Innisfil

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BT ENGINEERING BTE

Town of Innisfil - 6th Line Interchange Environmental Assessment (EA) Study

Welcome

Welcome to the first Public Open House (POH) meeting. Please sign in on the attendance sheet and obtain a comment sheet at the registration desk.

Should you have any questions regarding the presentation materials, background reports or any other aspect of the study, please speak to the Town or Consultant study team members in attendance.

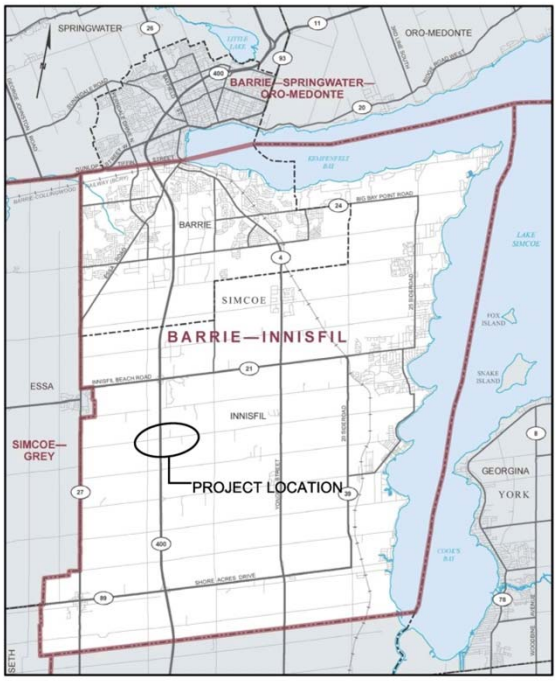
We encourage your input/feedback on the material being presented on the display boards. Please deposit completed comment sheets in the comment box or mail/ fax/ e-mail to the address at the bottom of the form by June 24, 2016.

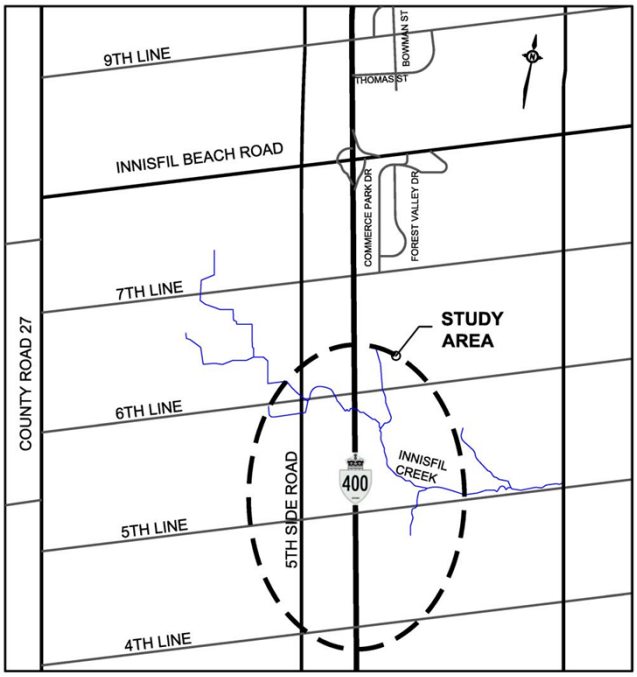
There is an opportunity at any time during the EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and *Freedom of Information and Privacy Act* and, with the exception of personal information, will become part of the public record.

Introduction

The Town of Innisfil is conducting an Environmental Assessment (EA) to plan for a new interchange on Highway 400. The study will assess options for a new interchange in the central area of Simcoe County. This new interchange will provide better access to proposed development areas (Innisfil Heights and Alcona).

This Study will complete all phases of the Municipal Class EA by establishing the need and justification for the project, considering all alternatives and proactively involving the public in defining a recommended plan for improvements. This Study is being completed as a Municipal Schedule 'C' undertaking, based on the Class definition of the project and the range of anticipated effects. See the following exhibit for a description of the EA process.





