

# Highway 400/6<sup>th</sup> Line Interchange Municipal Class Environmental Assessment Review

Study Update



now



Stantec



# Introduction

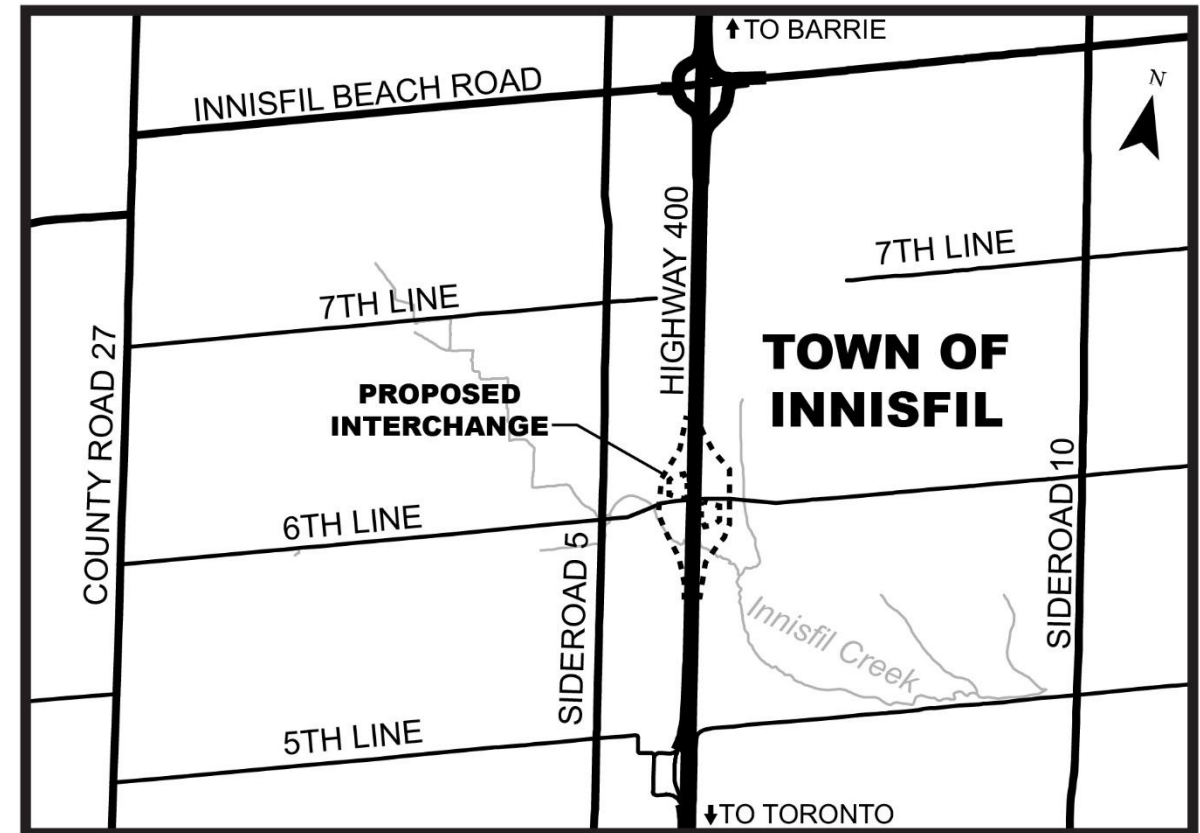
The Ontario Ministry of Transportation (MTO) entered into a co-proponency with the Town of Innisfil to undertake a Municipal Class Environmental Assessment (EA) Review of the 2017 EA-Approved Plan for the proposed interchange at Highway 400 and 6<sup>th</sup> Line as shown below. This review involves updating existing environmental conditions and determining whether any design changes to the proposed interchange are required. Morrison Hershfield (now Stantec) and HDR have been retained by MTO to undertake this review.

This purpose of this Study Update is to present and receive input on the work completed to date including:

- The overall study process
- Existing environmental conditions
- Proposed design changes to the EA-Approved Plan

**Your Participation is Important and Appreciated!**

**We encourage you to ask questions and make your opinions known to us.**



# Land Acknowledgement

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We would like to acknowledge that the Highway 400 and 6th Line Interchange project is geographically located in an area that is rich in Indigenous history, and that there are many groups, that have resided in, and travelled through the region since time immemorial. We encourage viewers to learn whose traditional territory in which their home and work are located.

For this project, we acknowledge the presence of the Williams Treaty Group, Alderville First Nation, Beausoleil (Chimnissing – Christian Island), Chippewas of Georgina Island First Nation, Chippewas of Rama (Mnjikaning) First Nation, Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation, Huron-Wendat Nation, Kawartha Nishnawbe, and other Indigenous communities and peoples within the project area.

