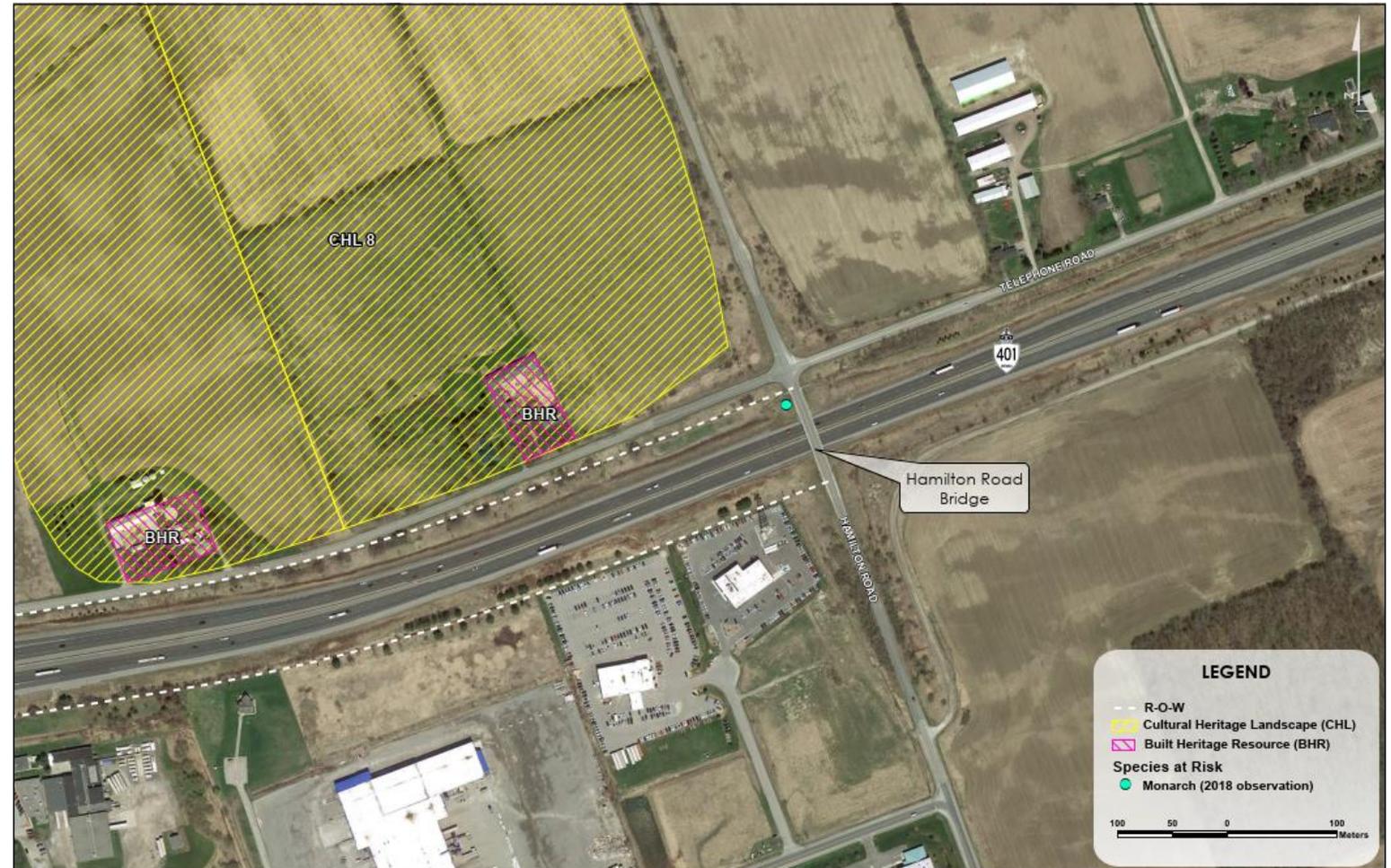
- Stage 1 Archaeological investigations are complete. No further archaeological assessment required.