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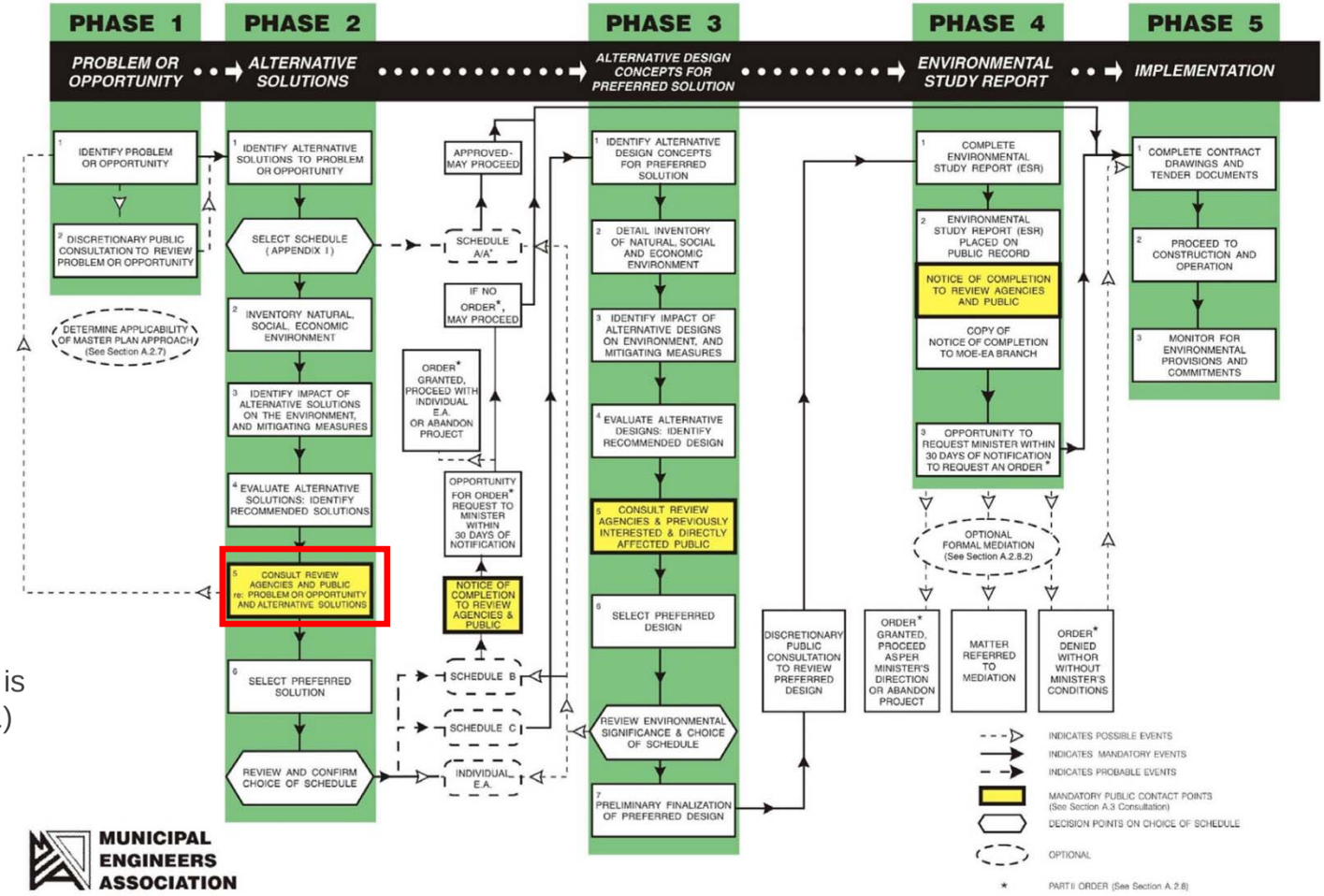
Municipal Class Environmental Assessment (EA) Process

This project is being undertaken as a Municipal Schedule C Class EA in accordance with the Municipal Class Environmental Assessment. A copy of this document is available at the Resource Table.

The data and reports produced for the study will be documented in an Environmental Study Report (ESR).

Initial Consultation Public Review of Study Design

Study process is here (POH #1)



Need and Justification for an Interchange

Current and expected increases in traffic in the County of Simcoe and Town of Innisfil necessitate improvements to the road network for a new interchange on Highway 400.

The Simcoe County Transportation Master Plan (TMP) (2014) identified Innisfil Beach Road will be above capacity by 2031, even with planned roadway improvements.