# Study Background/Related Projects

## Highway 400/6<sup>th</sup> Line Interchange, Schedule C Municipal Class EA (Town of Innisfil, 2017)

- Recommended new interchange
- Parclo/Diamond hybrid with roundabouts
- **See next two slides**

## Highway 400/6<sup>th</sup> Line Bridge Replacement Detail Design (2018) & Construction (2020)

- 6<sup>th</sup> Line overpass replaced like-for-like with new 2-lane underpass on a new alignment
- New bridge compatible with EA-approved interchange and future highway widening
- Town purchased EA-approved property requirements north of 6<sup>th</sup> Line

## Highway 400/6<sup>th</sup> Line Interchange, Municipal Class EA Update (2023/2024)

- EA-approved interchange reviewed
- Design updates considered
- Review phased approach for interchange improvements (interim & ultimate)
- **We are here**

2017

2018-2020

2023-2024

## Highway 400 MTO EA Update/PD Study from Highway 89 to the Junction of Highway 11 (2017)

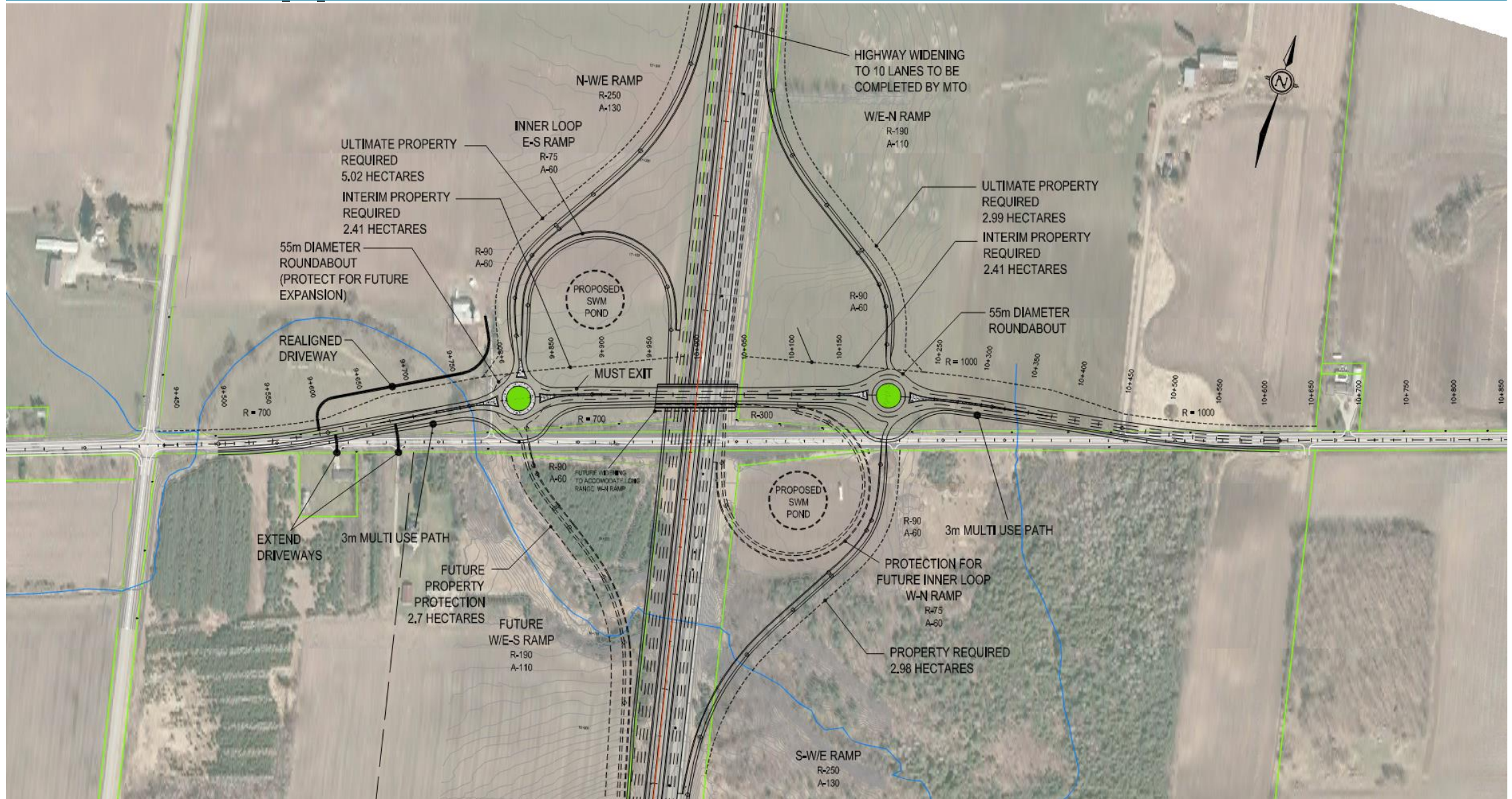
- Highway 400 widening to 10 lanes

# **Highway 400/6<sup>th</sup> Line Interchange, Schedule C EA (Town of Innisfil, 2017)**

- In 2017, the Town of Innisfil (the Town) completed a Schedule 'C' Municipal Class Environmental Assessment (EA) for the proposed interchange at Highway 400 and 6th Line.
- The interchange has been identified in the Town's Official Plan (OP) and Transportation Master Plan (TMP). Improvements to 6th Line and the new interchange will service current and future traffic for planned development in the Town.
- The project was cleared to proceed after an Environmental Study Report (ESR) received EA approval in 2017.