### Land Use

- This area is predominantly used for agricultural purposes
- Commercial lands (car dealerships) are located in the southwest quadrant

### Natural Environment

- No watercourses in proximity to the bridge



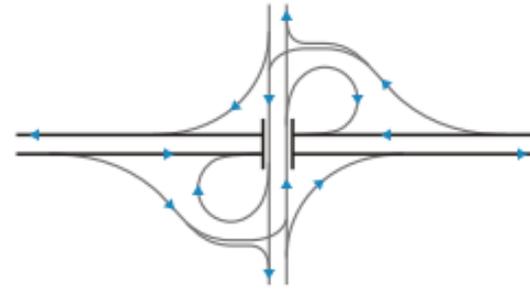
# RECOMMENDED PLAN

# TYPICAL INTERCHANGE CONFIGURATIONS

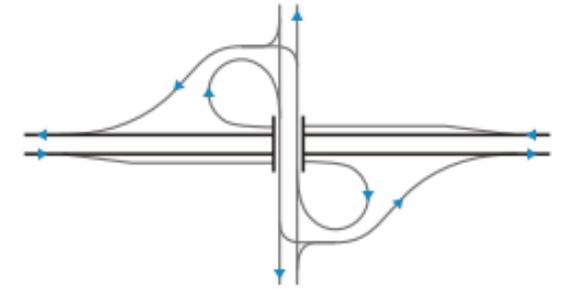
A Partial Cloverleaf (Parclo) interchange is the most common freeway-to-arterial interchange design in Ontario. The letter A designates the ramps meet the freeway before the arterial road crossing, while B designates that two ramps meet the freeway beyond the arterial road. The number designates how many quadrants of the interchange contain ramps. An A type allows for all right-hand turning movements, the B type requires some left-hand turning movements (associated with longer traffic delays).

## Typical Interchange Configurations

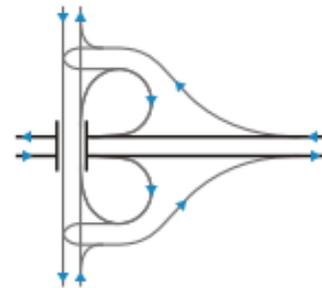
PARCLO A



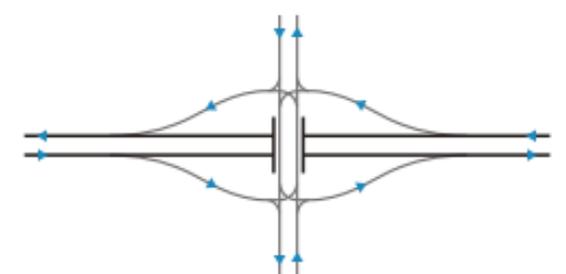
PARCLO B



PARCLO A-B



DIAMOND



# SHORT LIST ALTERNATIVES CARRIED FORWARD

## County Road 28 Interchange Alternatives

Alternative 1 – Parclo A at Hamilton Road.

Alternative 2 – Parclo AB at Hamilton Road.