The Town of Innisfil's Official Plan identified the need for a future interchange on Highway 400. The Innisfil TMP (2013) has also confirmed the need for a new interchange on Highway 400 and recommended it be located at the 6th Line (subject of this EA Study) with improvements to the 6th Line corridor (defined in the 6th Line EA). The TMP identified that an interchange at 6th Line would also address the capacity constraint on Innisfil Beach Road. These background documents are available at the Resource Table.

Alternative Planning Solutions

The Regional Alternative Planning Solutions (defined as Planning Strategies in the Innisfil Transportation Master Plan (TMP)) represent candidate alternatives for meeting the needs of the problem statement of the Town.

The four alternatives include:

Alternative 1 – The “Do Nothing” Alternative

Alternative 2 – Business as Usual

Alternative 3 – Balanced Approach

Alternative 4 – Aggressive Approach

These alternatives are described in the Innisfil TMP which can be found on the resource table.

Alternatives 3 and 4 were carried forward for further evaluation.

The Alcona Growth Alternative Planning Solutions represent alternatives for meeting the growth in Alcona, including:

Alternative 1: “Do Nothing”

Alternative 2: Restrict Development

Alternative 3: Transportation Demand Management (TDM)

Alternative 4: Transportation System Management (TSM)

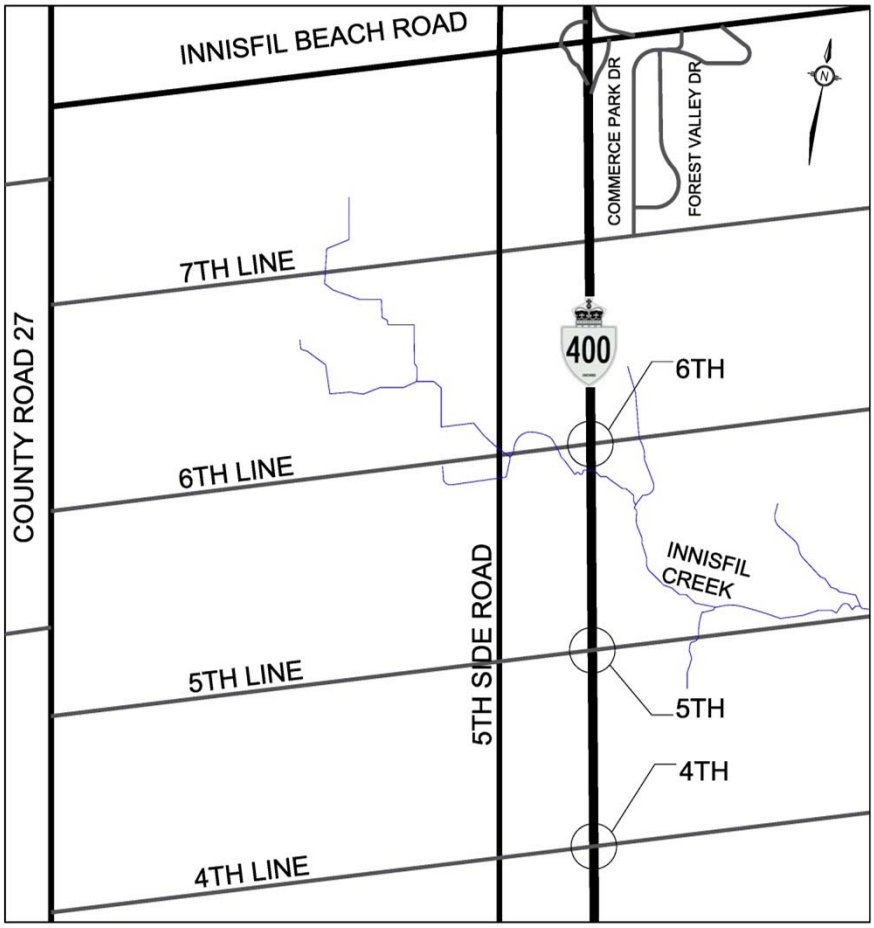
Alternative 5: New Infrastructure (Interchange on Highway 400)

Alternative 5 was carried forward for further evaluation (Preliminary Design Alternatives).