**The next slide presents the 2017 EA-Approved Plan**

# 2017 EA Approved Plan



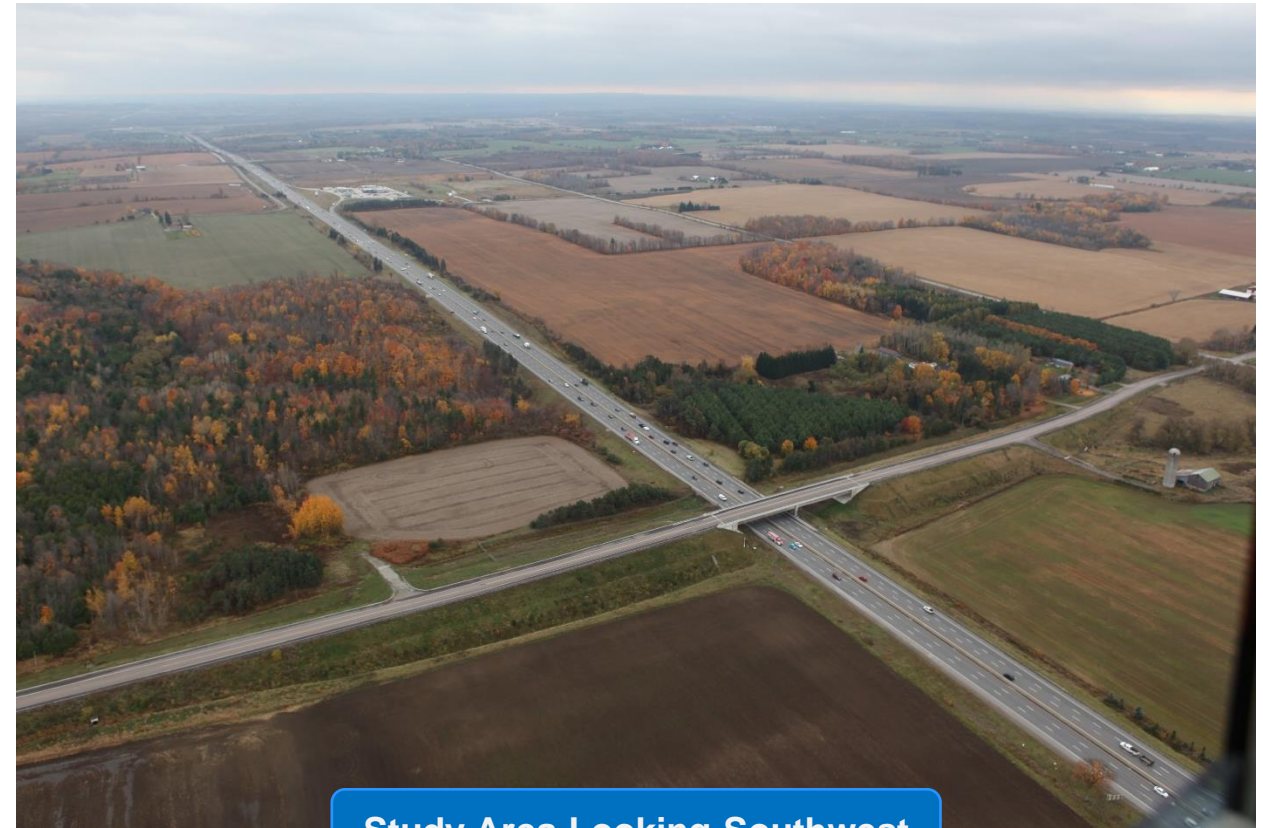
# Review of 2017 EA Approved Plan

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- A review of the EA-approved interchange identified a number of issues that warrant consideration of design changes/new alternatives:
  - The Highway 400/6<sup>th</sup> Line overpass was replaced with a new underpass in 2020.
  - 2017 EA Approved Plan assumed 120 km/h Hwy 400 design speed, which has been updated to 130 km/h design speed.
  - Grading for the proposed ramps extends beyond the EA-designated property limits, therefore will require additional property.
  - Alignments for the proposed interchange ramps require updates to meet current design standards.
  - Significant impacts to Innisfil Creek and Species at Risk (SAR) bat habitat due to future South-to-East/West off-ramp and future West-to-South on-ramp.
  - The Innisfil Creek structural culvert crossing Highway 400 requires replacement with bridges rather than extending the existing culvert.

# Update to Existing Environmental Conditions

- Innisfil Creek is cool-water; no aquatic Species at Risk (SAR).
- SAR Bat Habitat in wooded areas south of 6th Line, on both sides of Highway 400.
- SAR Birds (Bobolink and Eastern Meadowlark) in northeast quadrant of the interchange.
- Development for employment uses currently being planned in the northeast quadrant.
- Development for a new transit-oriented community surrounding the proposed Innisfil GO station is proposed 10 km east of Highway 400/6<sup>th</sup> Line.
- No archaeological resources were identified in northeast, southeast and southwest quadrants. Further archaeological assessment is required in northwest quadrant.