Alternative 3 – Parclo A at Croft Road

Alternative 4 – Parclo B at Ontario Street

# RECOMMENDED PLAN- PARCLO B AT ONTARIO STREET

## Proposed Works

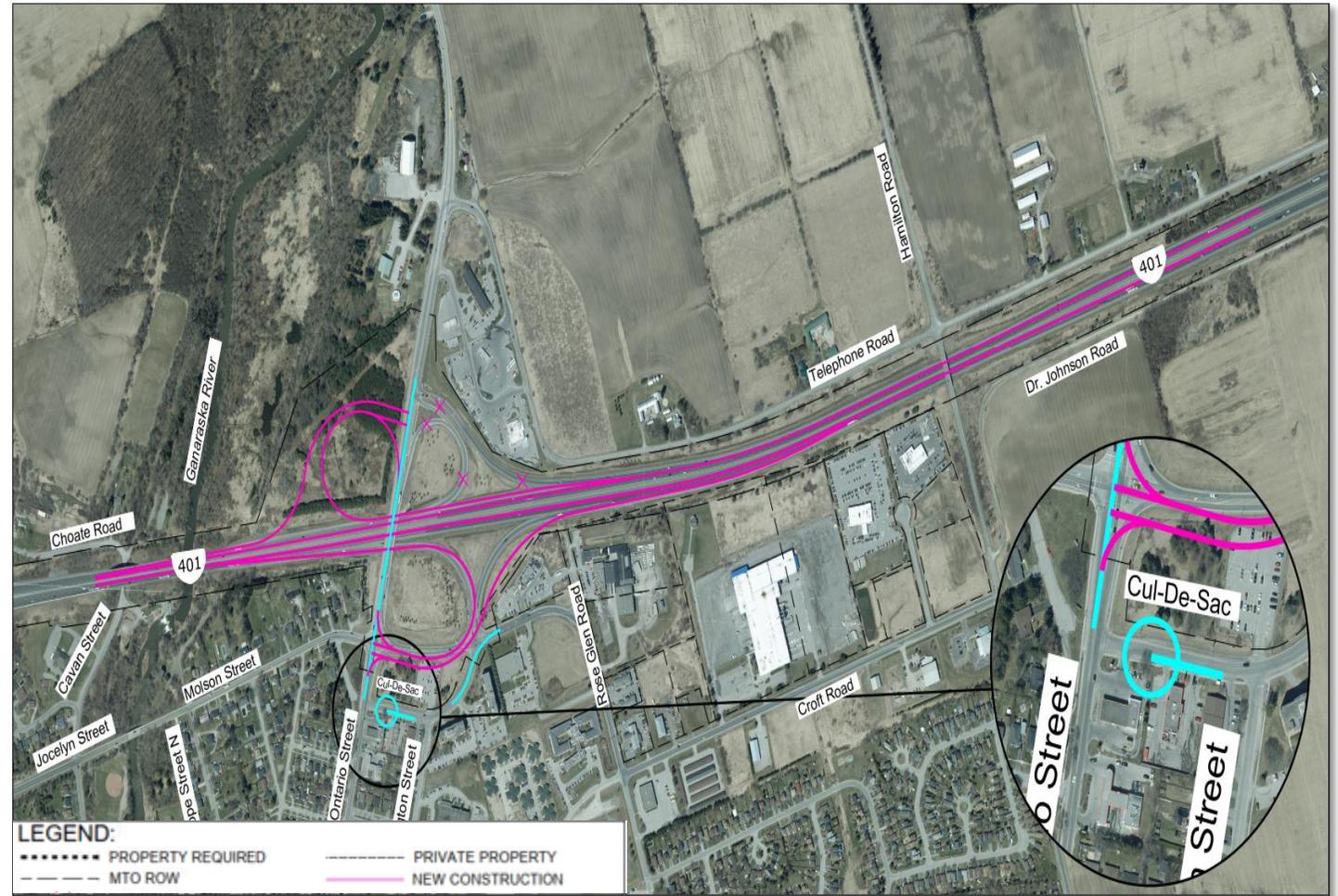
- Re-align Rose Glen Road to connect to Phillips Road
- Cul-de-Sac Phillips Rd

## Advantages

- Ranked #1 in 3
- Ontario Street remains as main route into downtown Port Hope
- Least property impacts
- No impacts to EMS response times
- Lowest construction cost