Candidate Interchange Locations

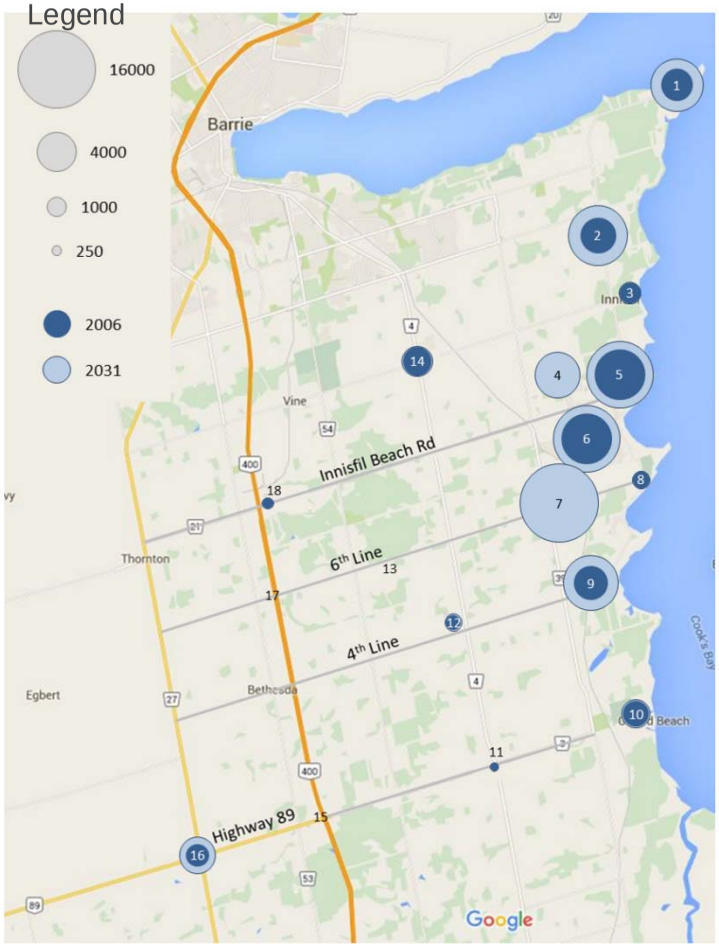
As part of the discretionary consultation illustrated in Phase 1 of the Class EA process exhibit, a Study Design was circulated to agencies and was available for public review. Comments received suggested candidate interchanges should be considered at the 4th Line, 5th Line and 6th Line as potential projects.

As a result of this input, the EA has been expanded to include a screening level analysis comparing these locations. The analysis is included on the resource table and presented on the following exhibits.

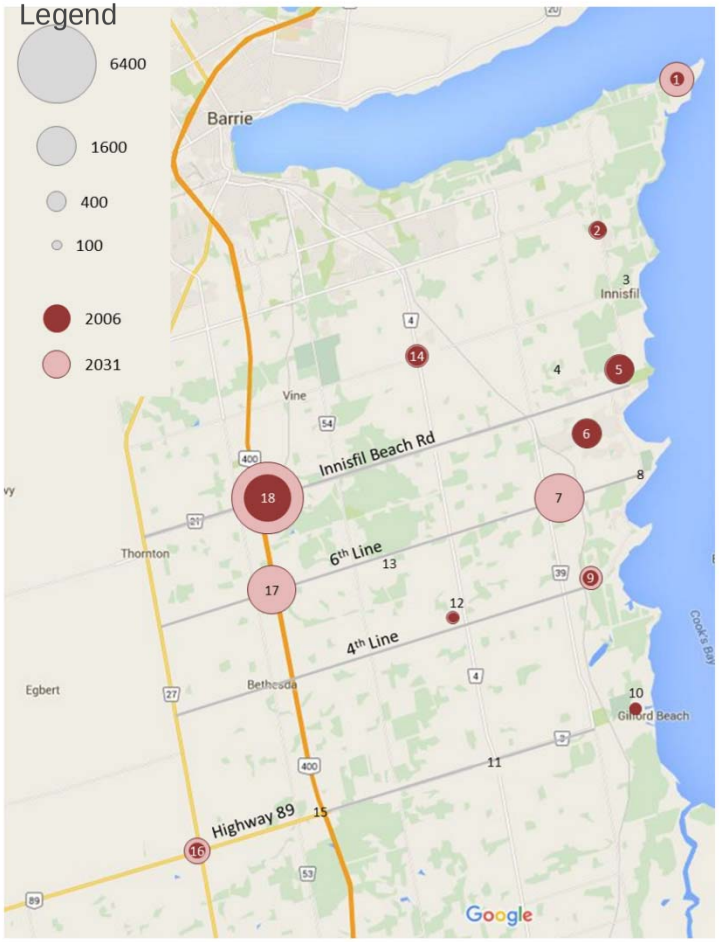


Existing and Future Development Areas

Population



Employment



Note: The size of the circle diameters reflect the size of the existing (dark circles) and future (light circles) population and employment areas.