Study Area Looking Southwest

# New Interchange Alternatives

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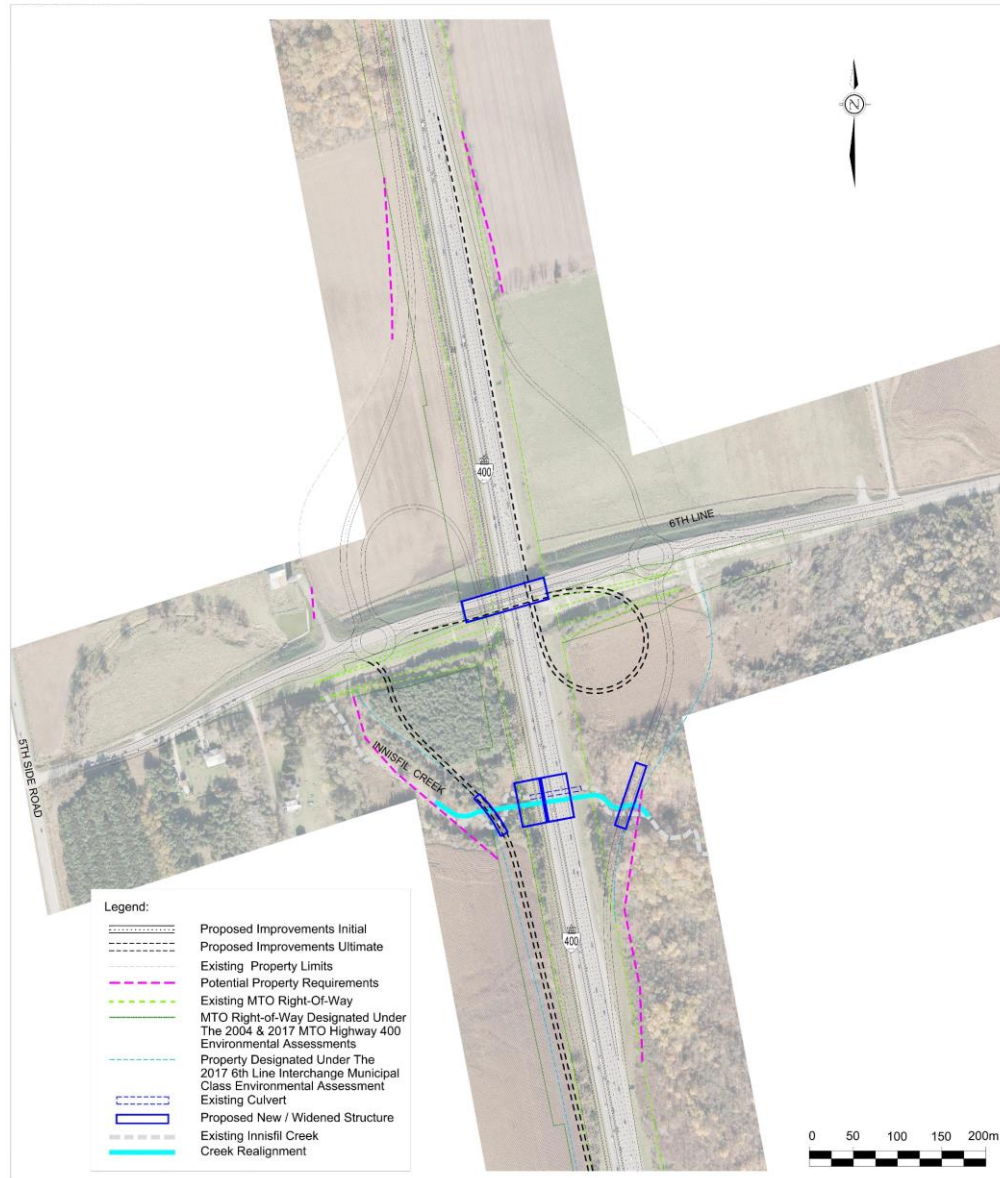
The Project Team developed two alternatives to address identified issues with the 2017 EA-Approved Plan. The two new alternatives were developed by reducing the posted speed on 6<sup>th</sup> Line from 80 km/h to 60 km/h, which allows the interchange ramps to be reduced in size to minimize the interchange ‘footprint’ impacts.

These alternatives include:

- **Alternative A** – Similar configuration to EA-approved plan updated to meet MTO standards.
- **Alternative B** – Traditional ‘Parclo A4’ with signalized ramp terminals to meet MTO design standards.

The next two slides present the interim and ultimate interchange configurations for these two alternatives. These alternatives were evaluated against the 2017 EA-Approved Plan.

