

# Highway 401 Improvements from 1 km East of Highway 16 to 3.3 West of Maitland Road

Township of Augusta, Town of Prescott & Township of Edwardsburg Cardinal Class Environmental Assessment and Preliminary Design Study (GWP 4024-20-00)

Public Information Centre (PIC) #2 (Virtual)

August 3<sup>rd</sup> 2023

[highway401prescottmaitland.ca](http://highway401prescottmaitland.ca)



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### WELCOME!

- Thank you for your participation. Your input is appreciated!
- Other information available on this website includes the following:
  - PIC #2 Video Presentation
  - PDF (downloadable) copy of the PIC #2 Presentation slides
  - PDF (downloadable) copy of the Technically Preferred Plan
  - Summary of Key Facts, Questions & Answers
- We invite you to please review the presentation material and submit any comments using the Comment Sheet provided.



*Study Website*  
**[www.highway401prescottmaitland.ca](http://www.highway401prescottmaitland.ca)**



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Purpose of Public Information Centre (PIC) # 2

The purpose of this Public Information Centre (PIC) is to present and receive feedback on the following:

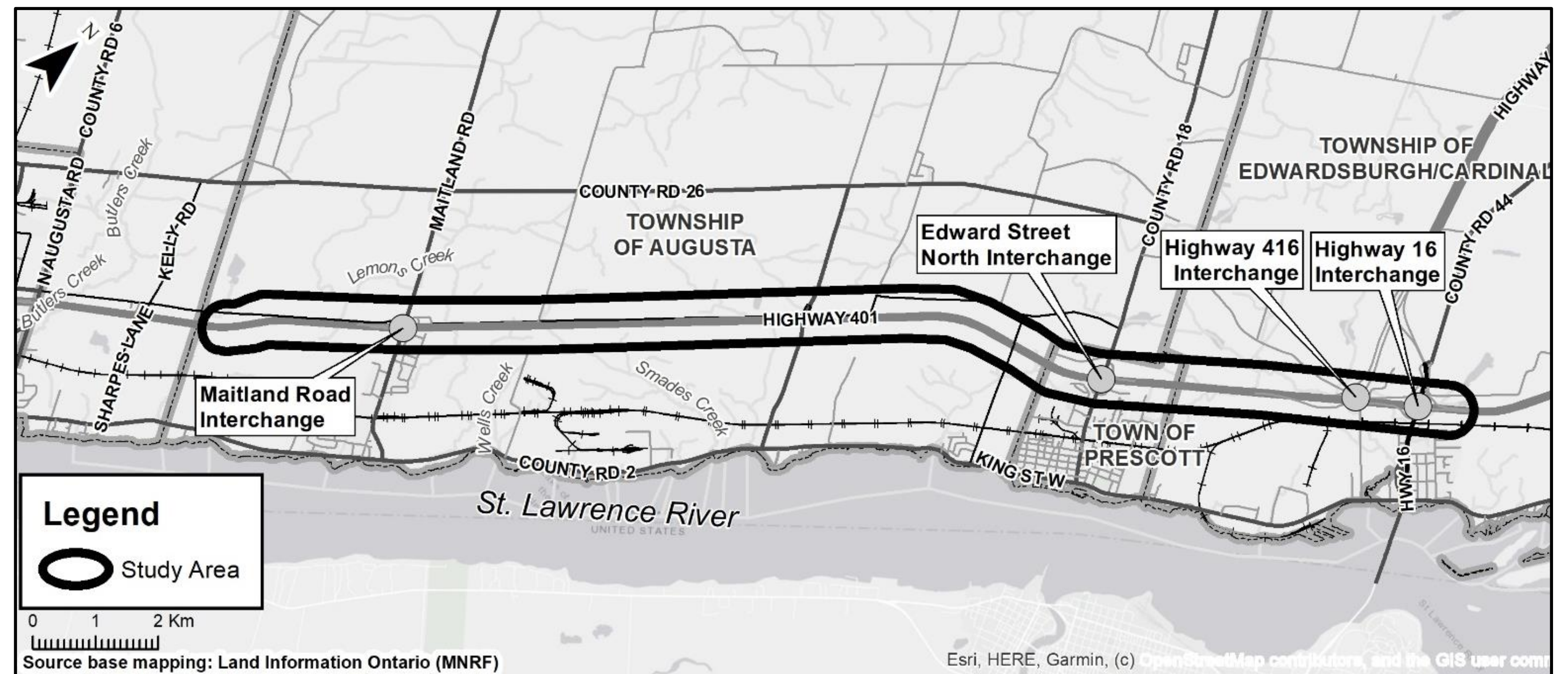
- Study Background, Purpose and Scope
- Summary of Public Information Centre #1 (held December 2021)
- Assessment and Evaluation of the Short List of Design Alternatives
- Preliminary Design of the Technically Preferred Alternative
- Potential Mitigation Strategies to Minimize Environmental / Community Impacts
- Next Steps



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Project Background and Study Area

The Ontario Ministry of Transportation (MTO) has retained AECOM to undertake a Planning, Preliminary Design, and Class Environmental Assessment (Class EA) Study for Highway 401 from 1 km east of Highway 16 to 3.3 km west of Maitland Road for a total length of approximately 20.75 km.



The project is located within the Township of Augusta, Town of Prescott, and the Township of Edwardsburgh Cardinal.

The Study will address current and future transportation needs by developing a plan for the following:

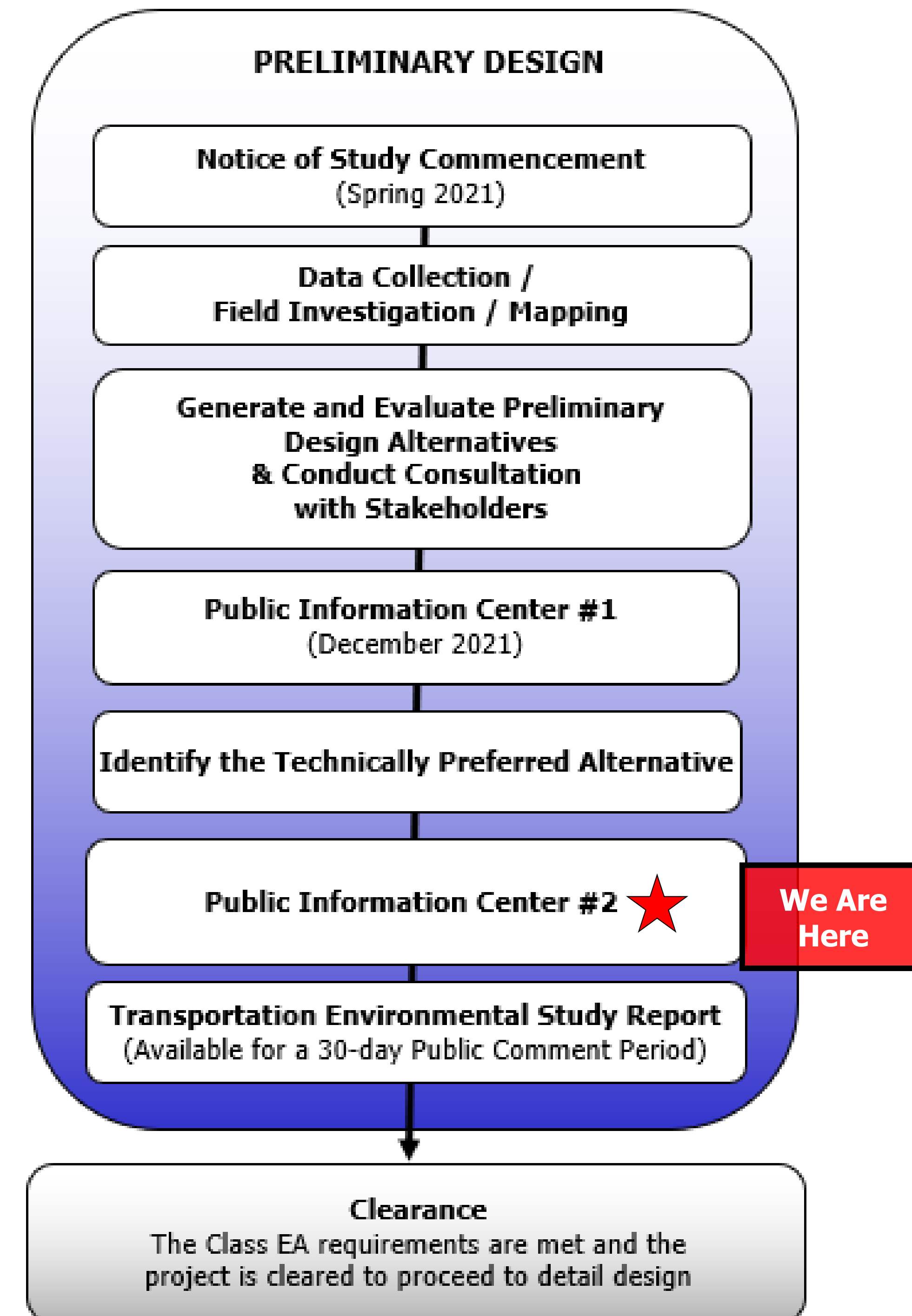
- Rehabilitation / replacement of 14 bridges/culverts;
- Develop a long-term plan for the Maitland Road, Edward Street and Highway 16 interchanges; and
- Establish the future footprint for an interim six lanes and ultimate eight lanes of Highway 401.



# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## MTO Class EA Process

- This Preliminary Design and Class Environmental Assessment study is following the approved planning process for a Group 'B' Project in accordance with the *MTO Class EA for Provincial Transportation Facilities (2000)*.
- Investigations pertaining to the natural, socio-economic, and cultural heritage environments were undertaken to summarize existing conditions and to identify any areas of environmental concern or constraint.
- This information is used to evaluate the alternatives, assess the potential for impact and in the development of appropriate mitigation.
- A Transportation Environmental Study Report (TESR) will be prepared to document the study process and will be placed on the public record for a 30-day comment period.
- Consultation is a key component of the MTO Class EA process and is ongoing throughout this study. Consultation is being completed with Indigenous Communities, agencies, the public, key stakeholders, and also includes meetings with a Municipal Technical Advisory Committee (MTAC) at key milestones during the process.
- To access a copy of the MTO Class EA document please visit: [http://www.mto.gov.on.ca/documents/english/engineering/Class\\_EA\\_2000.pdf](http://www.mto.gov.on.ca/documents/english/engineering/Class_EA_2000.pdf)





## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Online Public Information Centre 1 Summary

- Online Public Information Centre 1 was held between December 8<sup>th</sup>, 2021, and January 21<sup>st</sup>, 2022.
- The purpose of PIC #1 was to present and gather feedback on the following:
  - Project background and the MTO Class EA Process
  - Key objectives of the study, study process, and timing of study activities
  - Challenges and Opportunities, including existing & future traffic projections, structural requirements and the need for highway improvements
  - Long-list Alternatives being considered to address the identified challenges, including alternative interchange configurations at Maitland Road, Edward Street and Highway 16, Highway 401 cross-section requirements, and bridge and culvert rehabilitation and replacement strategies
  - Preliminary criteria to be used to evaluate the alternatives
- **Summary of Feedback**
  - Questions regarding potential impacts to property;
  - Input on adjacent development proposals;
  - Comments regarding design alternatives and interchange locations;
  - Potential impacts to safety and traffic.



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Existing Environmental Conditions

- The Study Area consists of a mix of land uses including Agricultural, Natural areas and open spaces, Residential, Commercial, Industrial, Community services and recreational facilities;
- Environmental features within the Study Area include:
  - Forested habitat, wetlands, woodlands and environmentally significant areas
  - Wildlife and species at risk have the potential or are known to inhabit the Study Area
  - Potential animal movement corridors and pathways
  - Lemons Creek, Bradleys Creek, Smades Creek, Johnson Creek and other tributaries
  - Potential for archaeological and heritage resources



**[CLICK HERE](https://www.highway401prescottmaitland.ca/wp-content/uploads/2021/11/PIC_1_Study-Area-and-Existing-Conditions-Map.pdf) to view the plan presented at PIC #1 illustrating environmental features, as well as existing bridges/culverts and notable geometric conditions and concerns.**

[https://www.highway401prescottmaitland.ca/wp-content/uploads/2021/11/PIC\\_1\\_Study-Area-and-Existing-Conditions-](https://www.highway401prescottmaitland.ca/wp-content/uploads/2021/11/PIC_1_Study-Area-and-Existing-Conditions-Map.pdf)

[Map.pdf](#)



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Environmental Studies

➤ The following environmental studies are being completed to review existing environmental conditions and to identify mitigation measures to minimize and/or address potential impacts associated with the proposed works:

- Fisheries/Fish Habitat Assessment
- Natural/Terrestrial Environment Assessment
- Erosion and Sediment Overview and Risk Assessment
- Cultural Heritage Resource Assessment
- Stage 1 Archaeological Assessment
- Contamination Overview Study
- Groundwater Existing Conditions Study
- Landscape Conceptual Plan
- Noise Impact Assessment
- Air Quality Assessment
- Fluvial Assessment







## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Preliminary Long List Alternatives (from PIC #1)

An initial set of alternatives (the Long List Alternatives) was presented at PIC #1 to implement the improvements along Highway 401, the interchanges and other bridges requiring replacement.

Long List Alternatives were developed for the following components:

#### *Highway 401*

- Widening of Highway 401 to interim 6-lanes and ultimate 8-lanes (Urban and Rural Sections)

#### *Interchanges*

- Maitland Road Interchange – North and South Sides
- Edward Street Interchange – North and South Sides
- Highway 16 Interchange

#### *Other Bridge Replacements*

- Blue Church Road
- Merwin Lane
- CPR Overhead

The evaluation of the Long List Alternatives and identification of the Short List of Alternatives which were subsequently carried forward for further evaluation was presented at PIC #1.

Please refer to the PIC #1 display material available on the project website to review the complete set of Long List Alternatives.



# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Overview of Short List Evaluation

- A weighted-score arithmetic evaluation system was used to compare the Short List of Alternatives.
- This evaluation methodology involved assigning relative weightings to each of the evaluation categories and criteria based on their level of importance.
- Impacts were measured either quantitatively or qualitatively, and then these scores were multiplied by a relative weight for that indicator.
- The weighted scores for each indicator were then summed to arrive at a total score for each alternative.
- The alternative that produced the highest total weighted score is preferred as it results in the best balance of benefits and impacts to the natural, socio-economic and cultural environments, as well as transportation and constructability considerations.

The list to the right identifies the categories and criteria that were used to evaluate the short list of alternatives.