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Assessment of Interchange Location Alternatives

In response to a comment received on the draft Study Design, the study area was expanded to revisit the interchange location recommended in the TMP and consider three alternative interchange locations: 4th Line, 5th Line and 6th Line. The technical analysis is documented at the Resource Table and summarized as follow:

Criteria	4th Line Interchange	5th Line Interchange	6th Line Interchange
Network Wide Benefit (Addresses Capacity Issue on Innisfil Beach Road)	×	×	✓
Supports Future Growth Areas	×	-	✓
Environmental Impacts	-	-	-
Property Impacts	-	-	-
Constructability and Cost	-	-	-
Proximity to Current Development	×	-	✓
Proximity to Projected Development	×	-	✓
Interchange Spacing	✓	✓	-
Proximity Issue with ONroute Travel Centre	×	×	-
Recommended to be carried forward	No	No	Yes

Legend:	Good / Best ✓	Fair / Equal -	Poor / Worst ×

The preliminary recommendation is to carry forward the 6th Line location for a more detailed assessment of preliminary design alternatives.

Environmental Inventories – Aquatic Environment

Environmental features and characteristics presenting constraints possibly affected by interchange alternatives

Innisfil Creek headwaters (southeast quadrant of 5 Sideroad/ 6th Line)

East tributary of Innisfil Creek (6th Line east of Highway 400)

Lands adjacent to Innisfil Creek north of 6th Line and west of Highway 400

South of 6th Line, a flowing channel extends through a small meadow

Innisfil Creek downstream from 6th Line

Innisfil Creek under Highway 400.

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Environmental Inventories – Terrestrial Natural Environment

Environmental features and characteristics presenting constraints possibly affected by interchange alternatives

Landscape north of 6th Line transformed from natural condition.

Regenerating and planted tree cover south of 6th Line.

Wetland forest habitat.

Vegetation along the east tributary of Innisfil Creek.

Woodland extending from a regenerating field into natural (largely wetland) forest.

Agricultural landscape north of 6th Line.

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Environmental Inventories – Cultural Heritage

Environmental features and characteristics presenting constraints possibly affected by interchange alternatives

6th Line Bridge as viewed from west

6th Line Bridge as viewed from side of Highway 400

Detail of 6th Line Bridge

Bridge description

- Constructed in 1949 when this section of Highway 400 was built.
- Example of a simple rigid frame concrete bridge.
- One of several similar bridges in immediate vicinity.

Current heritage status of 6th Line Bridge

- Not listed on Municipal Heritage Register
- Not designated under *Ontario Heritage Act*
- 1 property on municipal registry

Nearby heritage resources

- No listed or designated heritage resources located within study area.
- Former village of Killyleagh plaque located west of 5th Side Road.