# Alternative A: Parclo with Roundabouts

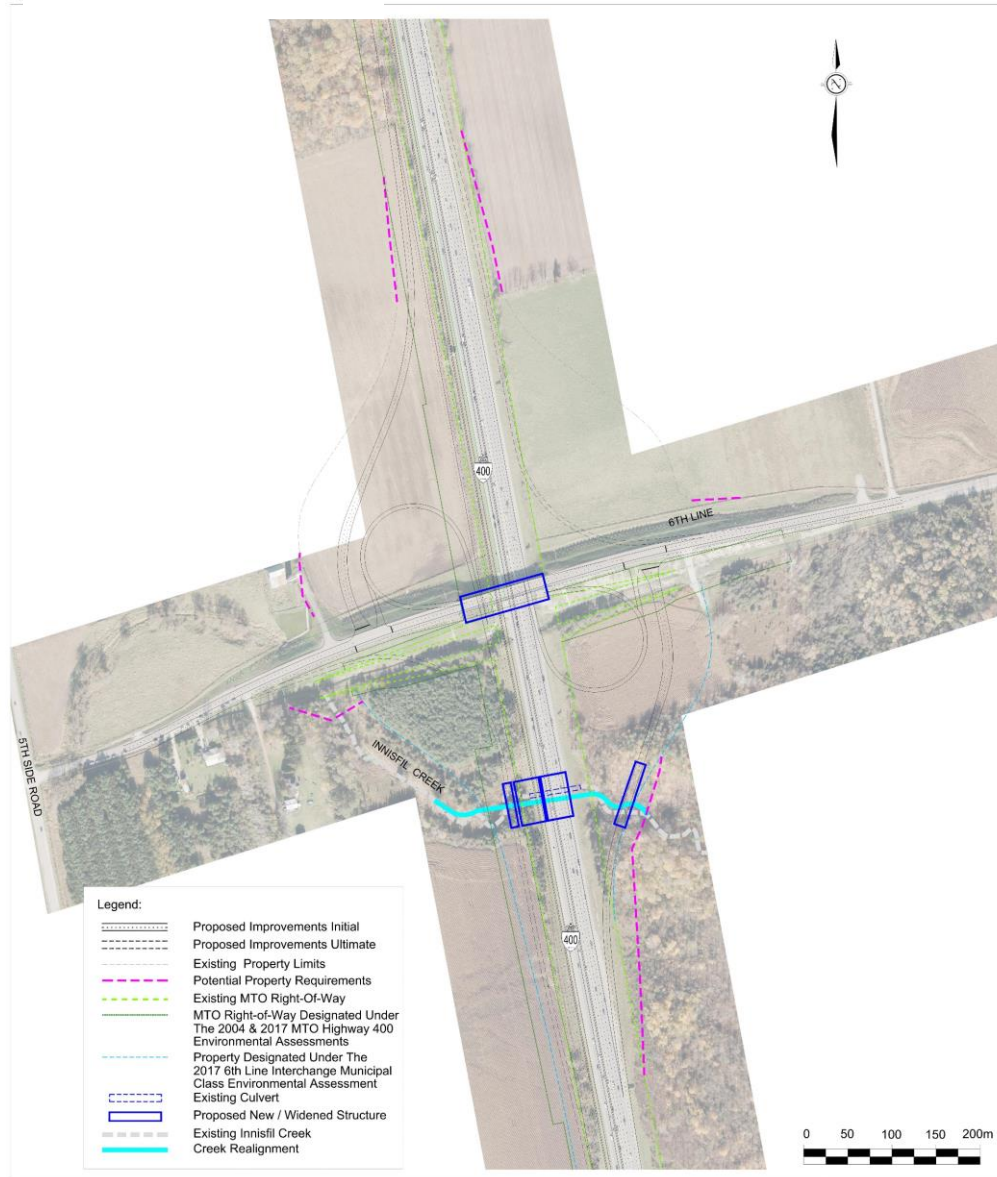


## Key Features/Impacts:

- Parclo A2/Diamond (interim) / Parclo A4 (ultimate) with roundabout ramp terminals
- Interchange design meets Highway 400 and 6th Line design speeds
- Greater property impacts beyond EA-approved limits compared to Alternative B
- Greater impacts to natural features and Species at Risk compared to Alternative B
- Roundabout ramp terminals will have less capacity than Alternative B beyond 2041
- Less 6th Line bridge widening requirements compared with Alternative B
- Less desirable West-to-South ramp crossing of Innisfil Creek compared to Alternative B

# Alternative B: Traditional Parclo A4

Highway 400/6th Line Interchange - Ultimate Configuration - Alternative B



## Key Features/Impacts:

- Parclo A2 (interim) / Parclo A4 (ultimate) with signalized ramp terminals
- Interchange design meets Highway 400 and 6<sup>th</sup> Line design speeds
- Less property required beyond EA-approved limits compared to Alternative A
- Less impact to natural features & Species-at-Risk compared to Alternative A
- Signalized ramp terminals will have greater capacity than Alternative A beyond 2041
- Increased bridge widening compared to Alternative A
- More desirable West-to-South ramp crossing of Innisfil Creek compared to Alternative A

# Evaluation Criteria

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Alternatives A and B were compared against the 2017 EA Approved Plan using the following evaluation criteria:

## **Natural Environment**

- Extent of Impacts to Natural Features
- Extent of Vegetation Community Removal
- Potential Impacts to Wildlife Habitat
- Impacts to Fish and Aquatic Habitat
- Impacts to Species at Risk
- Water quality – stormwater runoff

## **Socio-Economic Environment**

- Impacts to Agricultural Lands / Loss of Farmland
- Property Impacts
- Impact to Existing Barn Structure
- Out-of-way travel for Farm Equipment during Construction
- Noise Impacts / Air Quality Impacts

## **Cultural Environment**

- Impacts to Archaeological Resources
- Impacts to Cultural Heritage Resources
- Impacts to Cultural Heritage Landscapes

## **Transportation / Engineering**

- Highway Geometrics / Municipal Road Geometrics
- Future Traffic Operations
- Active Transportation (pedestrians / cycling)
- Complexity and Difficulty of Construction
- Geotechnical Suitability
- Impacts to Utilities
- Impacts to Existing Highway 400 Structure
- Complexity of Future Rehabilitation Staging
- Ease of Future Widening of Highway 400
- Future culvert / structure crossings of Innisfil Creek / watercourses

## **Cost**

- Cost including Construction, Utility Relocation, and Property Requirements

# Weighting of Evaluation Criteria

The evaluation of the alternatives considered the proposed weighting of the evaluation criteria as shown below.