### Transportation/Constructability

- Traffic Operations
- Safety & Geometrics
- Constructability
- Existing utility and servicing infrastructure



### Natural Environment

- Fish and Fish Habitat
- Terrestrial Ecosystems
- Surface Water / Drainage
- Groundwater
- Designated Natural Areas & Wetlands
- Contamination



### Socio-Economic Environment

- Residential Property Impacts
- Commercial Property Impacts
- Agricultural Operations
- Existing & Planned Land Uses
- Noise & Air Quality
- Recreational Trails / Active Transportation Networks
- Climate Change



### Cultural Environment

- Archaeological resources
- Built Heritage and Cultural Heritage Landscapes

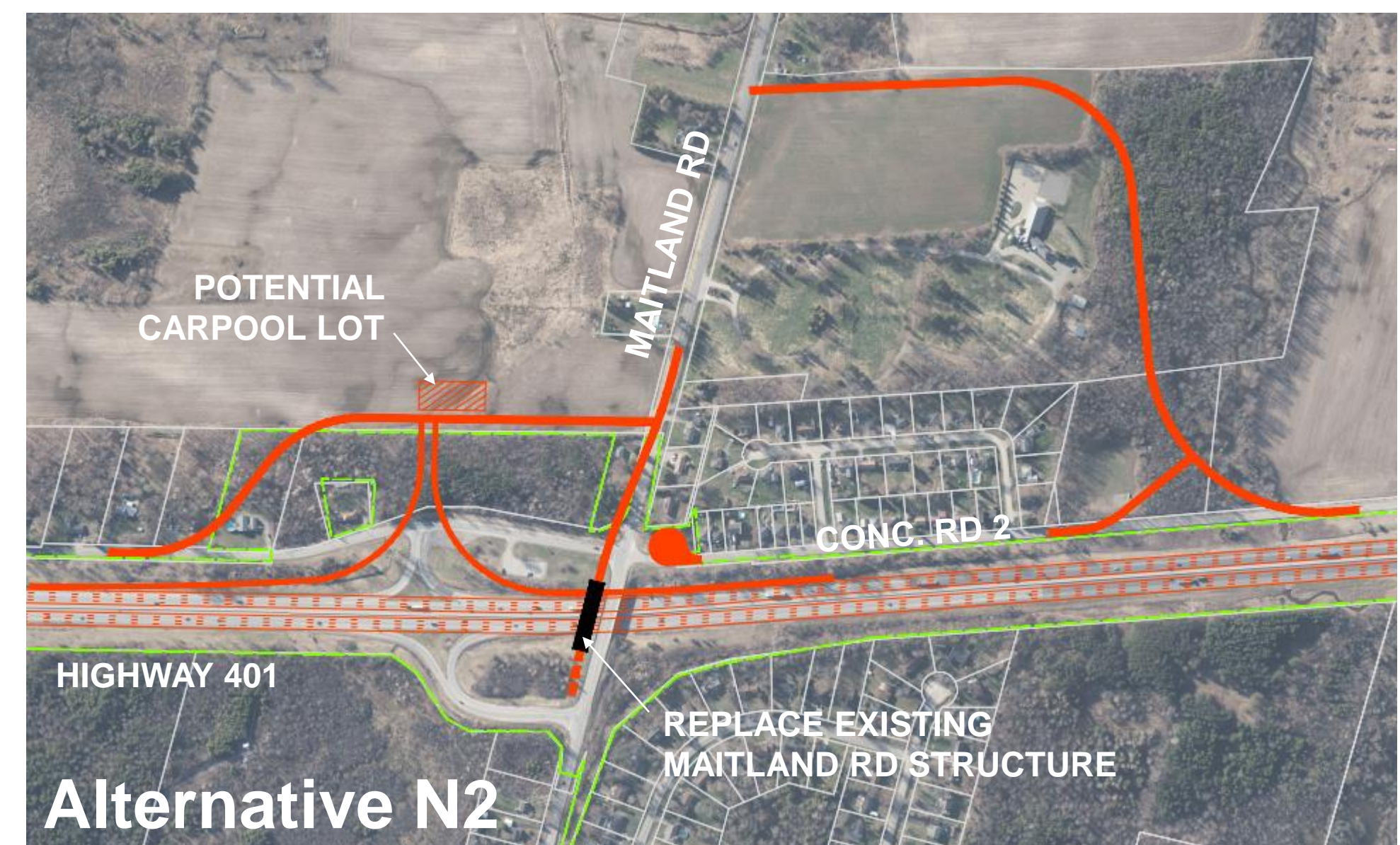
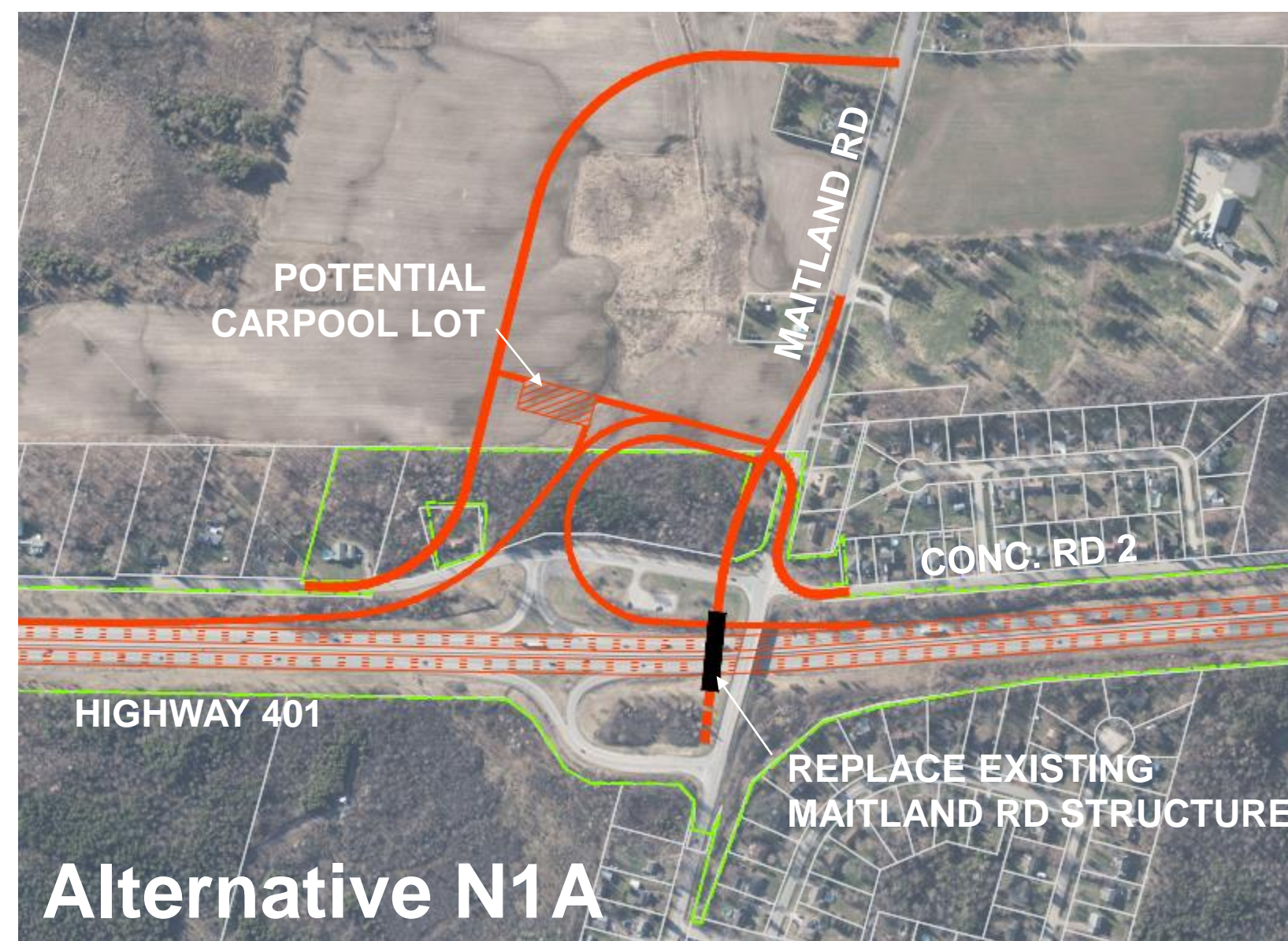


## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Interchange Alternatives - Maitland Road (North Side)

Three north side interchange alternatives for Maitland Road (N1, N2, N3) were carried forward to the detailed evaluation from the screening of long-list alternatives presented at PIC 1.

Following PIC 1, refinements were made to two of the short-listed alternatives, and new alternatives (N1A and N2A) were developed and included as part of the evaluation.





# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Maitland Road Interchange (North Side) – Evaluation Summary

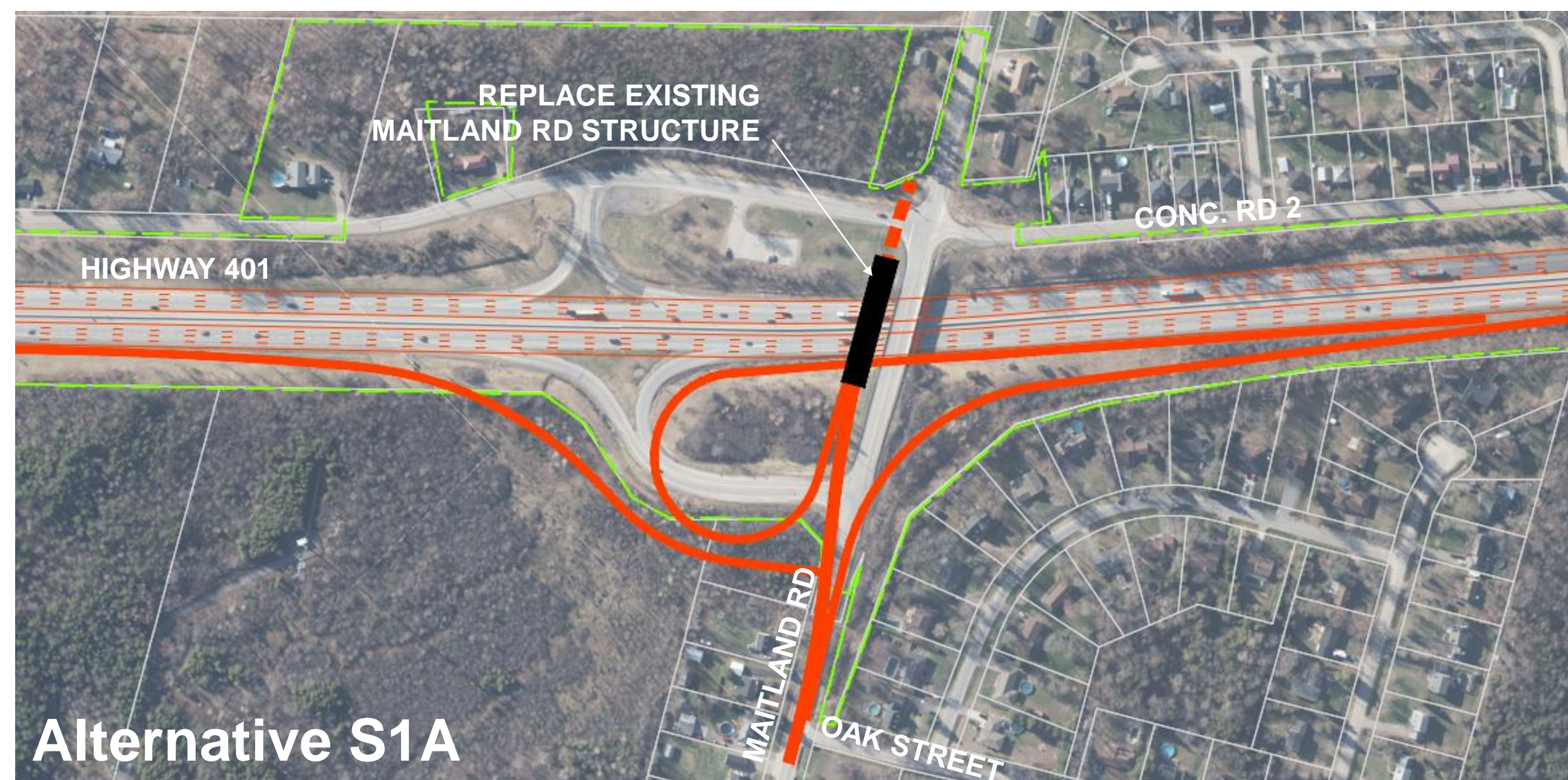
CATEGORY	N1: Parclo B with Con. Rd. 2 Realignment	N1A: Parclo B with Con. Rd. 2 Extension	N2: Buttonhook with Con. Rd. 2 Realignment	N2A: Buttonhook with Con. Rd. 2 Extension	N3: Buttonhook with Connection Road	EVALUATION SUMMARY / NOTABLE TRADE-OFFS									
Transportation/ Constructability						<b>N1 &amp; N2:</b> Conc. Rd. 2 intersection east of Maitland Rd located on a horizontal curve which may lead to sight distance concerns and increased collision risks. <b>N3:</b> Increased risk of wrong-way travel onto Highway 401 due to alignment of new Connection Road, and connection located opposite west ramp terminal. <b>N1A &amp; N2A:</b> Preferred from a Transportation perspective due to improved intersection and access spacing, and slightly better overall traffic operations.									
Natural Environment						<b>N1 &amp; N2:</b> Conc. Rd 2 realignment in NE quadrant results in additional crossings of Lemons Creek, vegetation removal and potential impacts to a Provincially Significant Wetland. <b>N1A, N2A &amp; N3:</b> Similar impacts to natural environment, with <b>N2A</b> having slightly lower impacts making it preferred from a Natural Environment perspective.									
Socio-Economic Environment						<b>N1 &amp; N1A</b> displace 2 residential properties, <b>N2 &amp; N2A</b> displace 4 and <b>N3</b> displaces 5. <b>N1 &amp; N1A</b> have significant impacts to farming operations/agricultural lands in NW quadrant, and <b>N1 &amp; N2</b> have significant impacts to Roselawn Memorial Gardens. <b>N2A</b> has minimal impacts to agricultural lands and the Roselawn Memorial Gardens, and is preferred from a Socio-Economic Environment perspective.									
Cultural Environment						<b>N1 &amp; N2:</b> Conc. Rd. 2 realignment is through the Roselawn Memorial Gardens and Crematorium, while <b>N1A, N2A &amp; N3</b> avoid this property. <b>N2A &amp; N3:</b> Lowest potential for impacts to land with archaeological potential, and are preferred from a Cultural Environment perspective.									
RECOMMENDATION						<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="3">Legend</th> </tr> </thead> <tbody> <tr> <td style="width: 33%;">Most Preferred Alternative</td> <td style="width: 33%;"> </td> <td style="width: 33%;">Least Preferred Alternative</td> </tr> <tr> <td colspan="3"> </td> </tr> </tbody> </table>	Legend			Most Preferred Alternative		Least Preferred Alternative			
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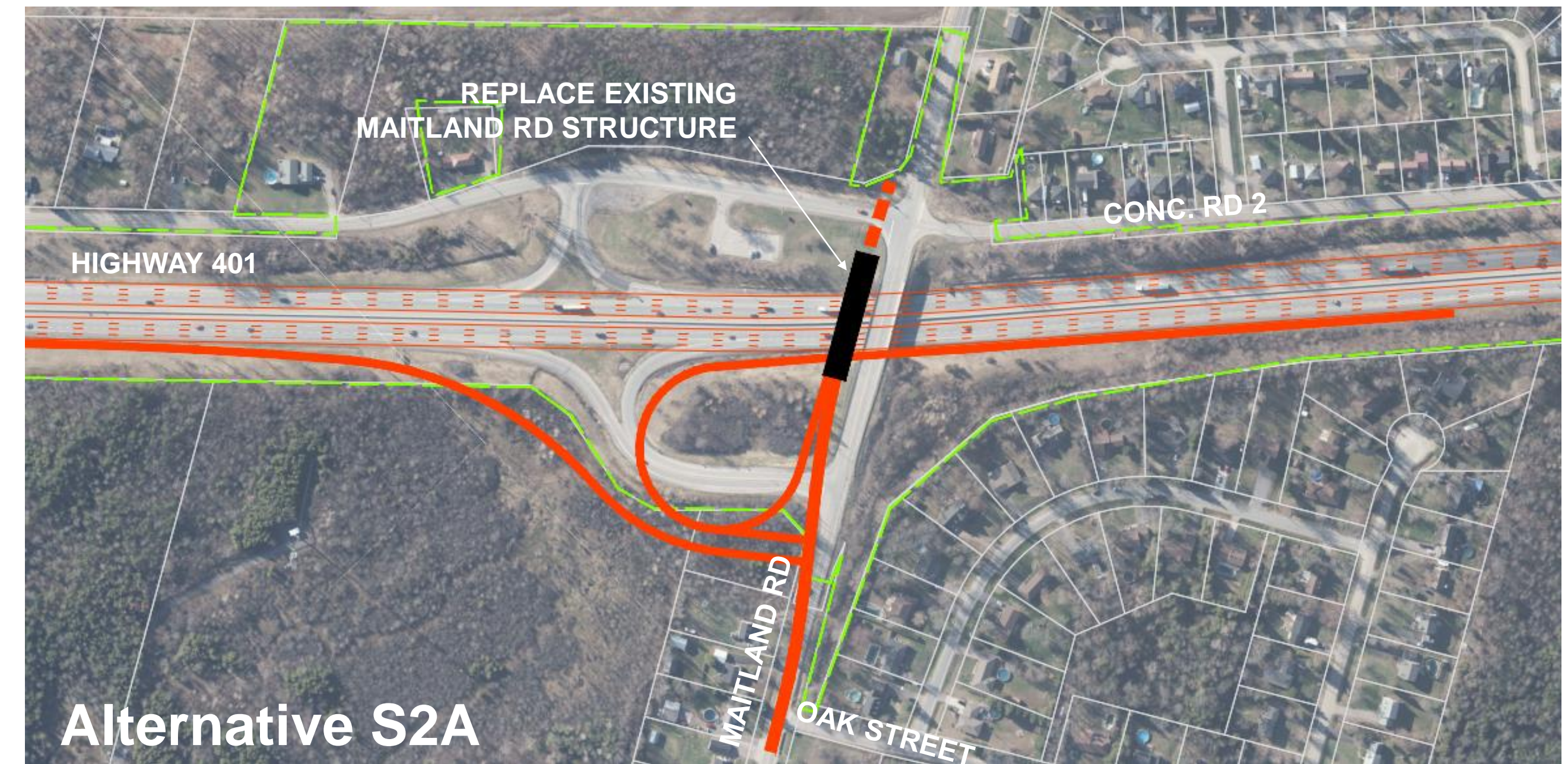
## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Interchange Alternatives - Maitland Road (South Side)