## Disadvantages

- Parclo B type
- McDonalds loses direct access to interchange



# COUNTY ROAD 28 EVALUATION CRITERIA

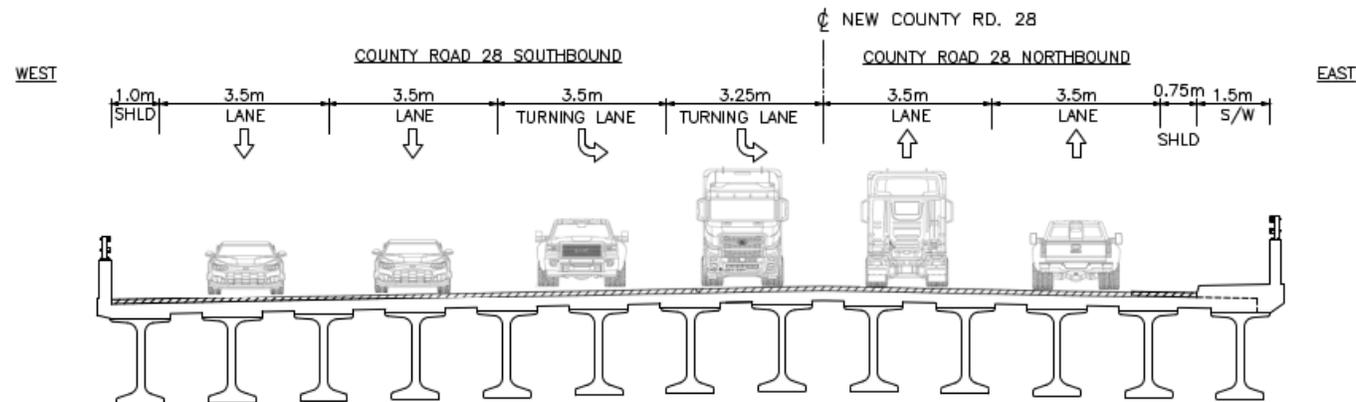
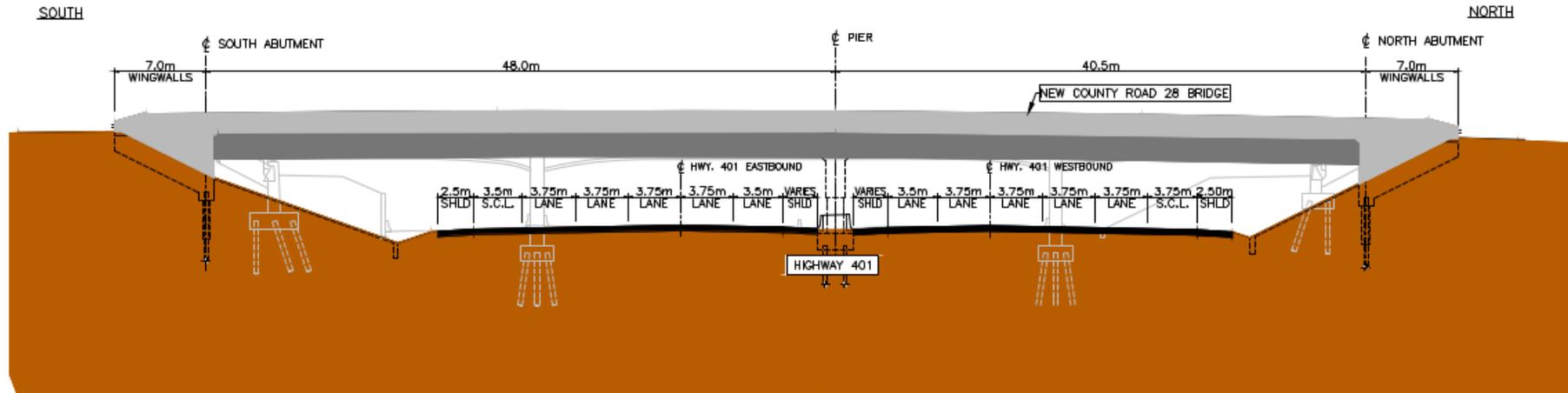
Criteria	Alternative # 1 Parclo A4 at Hamilton Road	Alternative # 2 Parclo AB at Hamilton Road	Alternative # 3 Parclo A4 at Croft Road	Alternative # 4 Parclo B at Ontario Street
<b>Natural Environment</b>	<ul style="list-style-type: none"> <li>× Moderate impact to vegetation/wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>× Moderate impact to vegetation/wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>✓ Smallest impact to vegetation/ wildlife habitat</li> </ul>	<ul style="list-style-type: none"> <li>× Largest impact to vegetation/ wildlife habitat</li> </ul>
<b>Socio-Economic Environment</b>	<ul style="list-style-type: none"> <li>× Moderate permanent property required for agricultural land, residential, and commercial properties</li> <li>× Moderate impacts to Cultural Heritage Landscapes (CHLs)</li> </ul>	<ul style="list-style-type: none"> <li>× Largest permanent agricultural land required</li> <li>× Moderate impacts to CHLs</li> </ul>	<ul style="list-style-type: none"> <li>× Largest permanent commercial property required</li> <li>× Largest impacts to built heritage and CHLs</li> </ul>	<ul style="list-style-type: none"> <li>✓ Least property requirements for agricultural, residential, and commercial properties</li> <li>✓ No impacts to built heritage and CHLs</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>× Moderate length of closure</li> <li>× 1.1km increase in travel distance for local traffic</li> <li>× 1-minute increased travel time to EMS response distances</li> <li>× Minor municipal road upgrades required</li> <li>✓ Best ramp geometry</li> <li>✓ Best Overall Interchange Level of Service (LOS)</li> <li>✓ No conflicts due to turning and weaving</li> </ul>	<ul style="list-style-type: none"> <li>✓ Shortest length of closure</li> <li>× 1.1km increase in travel distance for local traffic</li> <li>× 1-minute increased travel time to EMS response distances</li> <li>× Minor municipal road upgrades required</li> <li>× Fair ramp geometry</li> <li>× Acceptable interchange LOS</li> <li>× One conflict due to turning and weaving</li> </ul>	<ul style="list-style-type: none"> <li>× Moderate length of closure</li> <li>× 1.1km increase in travel distance for local traffic</li> <li>× 1-minute increased travel time to EMS response distances</li> <li>× Major upgrades required to municipal roads</li> <li>✓ Best ramp geometry</li> <li>× Acceptable interchange LOS</li> <li>✓ No conflict due to turning and weaving</li> </ul>	<ul style="list-style-type: none"> <li>× Long term closures required</li> <li>✓ No increase in travel distance for local traffic</li> <li>✓ No increased travel time for emergency response services</li> <li>✓ No upgrades required to municipal road network</li> <li>× Worst ramp geometry</li> <li>× Unacceptable interchange LOS</li> <li>× Multiple conflicts due to turning and weaving</li> </ul>
<b>Constructability</b>	<ul style="list-style-type: none"> <li>× Moderate construction duration</li> <li>× Multiple conflicts with existing utilities</li> <li>✓ Moderate staging complexity</li> </ul>	<ul style="list-style-type: none"> <li>× Moderate construction duration</li> <li>× Multiple conflicts with existing utilities</li> <li>✓ Moderate staging complexity</li> </ul>	<ul style="list-style-type: none"> <li>× Longest construction duration</li> <li>× Conflicts with existing utilities</li> <li>✓ Shortest length of closure</li> </ul>	<ul style="list-style-type: none"> <li>✓ Shortest construction duration</li> <li>✓ Least conflicts with existing utilities</li> <li>× Most complex staging</li> </ul>
<b>Recommendation</b>	<b>Not Recommended</b>	<b>Not Recommended</b>	<b>Not Recommended</b>	<b>Recommended</b>