Factor / Indicator	Level of Importance	Rationale for Significance	Key Factors
Natural Environment	Medium	<ul style="list-style-type: none"> <li>Minimizing potential impacts to undisturbed natural areas and Innisfil Creek are considered important.</li> <li>However, these impacts must be weighed against benefits of a new interchange that accommodates future traffic operations and meets current design standards.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to Species at Risk</li> <li>Undisturbed natural features</li> <li>Innisfil Creek</li> </ul>
Socio-Economic Environment	Medium	<ul style="list-style-type: none"> <li>Desirable to minimize property takings, agricultural impacts, and noise / air quality impacts.</li> <li>These impacts must be weighed against the benefits of a new interchange that accommodates future traffic operations and meets current design standards.</li> </ul>	<ul style="list-style-type: none"> <li>Minimizing property impacts</li> </ul>
Cultural Environment	Low	<ul style="list-style-type: none"> <li>Potential to mitigate impacts on cultural heritage features and archeological resources during construction.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to undisturbed areas that have archaeological potential</li> <li>Impacts to cultural heritage features are not anticipated</li> </ul>
Transportation / Engineering	High	<ul style="list-style-type: none"> <li>Overall purpose of the new interchange is to develop a proposed plan that accommodates future traffic operations and meets current design standards.</li> </ul>	<ul style="list-style-type: none"> <li>Meeting current design standards</li> <li>Accommodating future traffic operations</li> </ul>
Cost	Medium	<ul style="list-style-type: none"> <li>A cost-effective plan is required.</li> <li>improvements to future traffic operations and meeting current design standards are considered a higher significance.</li> </ul>	<ul style="list-style-type: none"> <li>Construction cost</li> </ul>

# Evaluation of Interchange Alternatives

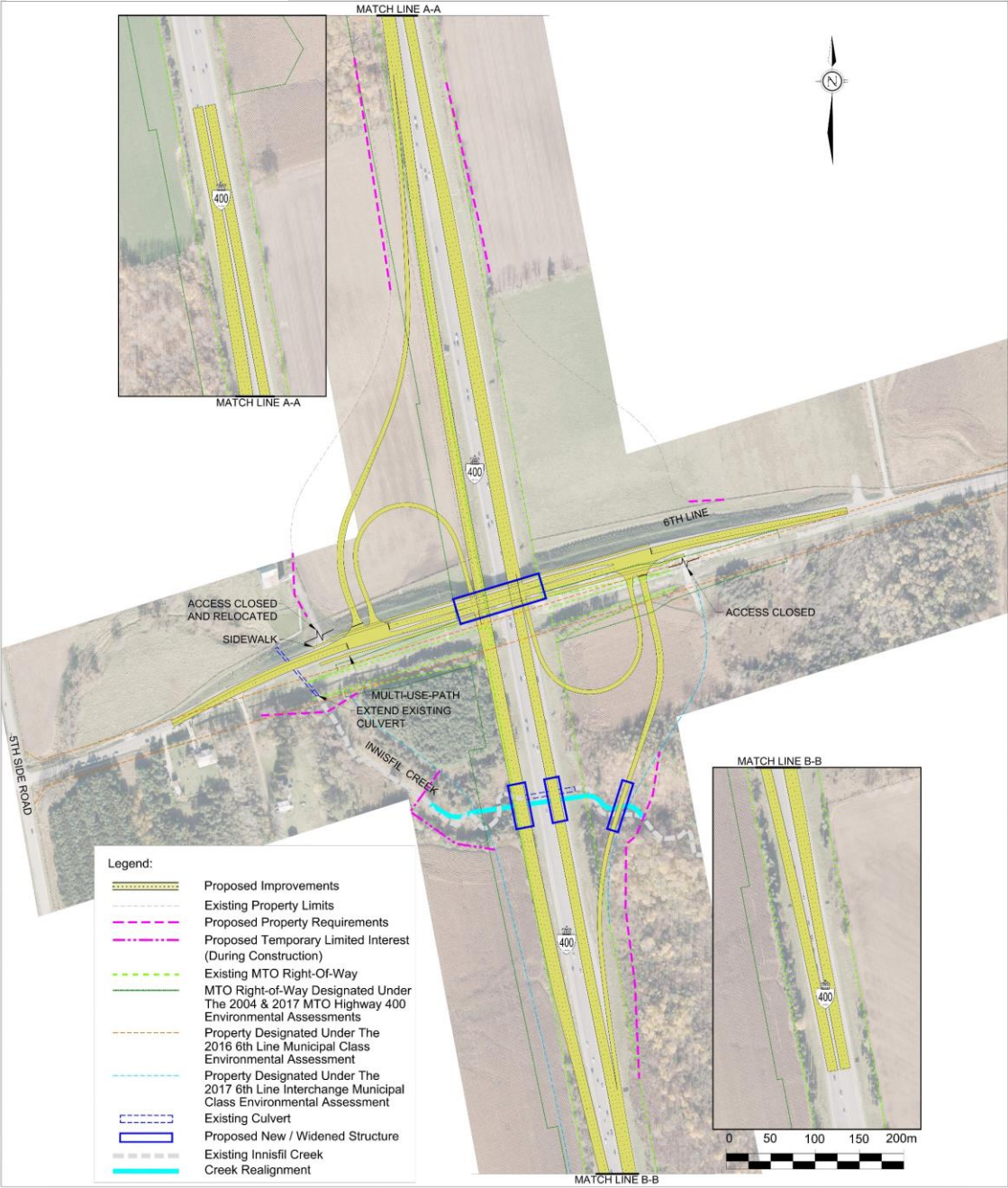
Key Factor	Level of Importance	2017 EA-Approved Plan	Alternative A Parclo with Roundabouts	Alternative B Traditional Parclo A4	Summary
Natural Environment	High	●	●	●	<p><b>Alternative B is preferred</b> for the following reasons:</p> <ul style="list-style-type: none"> <li>• Less impact to natural environment and Species at Risk habitat</li> <li>• Less property impacts beyond EA-approved limits</li> <li>• Less impact to cultural heritage resources</li> <li>• West-to-south ramp has more favourable alignment in terms of constructability and bridge location compared to Alternative A</li> <li>• Provides better capacity to accommodate future traffic volume beyond 2041 planning horizon</li> <li>• No significant difference between alternatives for the interim construction cost</li> </ul>
Socio-Economic Environment	High	●	●	●	
Cultural Environment	Low	●	●	●	
Engineering / Technical	High	●	●	●	
Costs	Medium	No significant difference			
<b>Overall</b>		✘ Not Recommended	✘ Not Recommended	✓ Recommended	