Three south side interchange alternatives for Maitland Road (S1A, S2A and S3) were carried forward to the detailed evaluation from the screening of long-list alternatives presented at PIC 1.



Alternative S1A



Alternative S2A



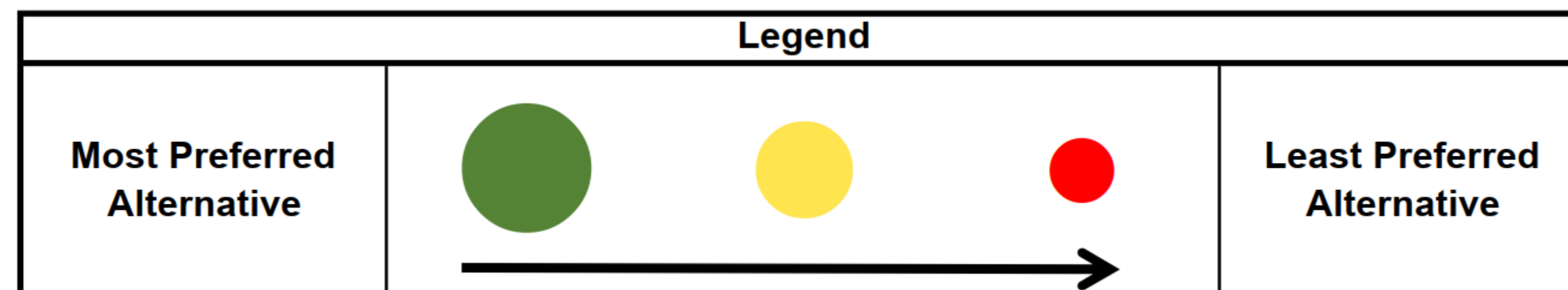
Alternative S3



# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Maitland Road Interchange (South Side) – Evaluation Summary

CATEGORY	S1A: Parclo A4	S2A: Parclo A2	S3: Diamond	EVALUATION SUMMARY / NOTABLE TRADE-OFFS
<b>Transportation/ Constructability</b>				<b>S2A and S3:</b> good overall traffic operations, however left-turn movements are less desirable for sight distance and result in increased collision risk. <b>S1A:</b> Provides directional movements for all maneuvers, eliminating left-turn requirements and the associated risks, and is expected to have the best overall traffic operations at the ramp terminal.
<b>Natural Environment</b>				<b>S1A:</b> Least preferred as it results in slightly greater impacts to fish and fish habitat, potential SAR habitat and vegetation removal, drainage features, and impacts to designated natural areas and wetlands. <b>S2A:</b> Avoids all ramps in the SE quadrant, resulting in the lowest impacts to these features.
<b>Socio-Economic Environment</b>				<b>S3:</b> Three anticipated residential displacements in SE quadrant and encroachment into an additional six residential properties. <b>S1A &amp; S2A:</b> Avoids all residential displacements, however <b>S1A</b> is expected to encroach into six residential properties compared to one residential encroachment with <b>S2A</b> .
<b>Cultural Environment</b>				No alternatives are expected to impact built heritage features or cultural heritage landscapes. <b>S1A:</b> Slightly greater impacts to lands with archaeological potential. <b>S2A &amp; S3</b> are therefore slightly preferred over S1A from a Cultural Environmental perspective.
<b>RECOMMENDATION</b>				





# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Preferred Alternative at Maitland Road Interchange

**The Buttonhook with Concession Road 2 extension (Alternative N2A)** is the technically preferred north side alternative for the Maitland Road Interchange for the following reasons:

- Good overall traffic operations and geometrics;
- Improved intersection and access spacing; and,
- Avoids significant Conc Rd. 2 realignments to the north from other alternatives, resulting in lowest impacts to Natural, Socio-Economic and Cultural Environments.

**The Parclo A2 (Alternative S2A)** is the technically preferred south side alternative for the Maitland Road Interchange for the following reasons:

- Good overall traffic operations at the ramp intersection.
- Avoids new ramps and has lower impacts in the southeast quadrant of the interchange.



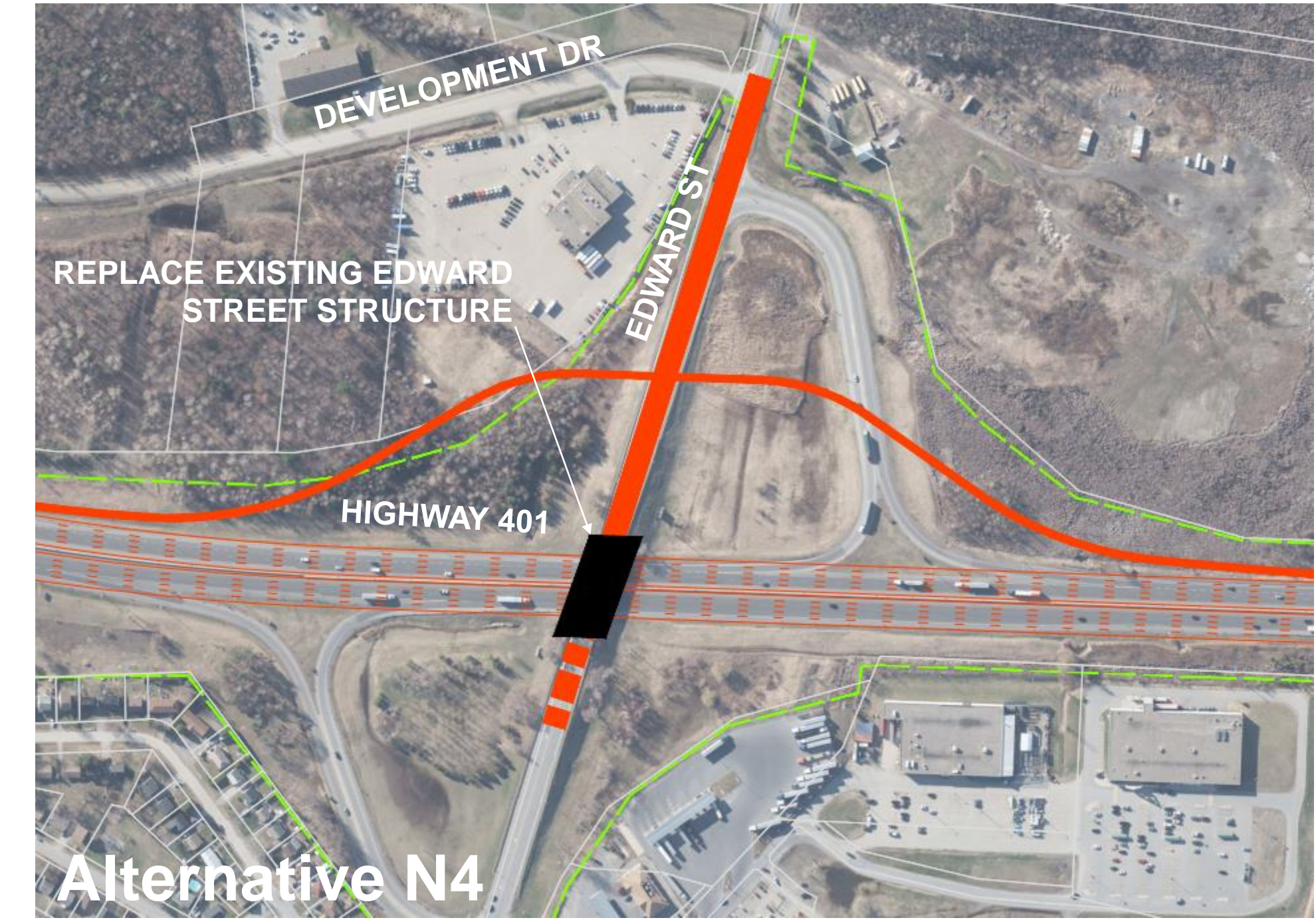
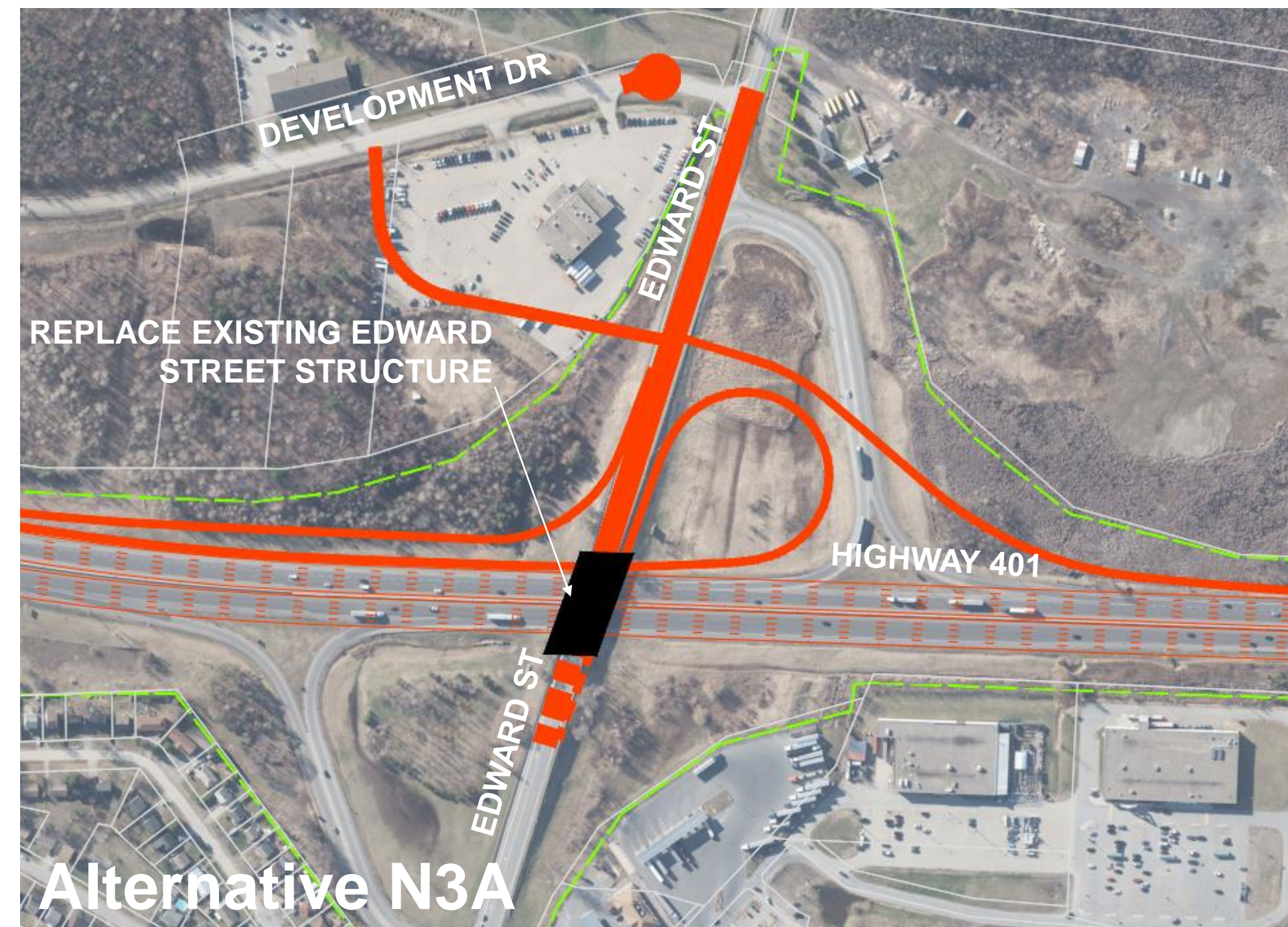
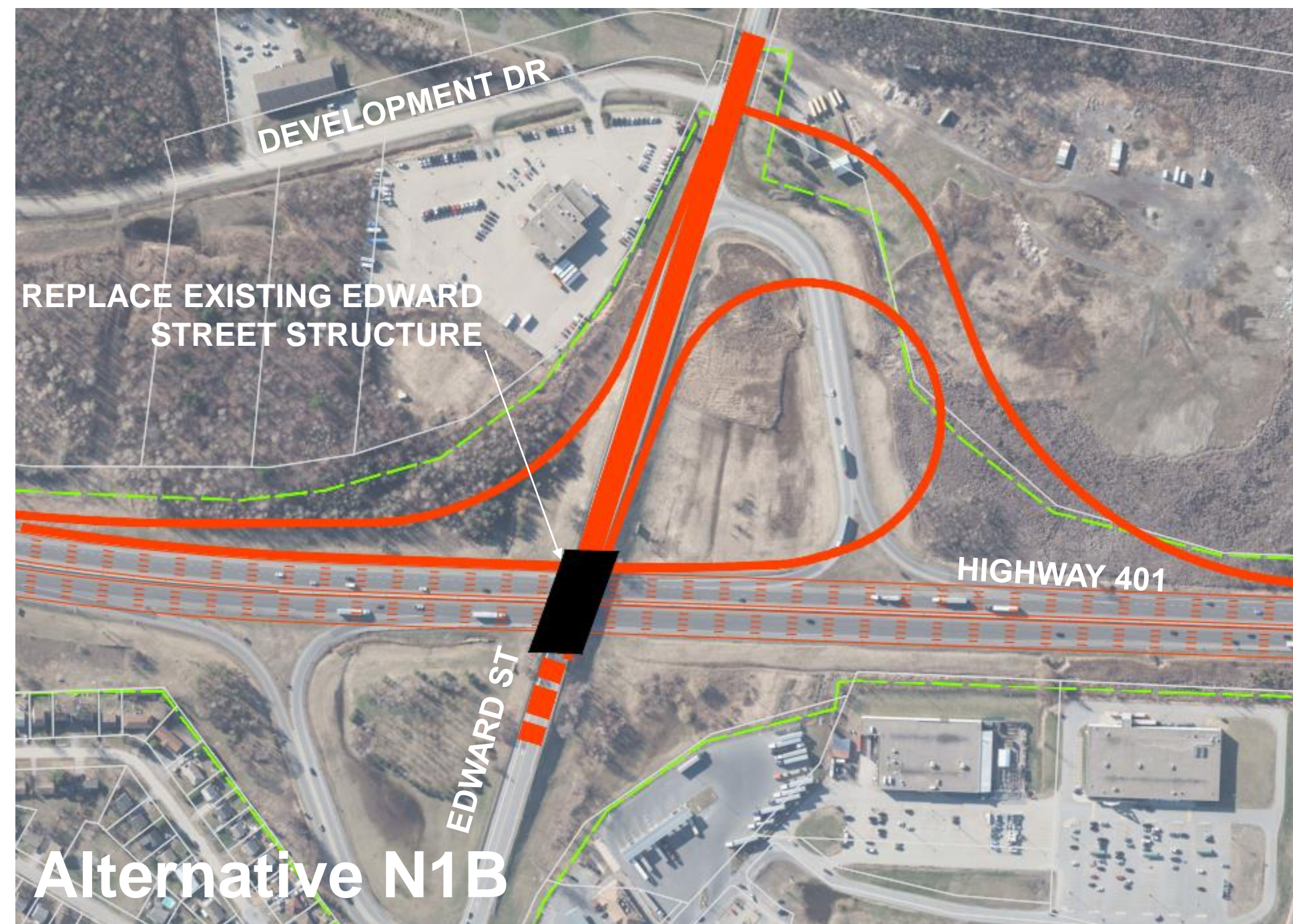
Technically Preferred Maitland Road Interchange Configuration



# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Interchange Alternatives - Edward Street (North Side)

Five north side interchange alternatives for Edward Street (N1B, N3A, N4, N5C and N7A) were carried forward to the detailed evaluation from the screening of long-list alternatives presented at PIC 1.







# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Edward Street Interchange (North Side) – Evaluation Summary

CATEGORY	N1B: Parclo A4 (R=90m)	N3A: Parclo A4 (R=55m) with connection road	N4: Diamond	N5C: Parclo A with Roundabout at Development Drive	N7A: Parclo A with Development Drive Realignment	EVALUATION SUMMARY / NOTABLE TRADE-OFFS
Transportation/ Constructability						<p><b>N4:</b> Long traffic queues and delays at the north ramp terminal, increased collision risk, and weaving concerns.</p> <p><b>N5C:</b> Good overall traffic operations, but roundabout location will impede access to private entrances. Complex construction staging and higher impacts to existing utilities.</p> <p><b>N1B:</b> Good overall operations, geometrics, intersection/access spacing, complexity of construction staging and low impacts to existing utility impacts.</p>
Natural Environment						<p><b>N1B:</b> Lowest potential to encounter contamination, but has the greatest potential impact to vegetation, wildlife and habitat, and SAR.</p> <p><b>N7A:</b> Impacts to multiple properties with medium to high potential for contamination.</p> <p><b>N3A &amp; N5C:</b> Slightly lower potential impacts to these features and therefore preferred from a Natural Environment perspective.</p>
Socio-Economic Environment						<p><b>N7A:</b> One residential displacement &amp; significant impacts to businesses along Edward St.</p> <p><b>N3A:</b> Significant impacts to existing commercial properties.</p> <p><b>N1B, N4 &amp; N5C:</b> Encroaches into commercial property, but no notable impact to operations.</p> <p><b>N4:</b> Lowest impacts to employment lands and planned land use in both NE and NW quadrants, and therefore preferred from a Socio-Economic perspective.</p>
Cultural Environment						<p><b>N7A:</b> Crosses through a portion of 1 Cultural Heritage Landscape. <b>N5C</b> is also expected to impact the edge of this property.</p> <p><b>N1B, N3A &amp; N4</b> therefore preferred from a Cultural Environment perspective.</p>
RECOMMENDATION						

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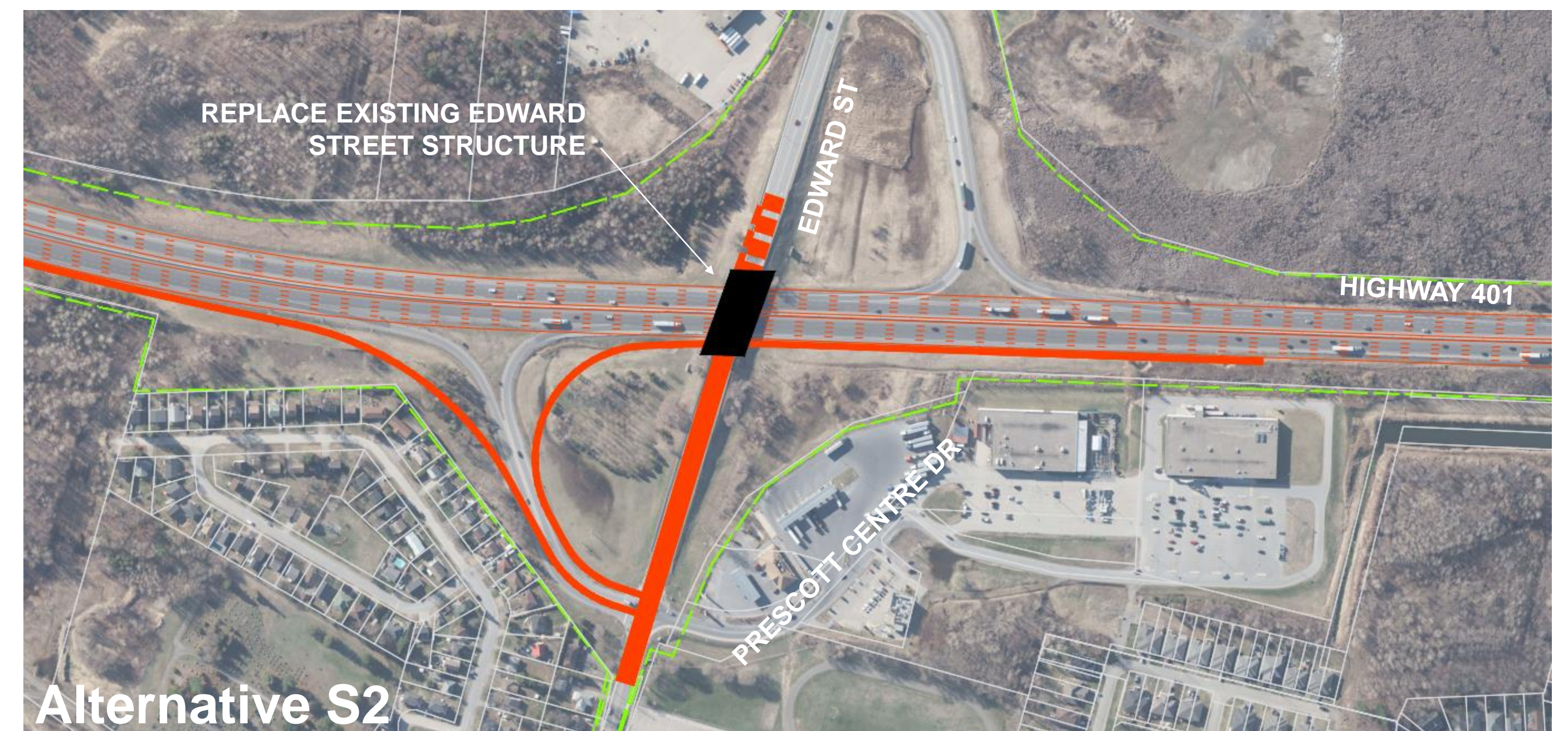
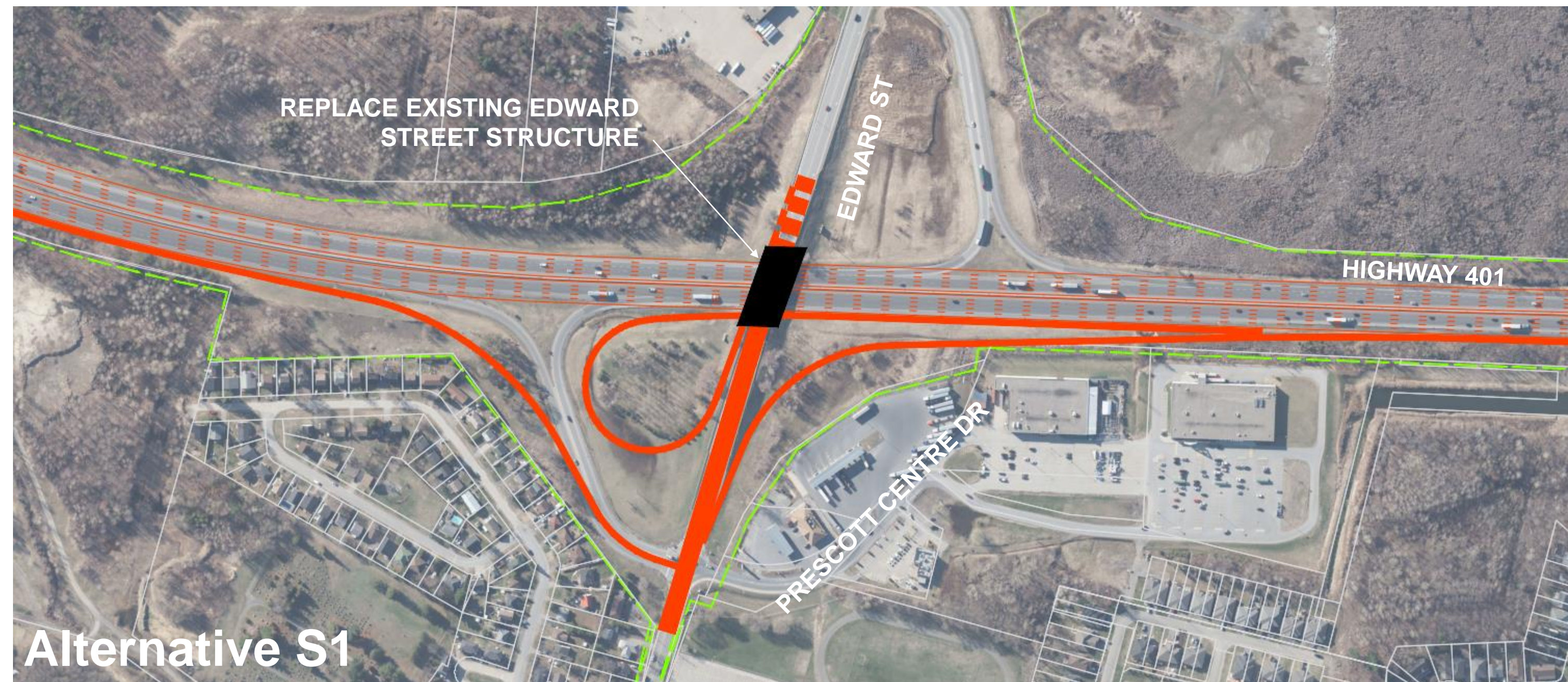
Most Preferred Alternative		Least Preferred Alternative



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Interchange Alternatives - Edward Street (South Side)

Three south side interchange alternatives for Edward Street (S1, S2 and S4) were carried forward to the detailed evaluation from the screening of long-list alternatives presented at PIC 1.

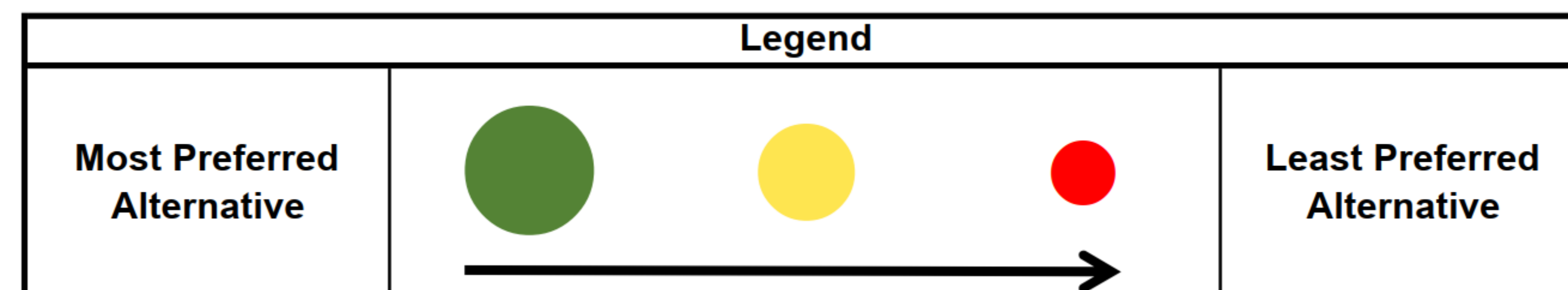




# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Edward Street Interchange (South Side) – Evaluation Summary

CATEGORY	S1: Parclo A4	S2: Parclo A2	S4: Parclo with Roundabout	EVALUATION SUMMARY / NOTABLE TRADE-OFFS
<b>Transportation/ Constructability</b>				<p><b>S2:</b> Lowest level of traffic operations anticipated, and therefore least preferred.</p> <p><b>S4:</b> Good overall traffic operations and roundabout has lower risk of severe collisions relative to a signalized intersection. However, close proximity of roundabout to Victor Road and school/residential entrances is expected to increase collision risk and impede access to and from these properties.</p> <p><b>S1:</b> Directional NB to EB on-ramp, rather than the NB left-turn required with <b>S2</b>. Additional ramp results in good overall traffic operations and the most desirable horizontal and vertical geometrics and sight distance.</p>
<b>Natural Environment</b>				<p>All alternatives have similar impacts in the SW quadrant.</p> <p><b>S1:</b> Additional EB on-ramp in the SE quadrant results in slightly greater impacts to potential SAR habitat, an unevaluated wetland, and impacts to properties with potential for contamination.</p> <p><b>S2 &amp; S4:</b> Equally preferred from a Natural Environment perspective.</p>
<b>Socio-Economic Environment</b>				<p><b>S1:</b> Minor property acquisition from 2 commercial properties along Prescott Centre Drive, though no impacts to current or future business operations are expected.</p> <p><b>S4:</b> Slightly reduced air quality impacts due to a reduction in idling traffic, though the roundabout impacts 4 residential properties in SW quadrant and is less desirable for Active Transportation users.</p> <p><b>S2:</b> No property acquisition anticipated, and therefore slightly preferred from a Socio-Economic Environment perspective followed by S1.</p>
<b>Cultural Environment</b>				<p><b>S1:</b> Additional on-ramp results in slightly greater impacts to land with archaeological potential than S2.</p> <p><b>S4:</b> Potential impact to one Built Heritage resource along Edward Street.</p> <p><b>S2:</b> Preferred from a Cultural Environmental perspective, followed by S1.</p>
<b>RECOMMENDATION</b>				





## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

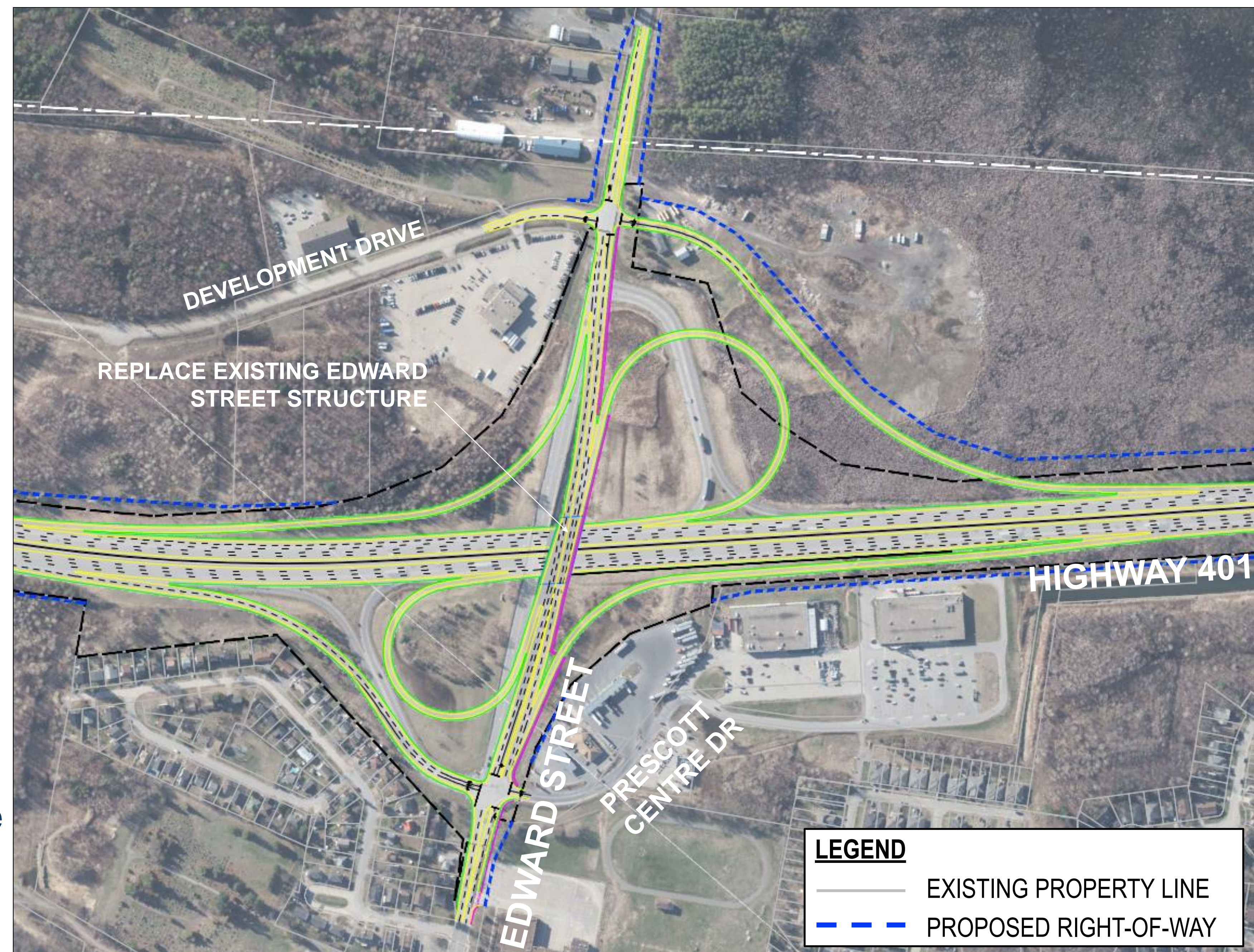
### Preferred Alternative at Edward Street Interchange

The **Parclo A4** (Alternative N1B) is the technically preferred north side alternative for the Edward Street Interchange for the following reasons:

- Good overall traffic operations.
- Avoids significant impacts to existing residential and commercial properties.
- Preferred or equally preferred in the Transportation/Constructability and Cultural environment categories.

The **Parclo A4** (Alternative S1) is the technically preferred south side alternative for the Edward Street Interchange for the following reasons:

- Roundabout option (S4) has complex construction staging and intersection and driveway spacing concerns.
- Improved traffic operations compared to both the existing condition and Alt S2.
- Most desirable horizontal and vertical geometrics and sight distance.



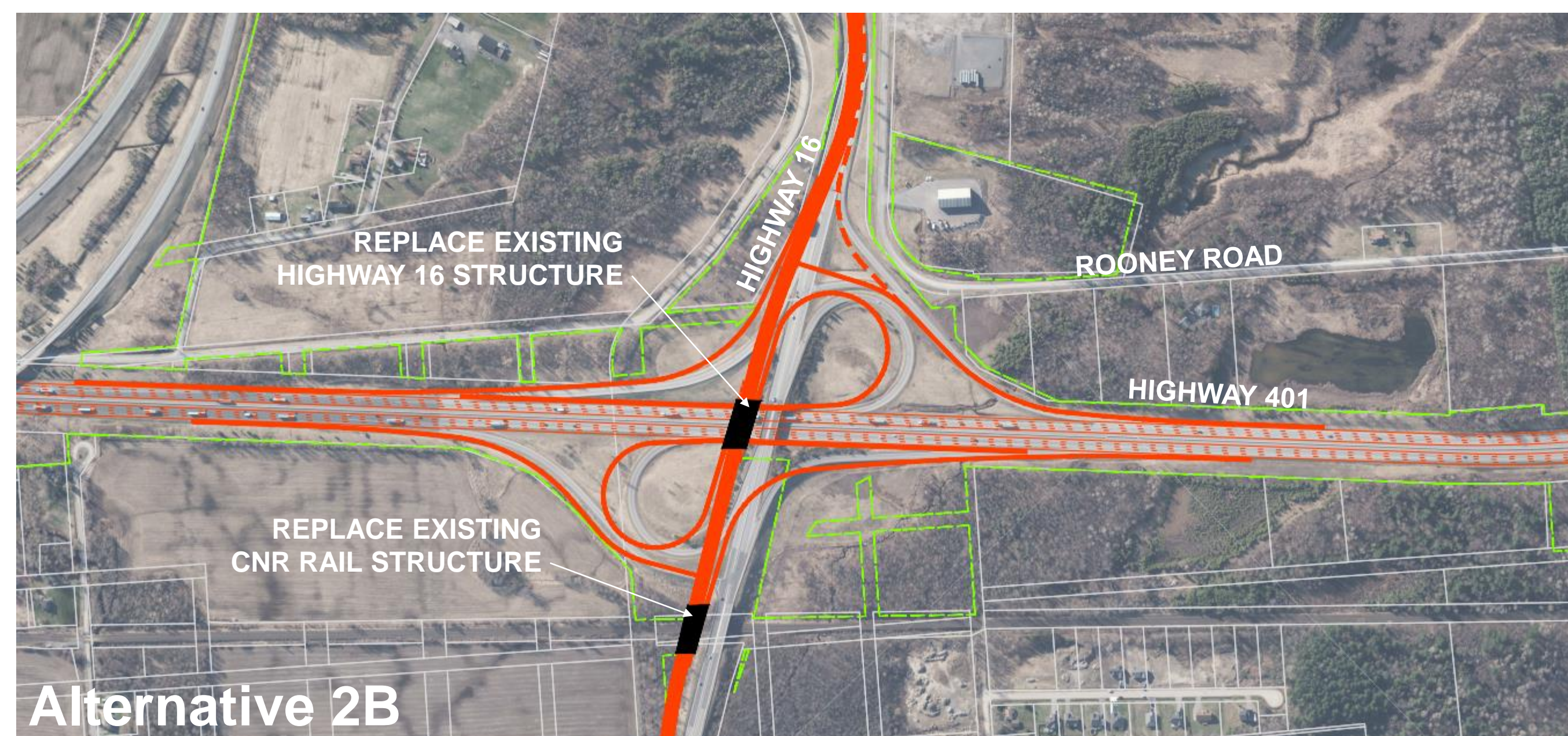
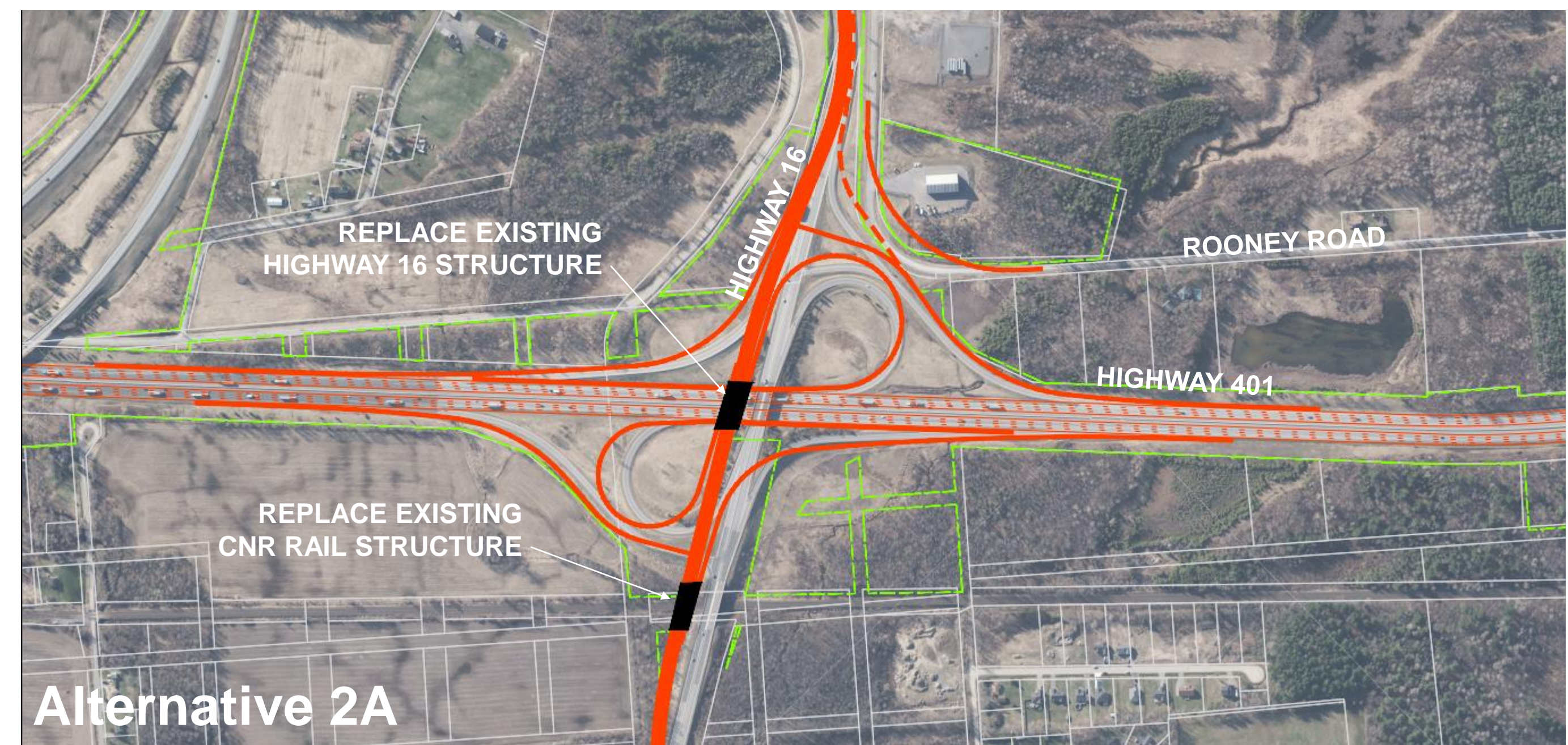
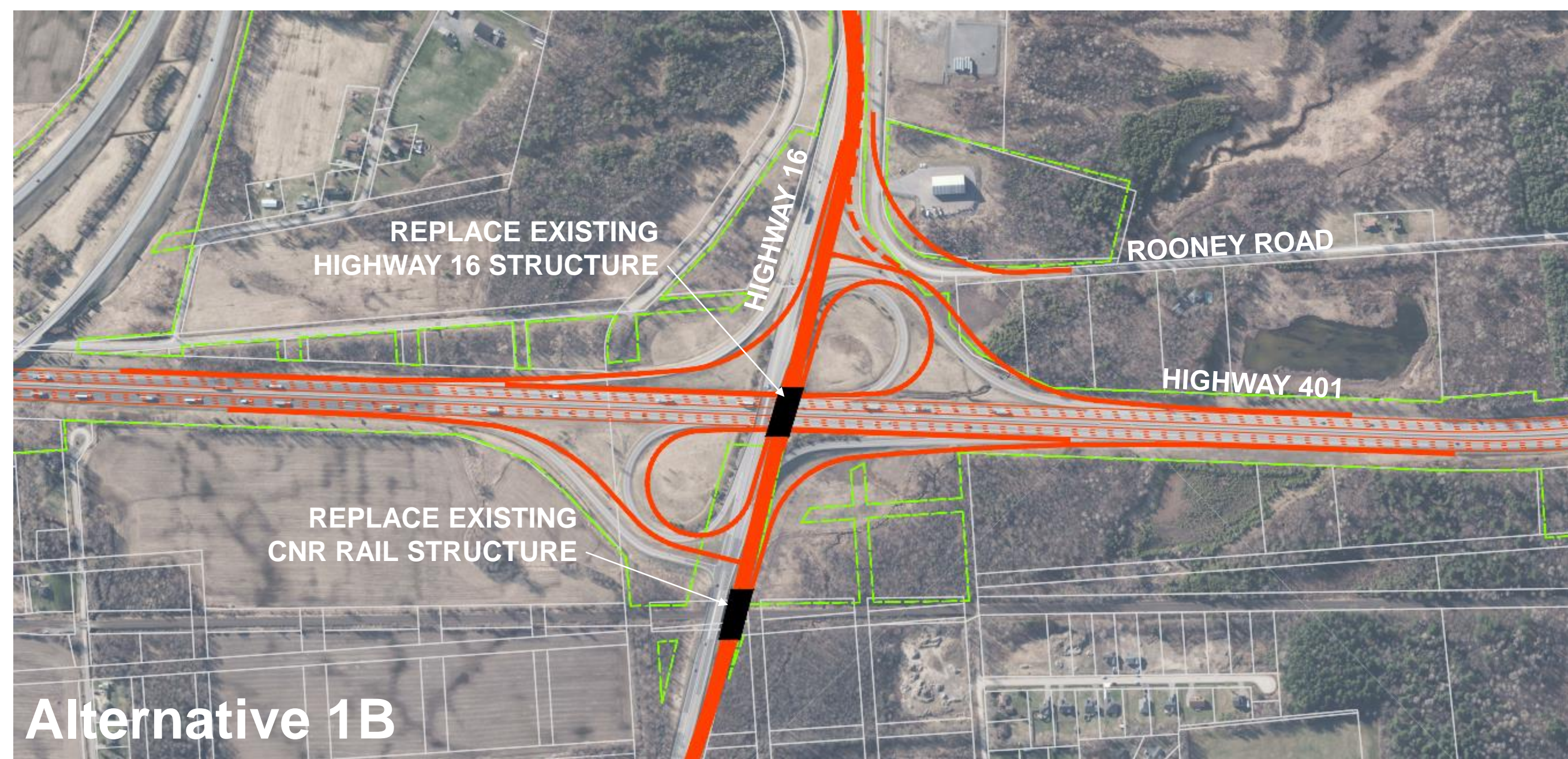
Technically Preferred Edward Street Interchange Configuration



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Interchange Alternatives - Highway 16

Three interchange alternatives for Highway 16 (1B, 2A and 2B) were carried forward to the detailed evaluation from the screening of long-list alternatives presented at PIC 1.





# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Highway 16 Interchange – Evaluation Summary

CATEGORY	1B: Parclo A4 (R=75m) Realign Hwy 16 to East	2A: Parclo A4 (R=90m) Realign Hwy 16 to West	2B: Parclo A4 (R=75m) Realign Hwy 16 to West	EVALUATION SUMMARY / NOTABLE TRADE-OFFS									
Transportation/ Constructability				All alternatives maintain the desirable Parclo A4 configuration and provide similar traffic operations. <b>1B:</b> Most significant Rooney Road realignment and associated utility impacts. <b>2A:</b> Improves the radius of the NB to WB on-ramp to 90 m, although 75 m radius provided with other alternatives is still considered acceptable. <b>2B:</b> Avoids realignment of Rooney Rd and hydro pole relocations along Rooney Rd, and can re-utilize portions of WB off-ramp. <b>2A &amp; 2B</b> therefore equally preferred from a Transportation / Constructability perspective.									
Natural Environment				<b>1B:</b> Slightly lower impacts to potential Species at Risk habitat, followed by <b>2B</b> . <b>2B:</b> Slightly lower impacts to Designated Natural Areas and Wetlands. Avoids impacts to the MTO Maintenance facility north of Rooney Road and has the lowest potential to encounter contamination.									
Socio-Economic Environment				<b>1B:</b> encroaches into the MTO maintenance yard along Rooney Road, but avoids the impacts to the residential property in the SW quadrant associated with 2A and 2B. <b>1B:</b> Lower impacts to agricultural operations in the southwest quadrant, and preferred from a Socio-Economic perspective.									
Cultural Environment				None of the alternatives are expected to have any notable impacts to archaeological resources, built heritage features or cultural landscapes.									
RECOMMENDATION				<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th colspan="3">Legend</th> </tr> </thead> <tbody> <tr> <td style="width: 33%;">Most Preferred Alternative</td> <td style="width: 33%;"> </td> <td style="width: 33%;">Least Preferred Alternative</td> </tr> <tr> <td colspan="3"> </td> </tr> </tbody> </table>	Legend			Most Preferred Alternative		Least Preferred Alternative			
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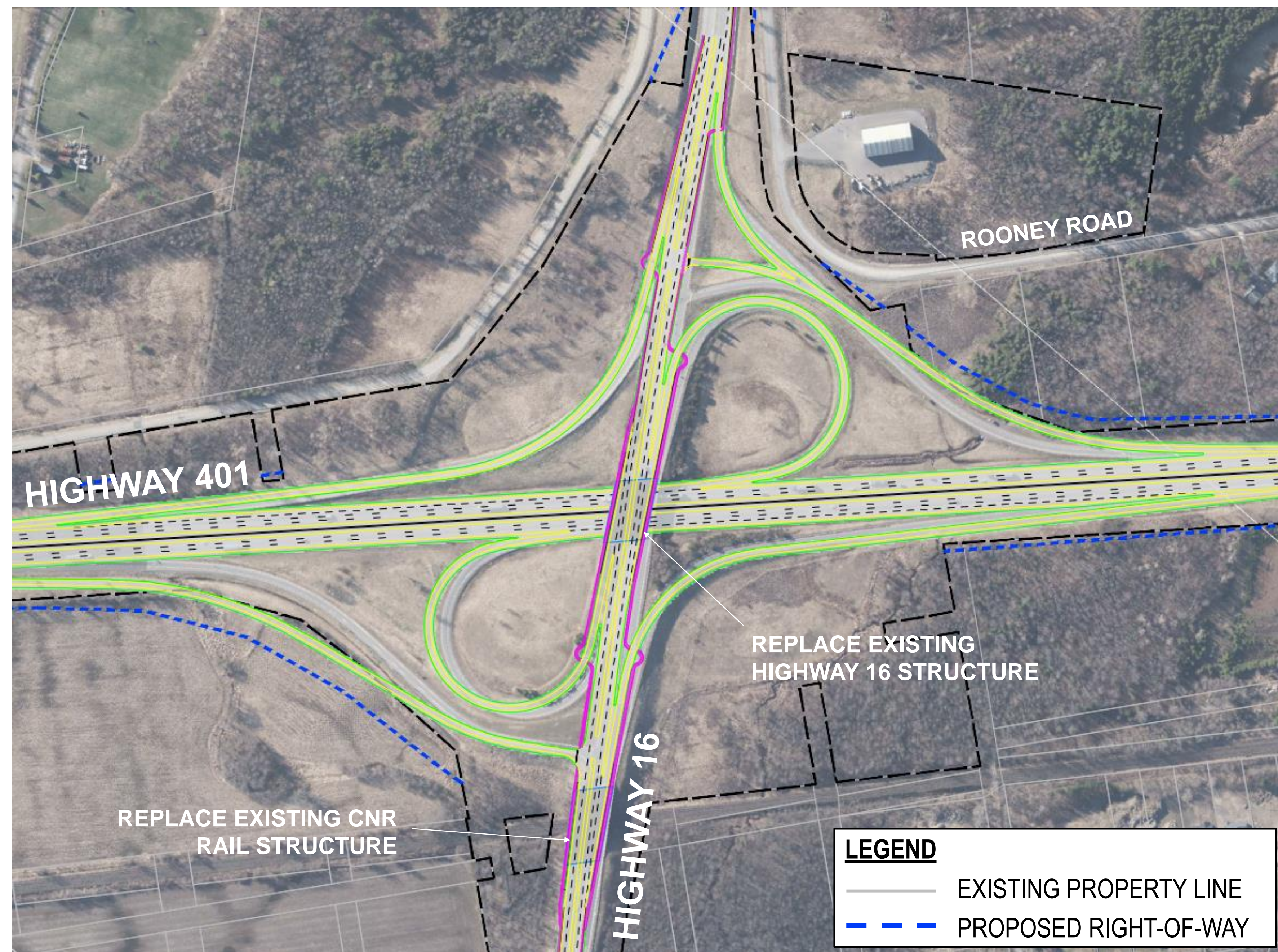
## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Preferred Alternative at Highway 16 Interchange

The Parclo A4 (R-75m) Realignment of Highway 16 to the West (Alternative 2B) is the technically preferred alternative for the Highway 16 Interchange for the following reasons:

- Avoids Rooney Road realignment and can re-use portion of existing WB off-ramp.
- Lower utility impacts.
- Avoids impacts to MTO Maintenance facility
- Lowest potential to encounter contamination.

Note: Subsequent to selection of the technically preferred alternative, the alignment of Highway 16 was modified closer to the existing bridge to reduce the extent of the realignment, and the associated impacts and costs.



Technically Preferred Highway 16 Interchange Configuration



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Blue Church Road Underpass

- The technically preferred alternative for the Blue Church Road bridge replacement will be on a new alignment east of the existing bridge.
- The existing bridge can remain open for the majority of the construction period.
- The replacement structure is located on a tangent alignment and provides improved sight distance across the structure.



Technically Preferred Blue Church Road Bridge Replacement

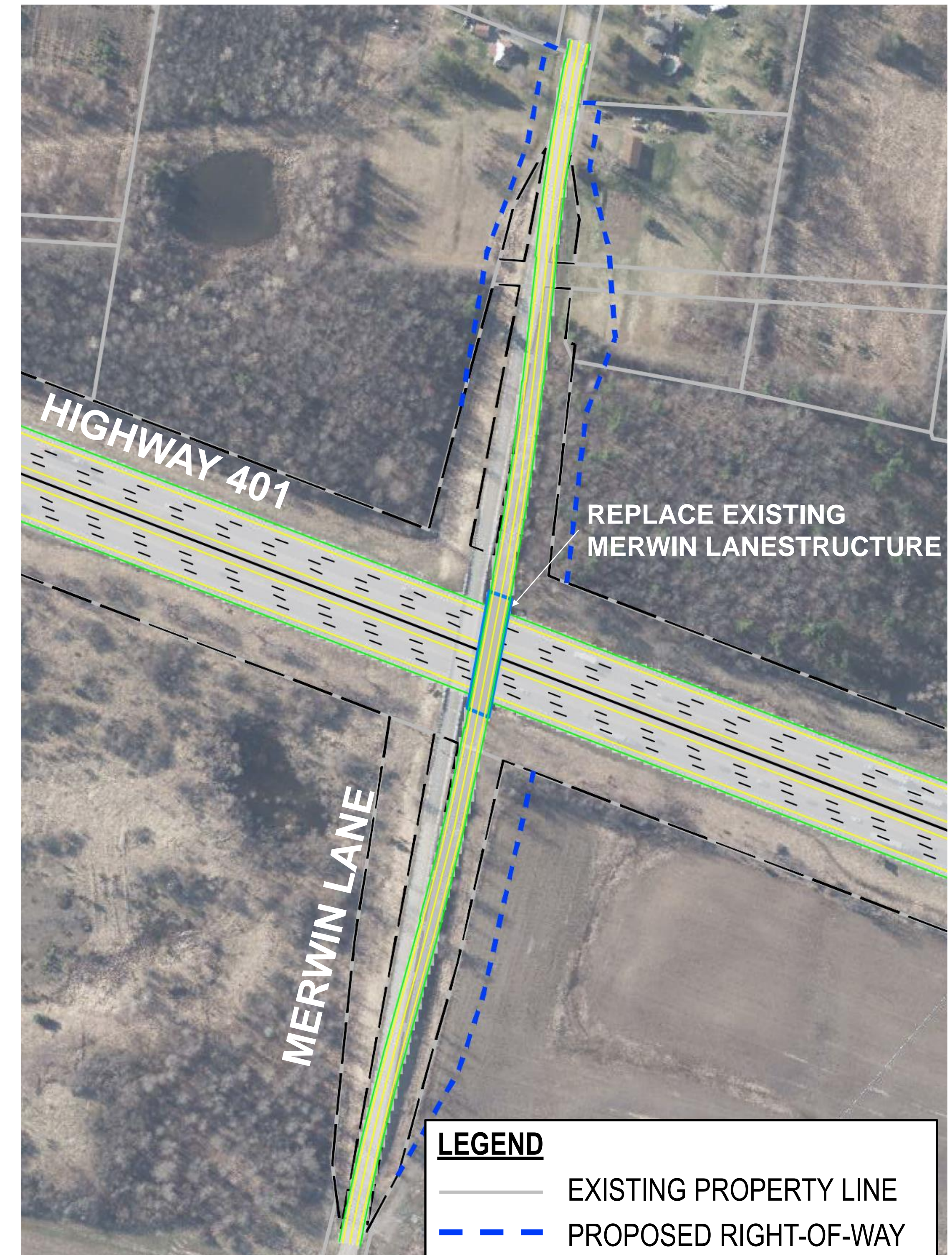




## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Merwin Lane Underpass

- The technically preferred alternative for the Merwin Lane bridge replacement will be on a new alignment east of the existing bridge.
- The existing bridge can remain open for the majority of the construction period.
- Shifting the alignment to the east avoids impacts to the hydro corridor along the west side of Merwin Lane.
- The east alignment also requires a lower grade raise of Merwin Lane over Highway 401 and reduced grading footprint, compared with a replacement to the west.



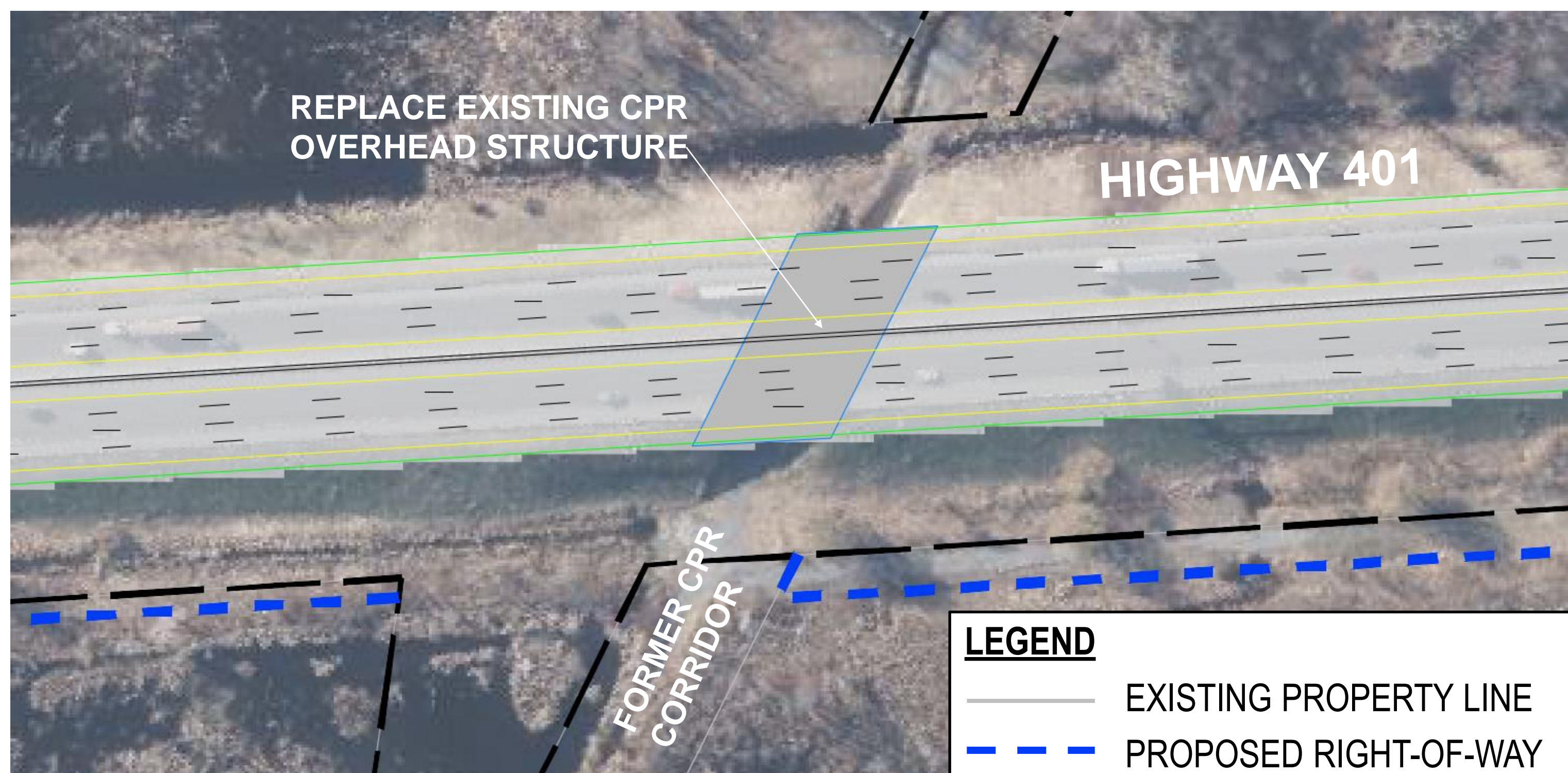
Technically Preferred Merwin Lane Bridge Replacement



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### CPR Overhead

- The technically preferred alternative for the bridge carrying Highway 401 over the existing CPR rail corridor will be replacement with a new bridge structure.
- Currently, the CPR track has been removed and the crossing is used as a recreational trail.
- The bridge will be designed to accommodate the ultimate 8-lanes on Highway 401 and will protect for a potential future rail corridor.





# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Highway 401 Widening

- Highway 401 will be widened from 4-lanes to 6-lanes in the interim, and ultimately to a future 8-lane section.
- The widening to an interim 6-lane section will occur as follows:

### Locations with Urban Cross-Section

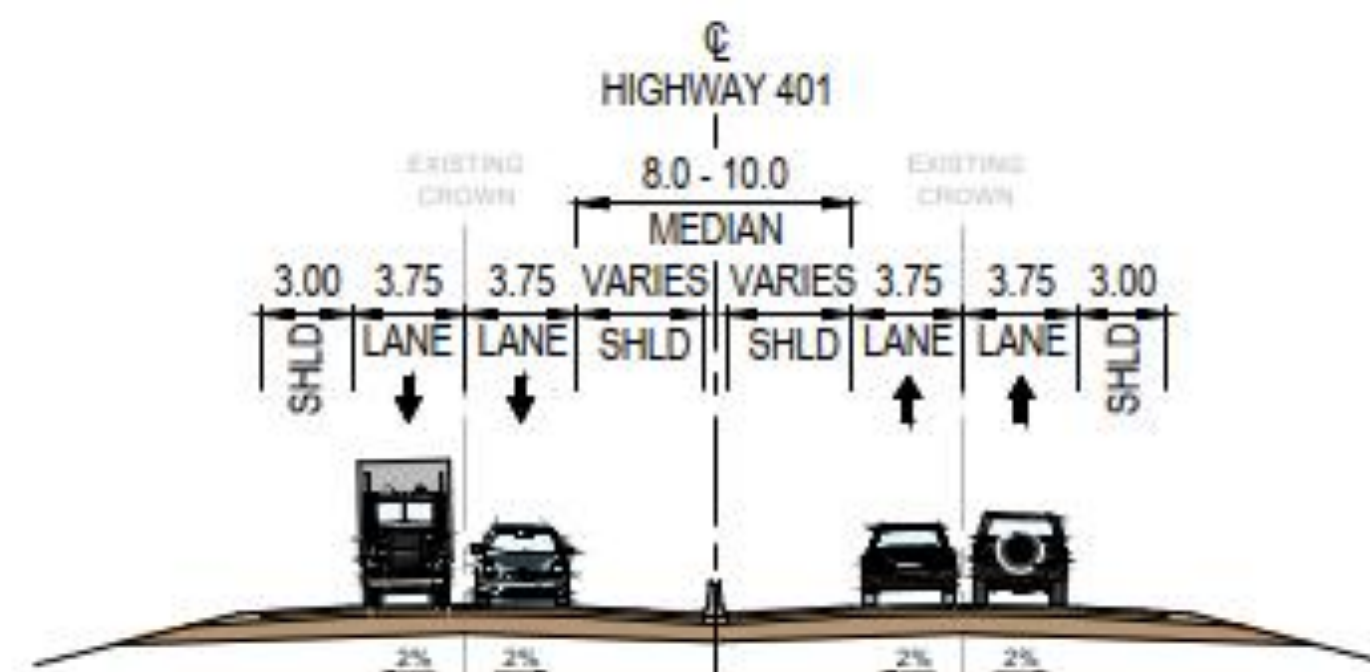
- Existing median will be maintained, and additional lanes will be added to the outside.

### Locations with Rural Cross-Section

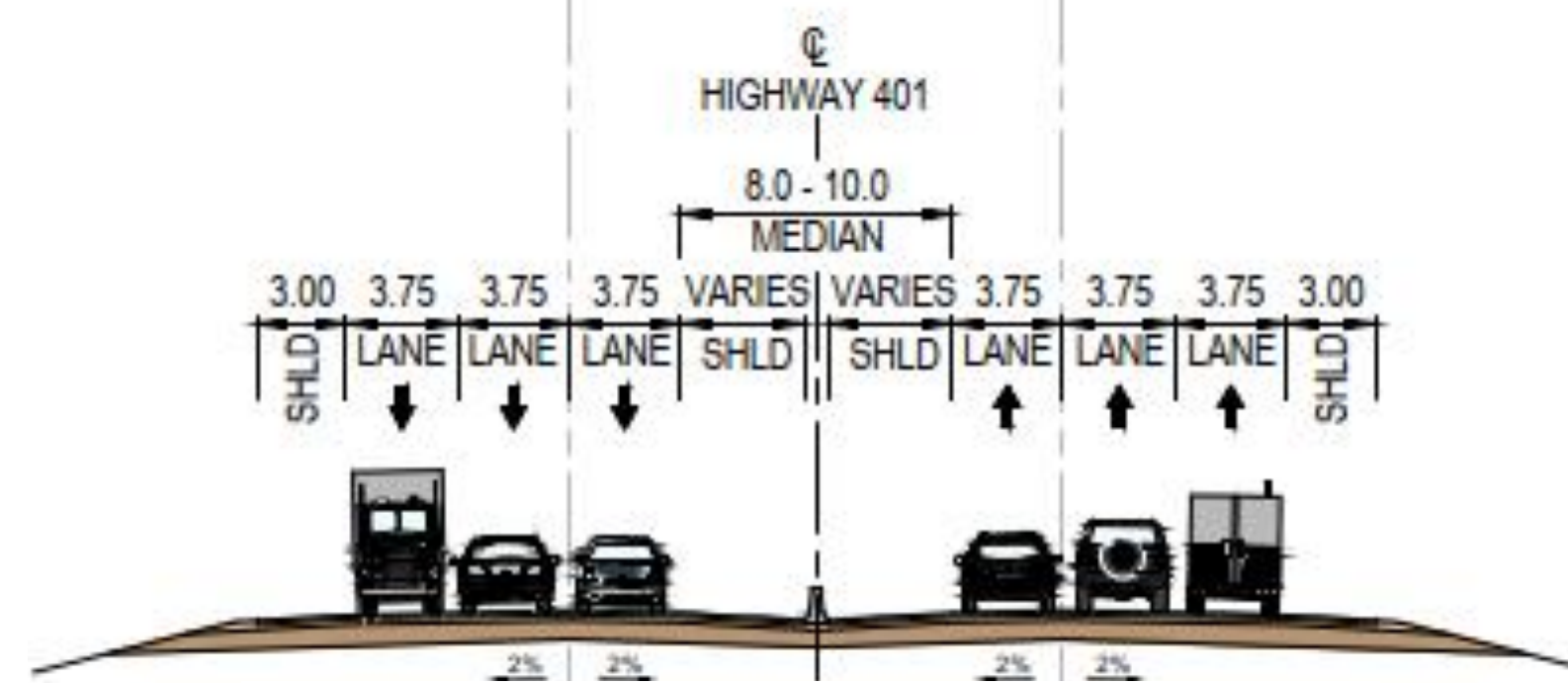
- Additional lanes will be added to the inside, with construction of new median barrier.

**Note: There is currently no timeline for widening Highway 401 to either 6 or 8-lanes**

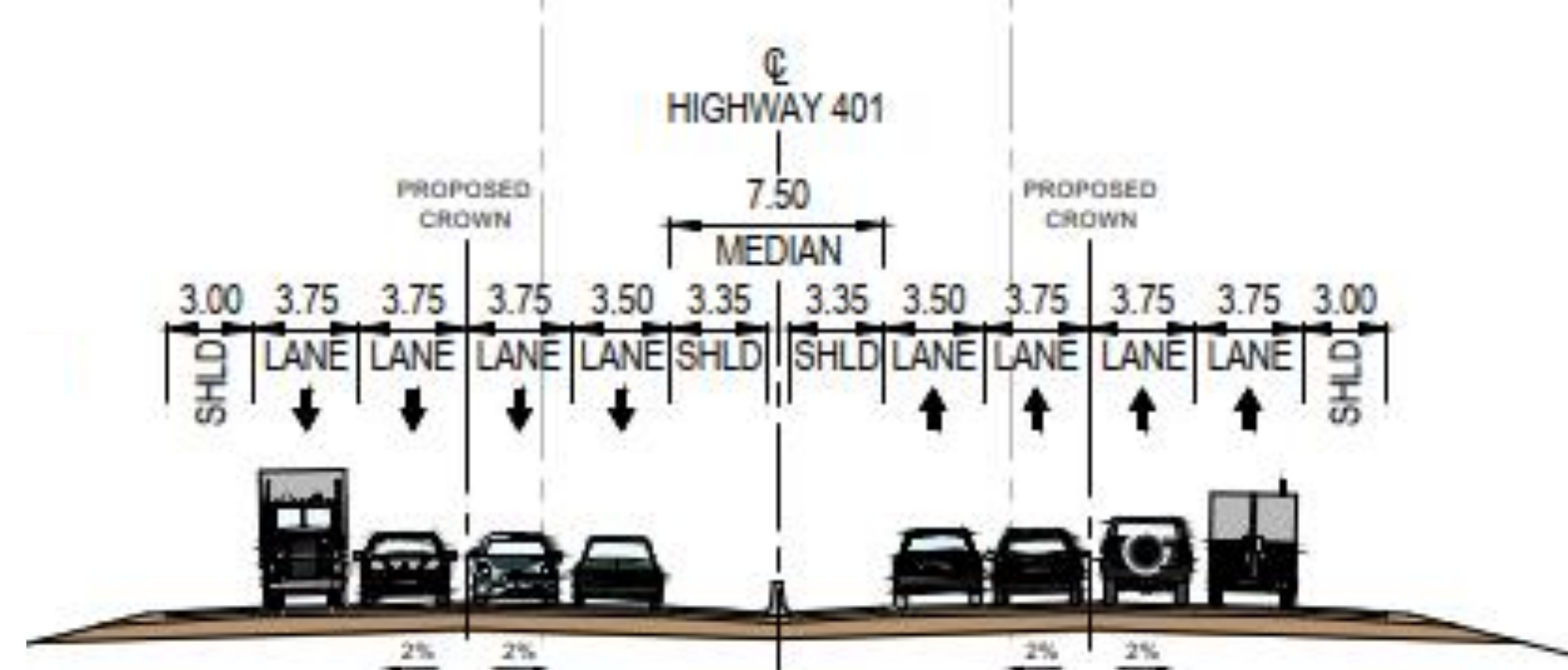
**Existing Urban Cross-Section**  
(West Study Limits to 1 km east of Maitland Rd, and 500 m west of Edward St to East Study Limits)



Existing (4-Lanes)

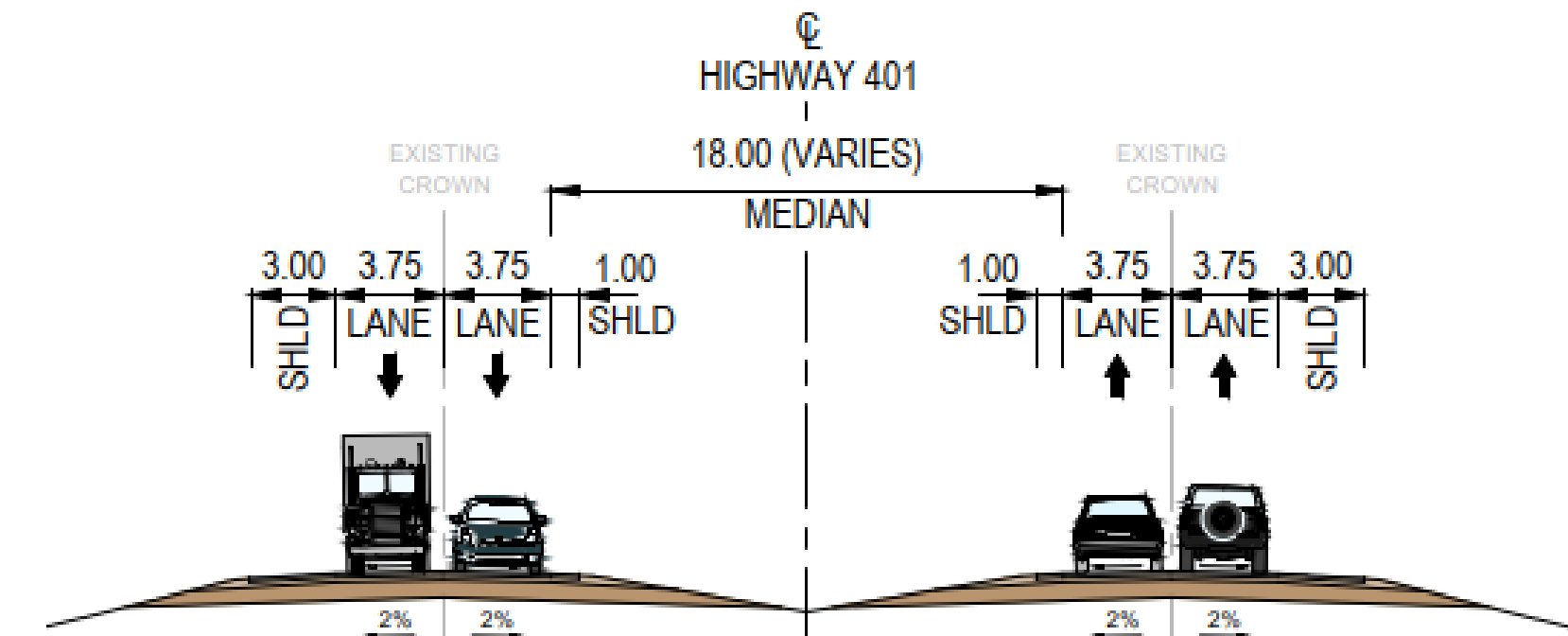


Interim (6-Lanes)

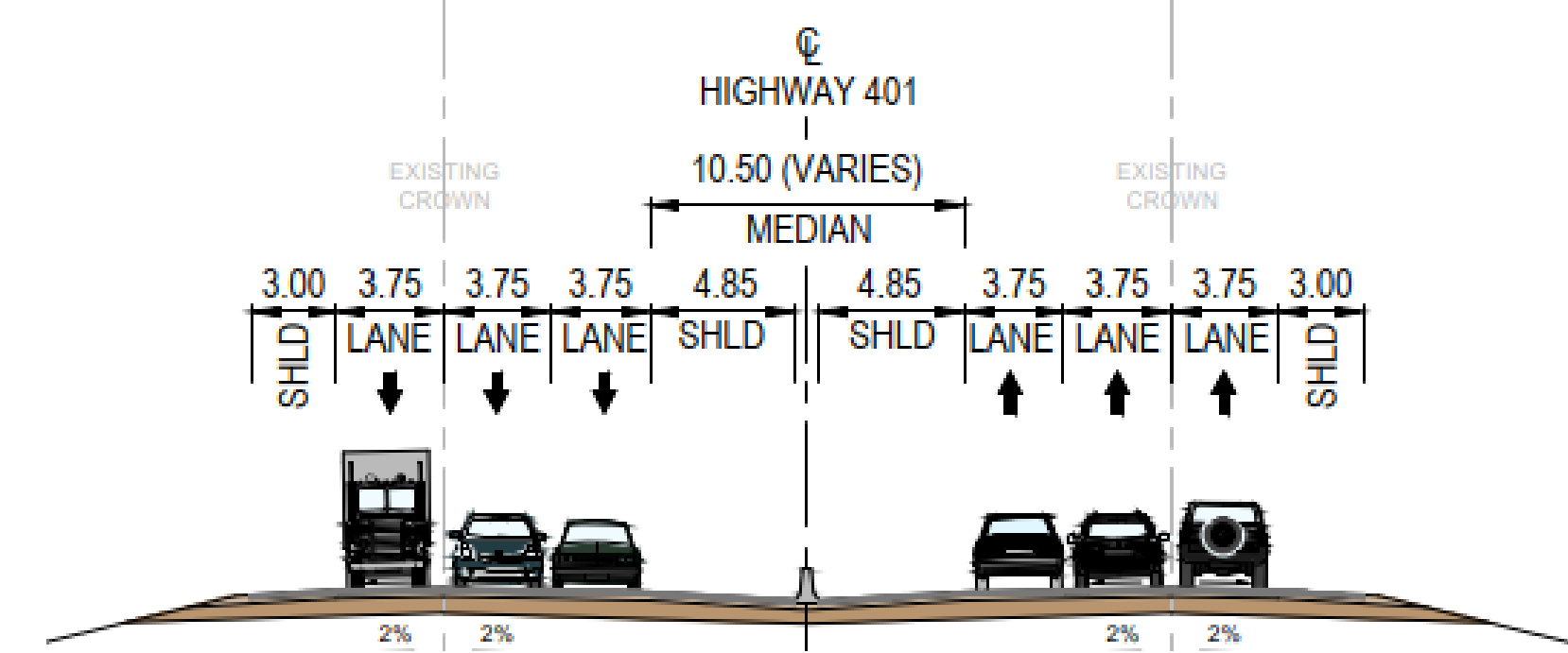


Ultimate (8-Lanes)