# RECOMMENDED PLAN – PRELIMINARY DETOUR/STAGING FOR HIGHWAY 401 AT CR28

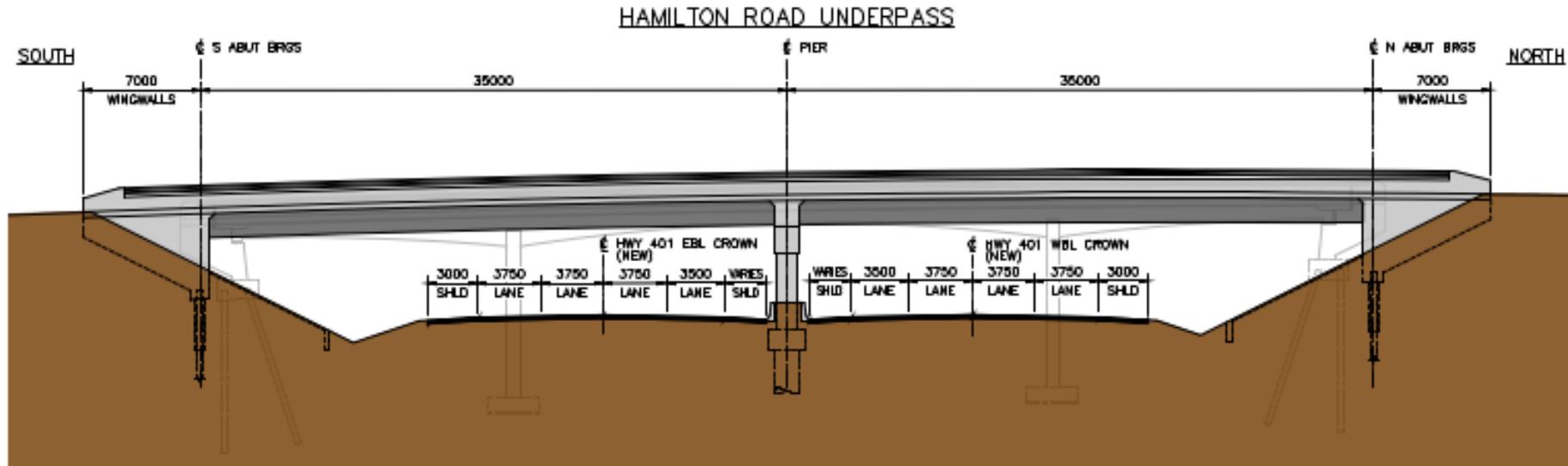
- CR28/Ontario Street Eastbound On and Off Ramp Closures anticipated with traffic detoured to Toronto Rd. and Burnham Street Interchanges.
- Traffic on Ontario Street will be reduced to a single lane in each direction during the bridge replacement.
- Full closure of Highway 401 is anticipated for a short duration during construction. Toronto Road and Burnham Road to Dale Road detour route (key map). The number and duration of the closures will be determined during the Detail Design stage, which is the timing is currently unknown.