(most preferred) ● ● ● (least preferred)

# Preferred Plan – Interim

Note:  
 The next step in the study is to complete the Preliminary Design of the Preferred Alternative. During Preliminary Design, the Preferred Alternative and property requirements will be further refined.

A high-resolution of this drawing is available on the project website.

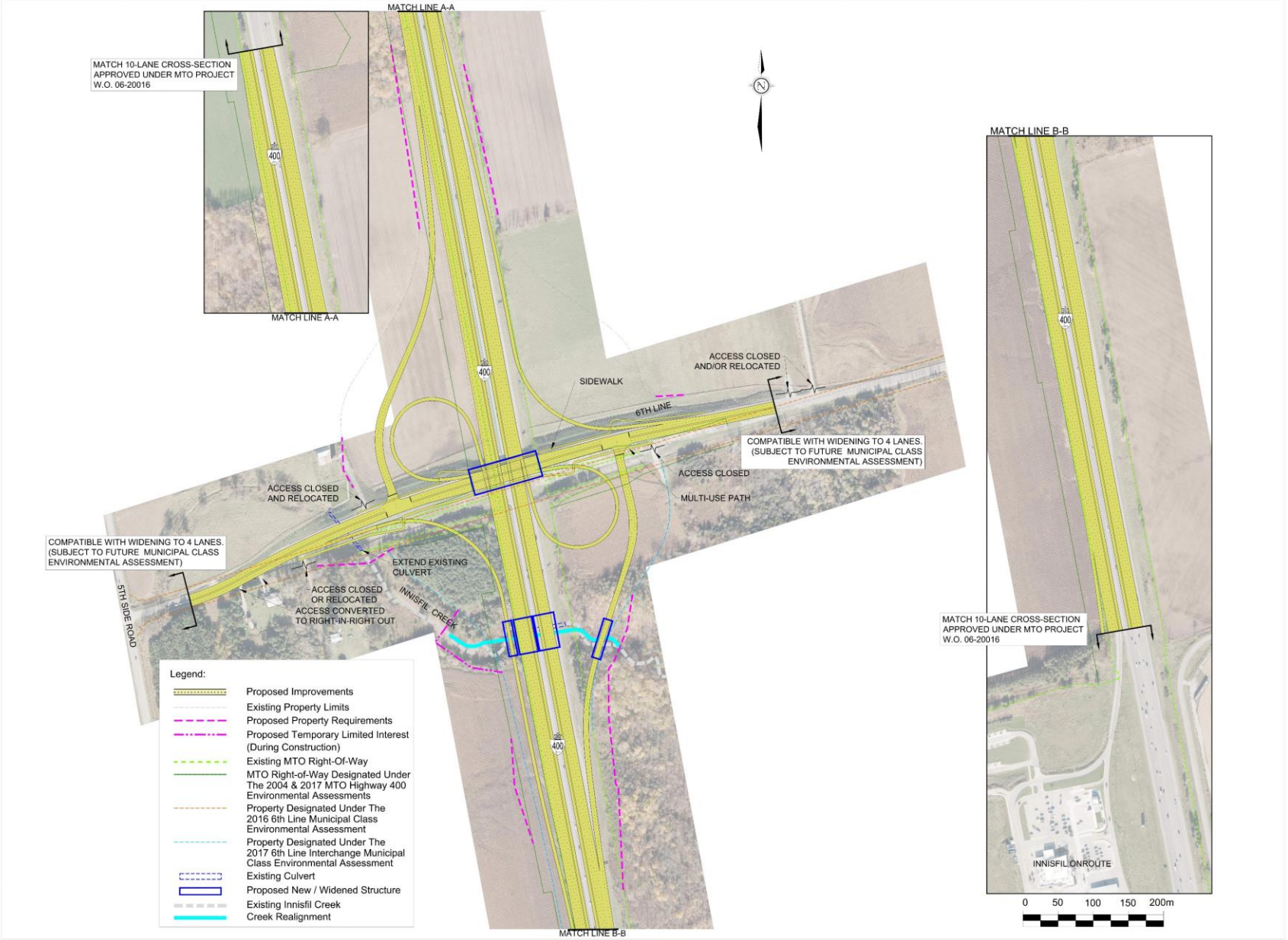


# Preferred Plan – Ultimate

Ultimate widening and ramp improvements will be constructed in the future to accommodate traffic needs