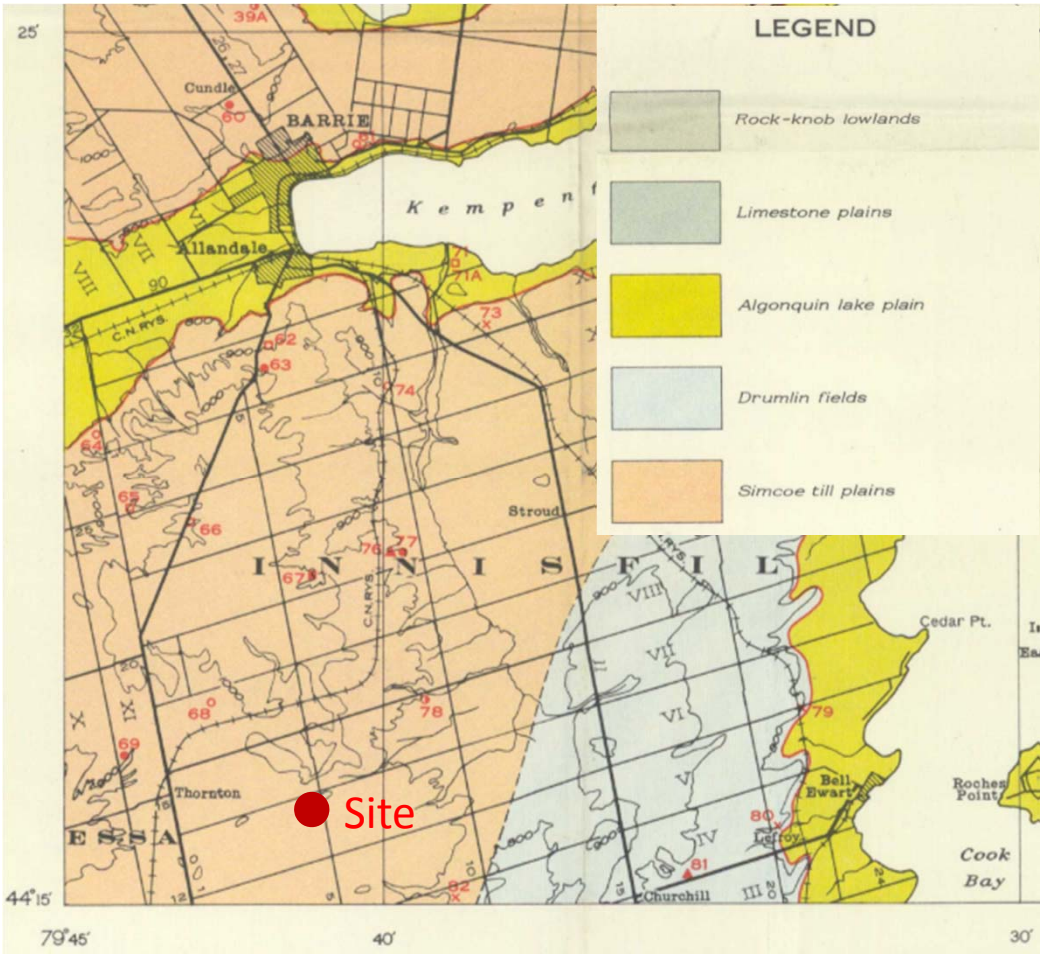
Next steps

- Complete preparation of cultural heritage evaluation for interchange.
- Integrate findings into ESR.

Example of surrounding agricultural landscape

Technical Studies – Geotechnical (Soils)

- The existing conditions in the vicinity of the crossing have been summarized in a Geotechnical Desktop Report and are available at the Resource Table.
- The site is located in the drumlinized till plains known as the Innisfil Uplands, part of the Physiographic Region called the Peterborough Drumlin Field.
- The existing conditions indicate equal portions of silt and sand with clay and gravel deposits consistent with till geology.
- Surficial geology is dominated by aged till plains shown below.