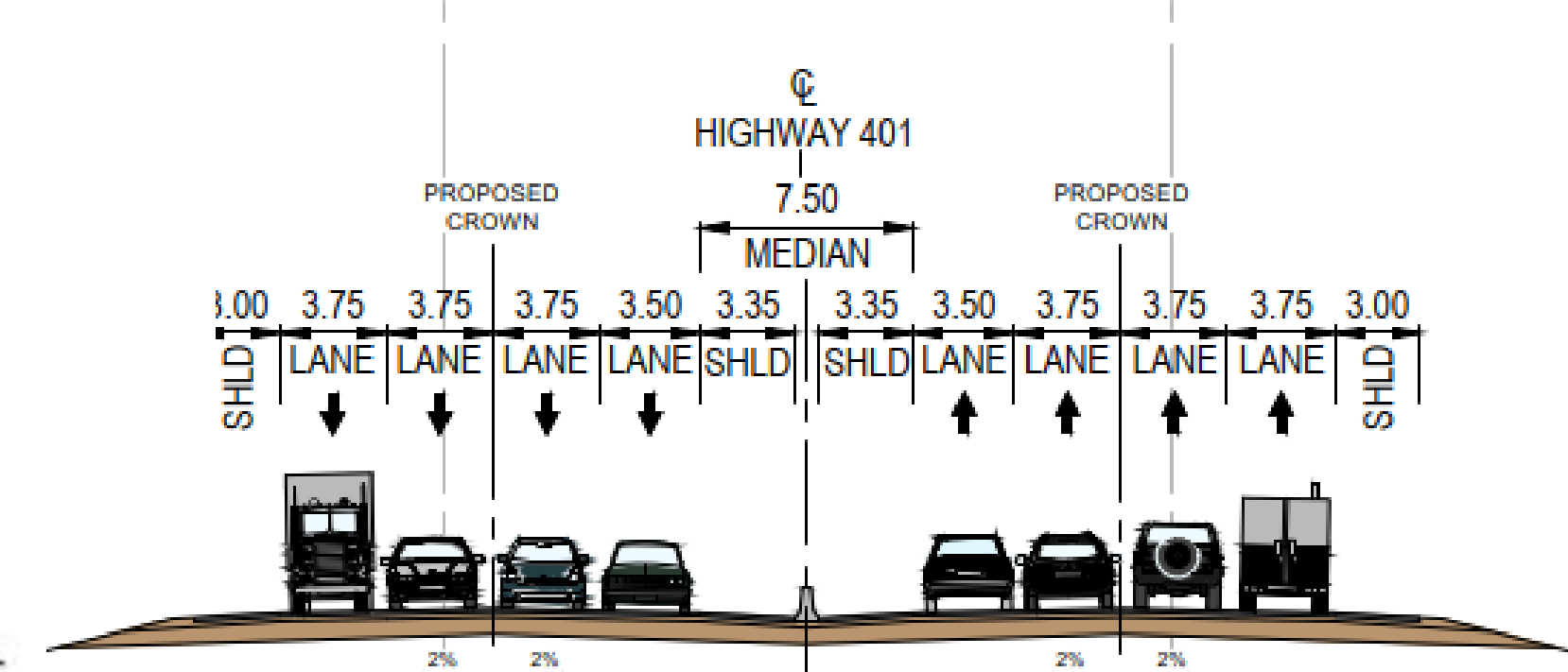
**Existing Rural Cross-Section**  
1 km east of Maitland Road to 500 m west of Edward Street



Existing (4-Lanes)



Interim (6-Lanes)



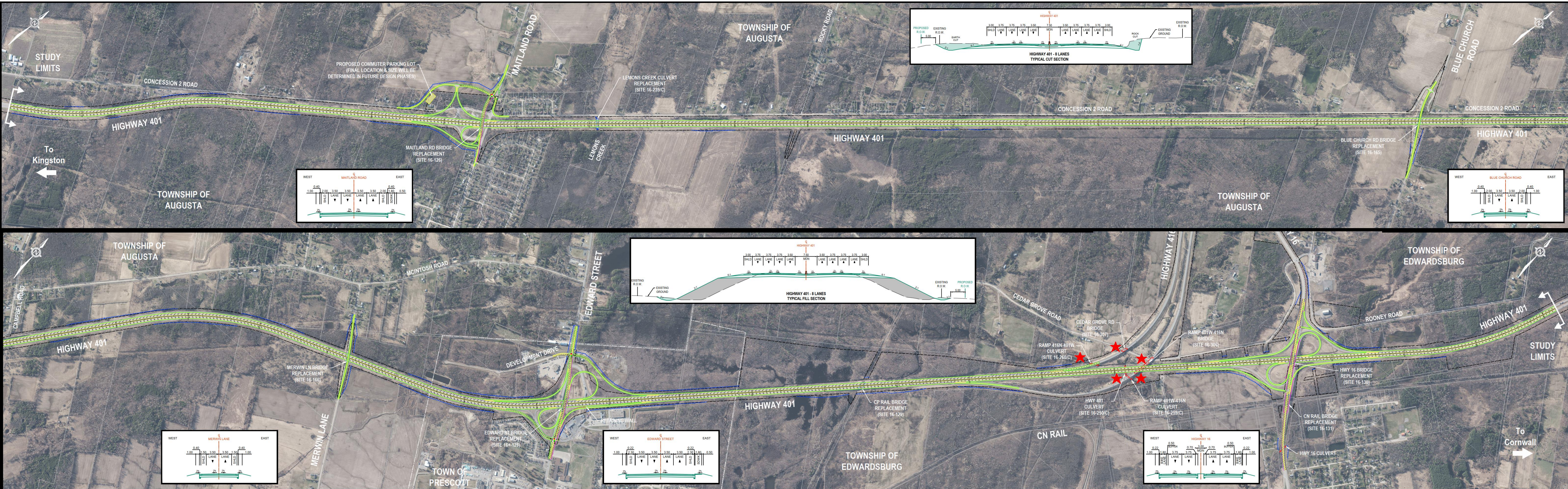
Ultimate (8-Lanes)



# HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

## Technically Preferred Plan

- The Technically Preferred Plan includes:
  - Reconfiguration of Maitland Road, Edward Street and Highway 16 Interchanges, including bridge replacements;
  - Replacement of Merwin Lane Underpass, Blue Church Rd Underpass, CPR Overhead and Highway 16 CNR Overhead;
  - Replacement of Lemon's Creek Culvert and localized realignment of Lemon's Creek;
  - Rehabilitation of two bridges and three culverts at the Highway 401/416 Interchange;
  - Widening of Highway 401 to an interim 6-lane and ultimate 8-lane cross section  
**(Note: There is currently no timeline for widening Highway 401 to either 6 or 8-lanes).**



**CLICK Below to view a high-resolution version of the above Technically Preferred Plan**

[https://www.highway401prescottmaitland.ca/wp-content/uploads/2023/08/PIC-2\\_Roll-Plan-Technically-Preferred-Alt.pdf](https://www.highway401prescottmaitland.ca/wp-content/uploads/2023/08/PIC-2_Roll-Plan-Technically-Preferred-Alt.pdf)





## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Construction Sequencing, Staging and Detours

- The proposed improvements are expected to be constructed through a series of contracts.
- It is anticipated that interchanges and bridges may be re-constructed or replaced first, followed by the Highway 401 widening to an interim 6-lanes (and ultimately a future 8-lanes) at a later date.
- To facilitate the work, short-term and/or long-term closures of Highway 401, ramps or crossing roads will be required. For all closures, advanced notification and signage will be provided, including a corresponding detour plan for full closures.
  - Consultation with municipalities will be undertaken during future stages of design regarding detour routes.
- The staging strategies will be confirmed during future stages of design, and notification will be provided to adjacent property and business owners at that time. It is expected that:
  - Two lanes of traffic will be maintained along Highway 401 in both directions during peak periods (night-time lane reductions may be required);
  - New bridges will be constructed adjacent to existing ones, while the existing bridges remain open;
  - Night-time / weekend or short-duration (< 30 days) closures of existing ramps, crossing roads and municipal roads are anticipated to complete tie-ins between the existing road/ramps and newly constructed pieces;
  - Full overnight closures of Highway 401 are anticipated to facilitate removal of the existing bridges;
  - Potential detour routes associated with full overnight closures of Highway 401 are summarized on the following slides. Detour routes will generally follow the designated Highway 401 Emergency Detour Routes (EDR).



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Potential Detour Routes (Highway 401 Closures)



Detour	Construction Activity	Route
<ul style="list-style-type: none"> <li>Yellow</li> </ul>	<ul style="list-style-type: none"> <li>Demolition of <b>Maitland Road, Blue Church Road, Merwin Lane and Edward Street</b> structures (single night closure for each structure)</li> </ul>	<ul style="list-style-type: none"> <li>Highway 401 WB: Exit Edward St, north to County Road 26 to Maitland Rd to Hwy 401</li> <li>Highway 401 EB: Exit Maitland Rd, south to Highway 2 to Highway 16 to Hwy 401</li> </ul>
<ul style="list-style-type: none"> <li>Red</li> </ul>	<ul style="list-style-type: none"> <li>Demolition of <b>Highway 16</b> structure (single night closure)</li> </ul>	<ul style="list-style-type: none"> <li>Highway 401 Westbound: Exit Hwy 16, south to Highway 2 to Maitland Road to Hwy 401</li> <li>Highway 401 Eastbound: Exit Hwy 16, south to Highway 2 to Shanly Rd to Hwy 401</li> </ul>



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

# Proposed Mitigation Measures and Recommendations

Environmental Factors	Summary of Key Mitigation Measures / Commitments to Future Work
Fish & Fish Habitat	<ul style="list-style-type: none"> <li>All watercourses with fish habitat present within the study area have been characterized as warmwater fish habitat. In-water work at locations of direct and indirect fish habitat will be required to adhere to in-water timing windows (i.e., in-water work permitted from July 16<sup>th</sup> to March 14<sup>th</sup> of any given year).</li> <li>Standard erosion and sediment control best management practices to be implemented during construction.</li> </ul>
Terrestrial Wildlife & Species at Risk	<ul style="list-style-type: none"> <li>Vegetation removal to avoid the active season for breeding birds and Species at Risk bats.</li> <li>Additional localized study may be required during detail design to confirm the presence of Species at Risk and the potential for impact.</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>Vegetation removal to be minimized to the extent possible.</li> <li>A landscaping plan will be prepared to provide landscape enhancement and tree planting opportunities.</li> </ul>
Groundwater	<ul style="list-style-type: none"> <li>The majority of the study area is located within the South Nation Source Protection Area (SPA) with a segment at the west end located within the Cataraqui SPA.</li> <li>Groundwater taking requirements will be determined during detail design and the need for an EASR registration or a Permit To Take Water (PTTW) from the Ministry of Environment Conservation and Parks will be confirmed.</li> </ul>
Archaeology / Built Heritage	<ul style="list-style-type: none"> <li>Areas within the study area have potential to contain archaeological resources. Stage 2 Archaeological Assessments will be completed during detail design to clear any remaining locations of archaeological potential prior to construction.</li> <li>Built Heritage resources to be avoided.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>Air quality during construction may be affected with dust impacts from heavy construction equipment. Standard best management practices will be applied during construction to minimize impacts to air quality including the use of dust suppressants, periodic watering as required, keeping stockpiled material covered, and making certain that all equipment pollution control devices are operational.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>Standard noise mitigation measures (i.e., engine maintenance, mufflers, etc.) will be employed during construction, and municipal noise control by-law requirements followed.</li> </ul>
Climate Change	<ul style="list-style-type: none"> <li>Climate Change mitigation may include minimizing the removal of vegetation and replanting where possible as well as incorporating Low Impact Development features and other design options to make infrastructure more resilient.</li> </ul>



## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD

### Next Steps & How to Stay Informed

Following this PIC, the Project Team will:

- Review the comments received at this PIC and respond to any questions.
- Incorporate any revisions where appropriate and finalize the preliminary design plans.
- Finalize mitigation measures to minimize or avoid potential environmental effects.
- Prepare and file the Transportation Environmental Study Report for 30-day public comment period and agency review.
- Seek Environmental Assessment clearance.

Detail Design and Construction will be completed as future, separate undertaking(s).

The following information is available on the Study Website for this PIC:

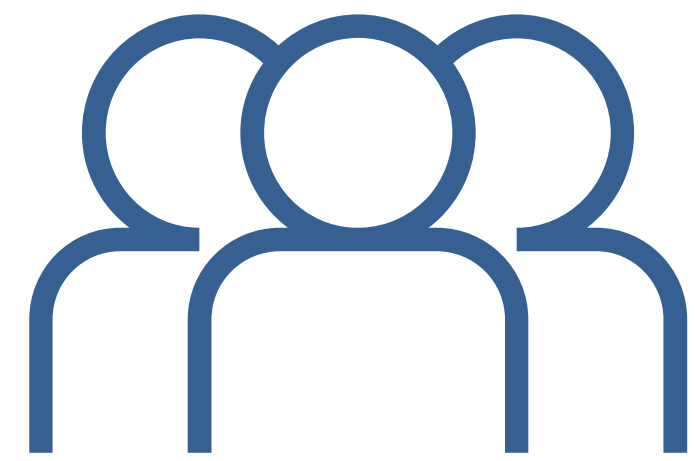
- PIC #2 Video Presentation & Transcript
- Roll Plan of Existing Conditions (from PIC #1)
- Roll Plan of Technically Preferred Plan

Project website at: [www.highway401prescottmaitland.ca](http://www.highway401prescottmaitland.ca)





## HIGHWAY 401 IMPROVEMENTS FROM 1 KM EAST OF HIGHWAY 16 TO 3.3 KM WEST OF MAITLAND ROAD



# THANK YOU!

**Thank you for attending PIC #2!**

A **PIC Comment Form** can be found via the Study Website.

Please provide any comments by **September 18<sup>th</sup>, 2023.**

**For more information:**

**Visit our Study Website at:** [www.highway401prescottmaitland.ca](http://www.highway401prescottmaitland.ca)

**Email the Project Team at:** [ProjectTeam@highway401prescottmaitland.ca](mailto:ProjectTeam@highway401prescottmaitland.ca)

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Freedom of Information and Protection of Privacy Act

Comments and information regarding this study are being collected to assist the MTO and AECOM in meeting the requirements of the *Ontario Environmental Assessment Act*, and in accordance with the *Freedom of Information and Protection of Privacy Act*. With the exception of personal information, all comments will become part of the public record.