Note:  
The next step in the study is to complete the Preliminary Design of the Preferred Alternative. During Preliminary Design, the Preferred Alternative and property requirements will be further refined.

A high-resolution of this drawing is available on the project website.



# Interim Preferred Plan – Visualization



Note:  
The next step in the study is to complete the Preliminary Design of the Preferred Alternative. During Preliminary Design, the Preferred Alternative will be further refined.

Looking Northwest

# Potential Impacts from the Proposed Changes to EA Approved Plan

Factor	Potential Impacts from Proposed Changes to EA Approved Plan
Natural Environment	<ul style="list-style-type: none"> <li>• Reduced extent of impacts to natural features and vegetation removal.</li> <li>• Improves wildlife passage across Highway 400 and the connectivity of habitats.</li> <li>• Provides better opportunity for natural channel conditions for Innisfil Creek.</li> <li>• Allows for better fish passage by removing the existing culvert.</li> <li>• Reduces impacts to Species at Risk (SAR) habitat.</li> <li>• Permitting/approvals would likely be required for impacts to SAR bird species and SAR bat habitat.</li> <li>• Water quality impacts can be mitigated through stormwater management controls.</li> </ul>
Socio-Economic Environment	<ul style="list-style-type: none"> <li>• Reduces property impacts by tightening the interchange ramps.</li> <li>• Slightly increases impacts on the south side of 6<sup>th</sup> Line for the bridge crossings of Innisfil Creek.</li> <li>• Reduces impacts to future development lands in the northeast quadrant.</li> <li>• No significant changes to future noise and air quality levels.</li> </ul>
Cultural Environment	<ul style="list-style-type: none"> <li>• No archaeological resources discovered in the northeast, southeast, and southwest quadrants.</li> <li>• Further archaeological assessment is required in northwest quadrant.</li> <li>• Minimizes impacts to cultural heritage features.</li> </ul>
Engineering	<ul style="list-style-type: none"> <li>• Meets current MTO design standards for Highway 400 and 6<sup>th</sup> Line.</li> <li>• Improves future traffic operations beyond 2041.</li> <li>• Maintains future Active Transportation provisions.</li> <li>• Requires additional grading in the Innisfil Creek valley to remove and replace the existing culvert with bridge crossings.</li> <li>• Has higher potential to impact existing utilities. Relocation of utilities will be coordinated with utilities companies in Detail Design.</li> </ul>

# Next Steps in the EA Review

After this Study Update, the Project Team will:

Activity	Anticipated Timeline
<ul style="list-style-type: none"><li>Review the comments received from the Study Update and respond to any questions</li></ul>	Summer 2024
<ul style="list-style-type: none"><li>Confirm the proposed changes to the EA-approved plan</li></ul>	Summer 2024
<ul style="list-style-type: none"><li>Develop the Preliminary Design Plan</li></ul>	Fall 2024
<ul style="list-style-type: none"><li>Prepare Addendum to the 2017 Environmental Study Report and submit for a 30-day review period.</li></ul>	Fall 2024
<ul style="list-style-type: none"><li>Proceed to Detail Design</li></ul>	Subject to obtaining EA Approval and Funding.

# Contact Information

You are encouraged to contact the Project Team members noted below if you have any questions or comments on the study and information presented on the Study Update.

**Elena Nicol, P.Eng.**

Project Engineer  
Ministry of Transportation, Ontario  
Project Delivery – York West/Simcoe  
159 Sir William Hearst Avenue  
Toronto, Ontario, M3M 0B7  
Tel: 437-226-0181  
Email:  
Project.Team@Highway400-6thLine.ca

**Carolina Cautillo, P.Eng.**

Capital Planning Engineering  
Associate  
Town of Innisfil  
2101 Innisfil Beach Road  
Innisfil, Ontario L9S 1A1  
Tel: 705-436-3740 ext. 3256  
Toll Free: 1-888-436-3710  
Email:  
Project.Team@Highway400-6thLine.ca

**Brent Gotts, P. Eng.**

Consultant Project Manager  
HDR  
5035 South Service Road, Suite 400  
Burlington, ON L7L 6M9  
Tel: 647.777.1660  
Email:  
Project.Team@Highway400-6thLine.ca

**Please provide comments to the Project Team  
by Friday, July 19, 2024.**

# Freedom of Information and Protection of Privacy

Information collected during the study will be used to assist the Ministry of Transportation and Town of Innisfil in meeting the requirements of the Ontario *Environmental Assessment Act*. This material will be maintained on file for use during the study and may be included in the study documentation.

Information collected will be used 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.

You are encouraged to contact the Project Team members on the previous slide if you have any questions or concerns regarding the above information.