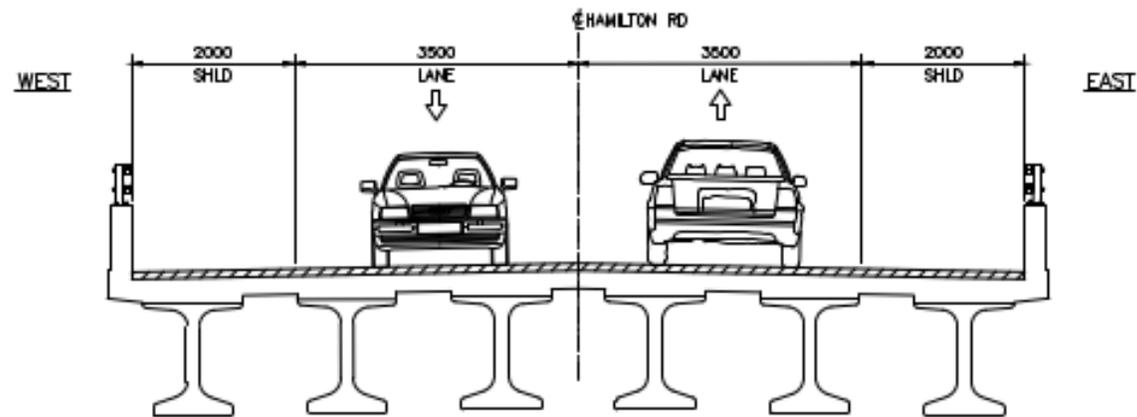
# RECOMMENDED PLAN (COUNTY ROAD 28/ONTARIO STREET)



# RECOMMENDED PLAN (HAMILTON ROAD)



ELEVATION



TYPICAL SECTION

# HAMILTON ROAD EVALUATION CRITERIA

Criteria	Alternative # 1 Replacement on Existing Alignment – Staged Traffic	Alternative # 2 Replacement on Existing Alignment- Full Closure
Natural Environment	✓ No significant impacts to vegetation and wildlife habitat	✓ No significant impacts to vegetation and wildlife habitat
Socio-Economic Environment	✓ Minor property required due to grade raise	✓ Minor property required due to grade raise.
Transportation	✓ Maintains traffic at the structure during construction. Reduced to one lane.	✗ Increased travel time for local users due to detour.
Constructability	<ul style="list-style-type: none"> <li>✗ Longer construction duration</li> <li>✗ Complex staging with multiple set ups and take downs required.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Shorter construction duration</li> <li>✓ Partial accelerated replacement strategies available to reduce the duration of construction.</li> </ul>
Recommendation	Not Recommended	Recommended

# HAMILTON ROAD PRELIMINARY STAGING

## Traffic on Hamilton Road

- Full closure during construction
- Detour: Telephone Road, Rose Glen, Croft Rd

## Telephone Road Intersection Impacts

- Temporary closure for ~1 week, due to grade raise tie-in
- Local traffic detoured on municipal road network

## Highway 401

- Full closure of the highway is anticipated for a short duration during construction. The number and duration of the closures will be determined during the Detail Design stage, the timing of which is currently unknown.



# SCHEDULE

**STUDY #2 GWP 4010-21-00** includes future operational long-term needs at the County Road 28 (Ontario Street) interchange, and structural needs of 2 bridges (County Road 28 bridge and Hamilton Road Bridge).

- PIC 1 (present short list): November 3<sup>rd</sup>, 2022- December 3<sup>rd</sup>, 2022.
- PIC 2 (present Recommended Plan) Summer 2024

## **CONSTRUCTION (SUBJECT TO FUNDINGS AND APPROVALS)**

### **2041 (15 years)**

- Anticipated build-out of MEA
- Bridges require replacement

### **2051 (30 years)**

- Hwy 401 8-laning (without accounting for MEA)
- Interchange reconstruction required



## IF YOU WOULD LIKE MORE INFORMATION, PLEASE CONTACT:

Ms. Laura Donaldson, P.Eng.  
Consultant Project Manager  
Egis

Tel: 343-344-2635

Toll free: 1-888-348-8991

Email: [Laura.Donaldson@egis-group.com](mailto:Laura.Donaldson@egis-group.com)

Mr. Chris Teepell

MTO Project Manager

Ministry of Transportation – Project Delivery East

Phone: 613-583-3109

Email: [Chris.Teepell@ontario.ca](mailto:Chris.Teepell@ontario.ca)

For more information, please visit the project website at:

**[www.Hwy401PortHopeEA.com](http://www.Hwy401PortHopeEA.com)**

For all media inquiries, please contact [mto.media@ontario.ca](mailto:mto.media@ontario.ca).



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