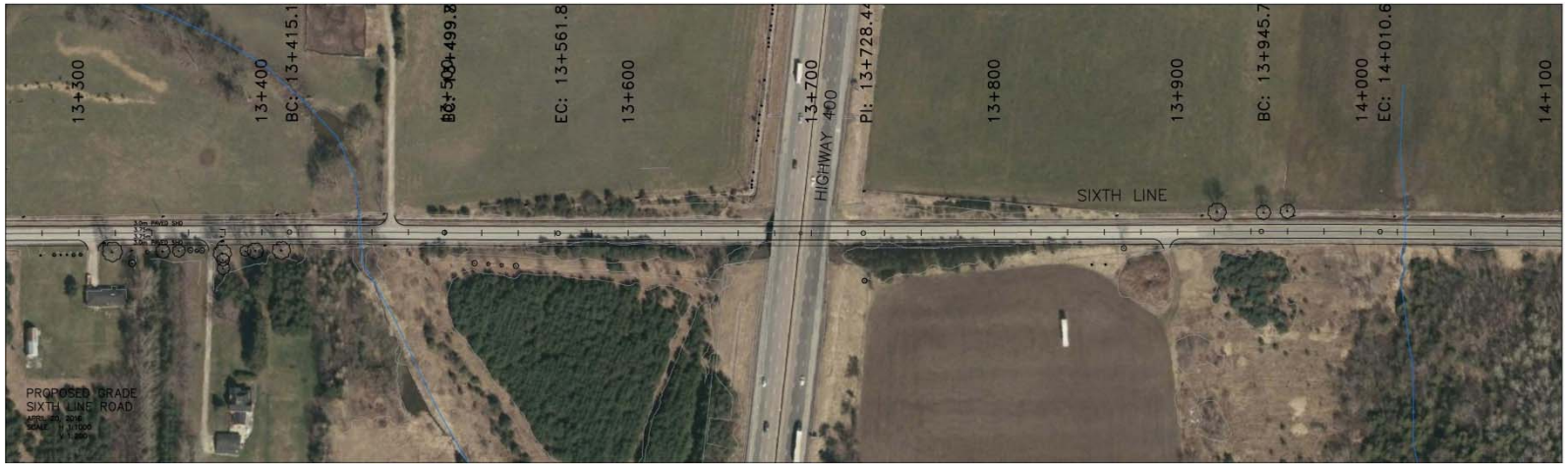
Vertical Alignment Alternatives

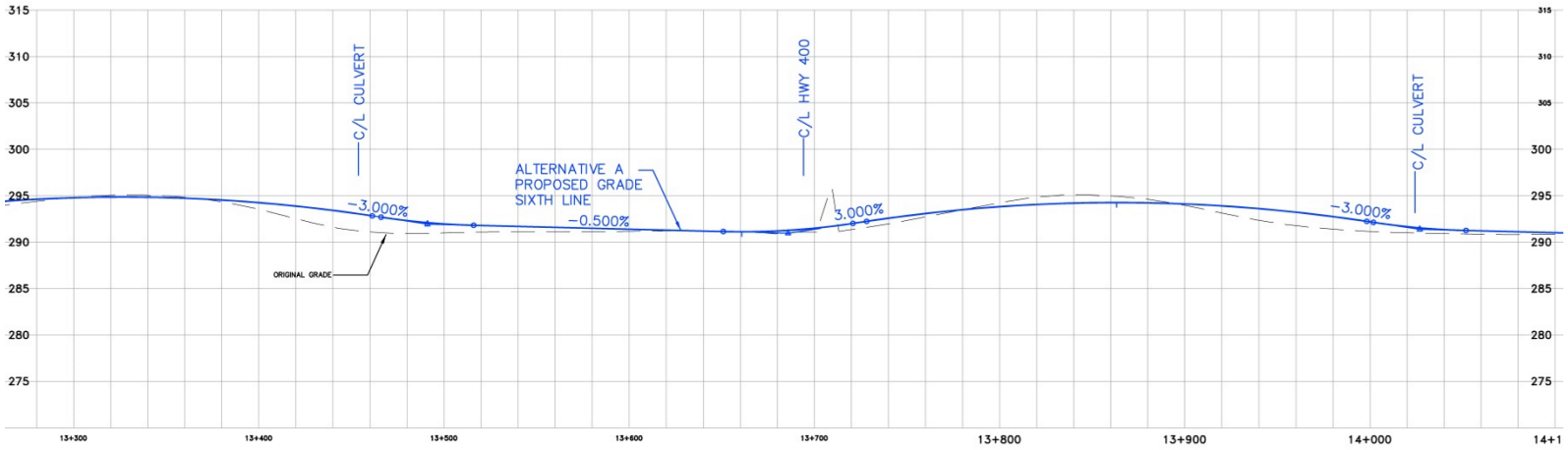
The EA is assessing both Highway 400 Overpass (existing condition with Highway 400 over 6th Line) and Highway 400 Underpass alternatives. The overpass alternative will require a minor grade raise of Highway 400 to accommodate a larger bridge span and the future longer range widening of 6th Line to a 4-lane arterial. The underpass alternative will maintain the existing Highway 400 profile (no change to existing profile).

For the underpass alternative, maintaining the existing alignment of the 6th Line will be considered as well as a potential alignment offset to the north. These alternatives are illustrated on the following exhibits and we welcome comments on the alternatives.

The following exhibits illustrate profiles (vertical elevation of the road and horizontal alignment) for each alternative under consideration.

Alternative A – Highway 400 Overpass





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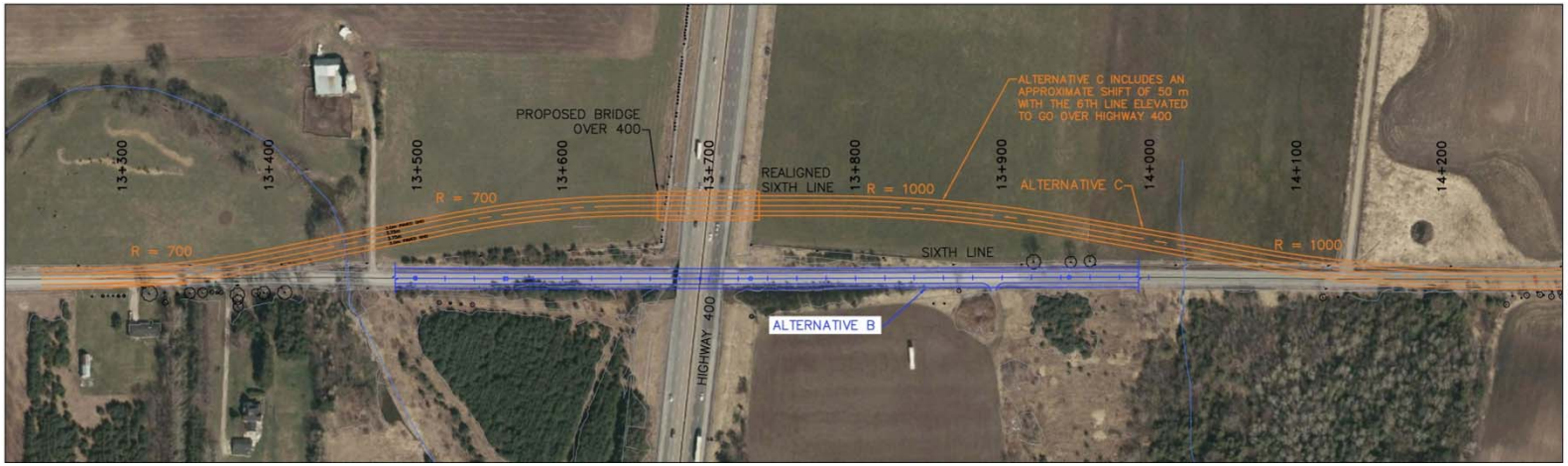
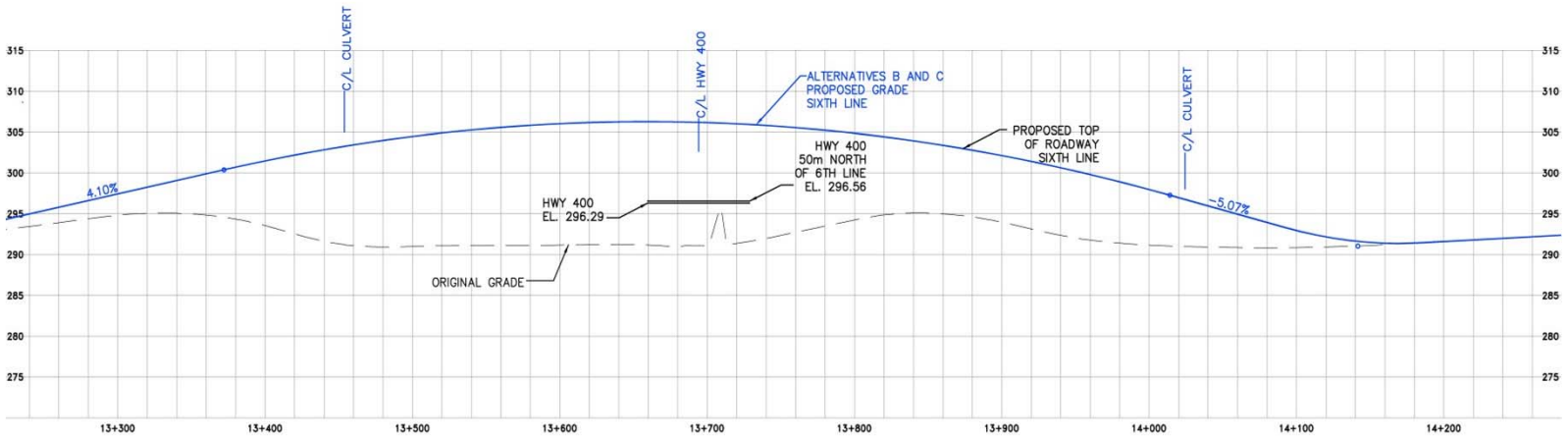
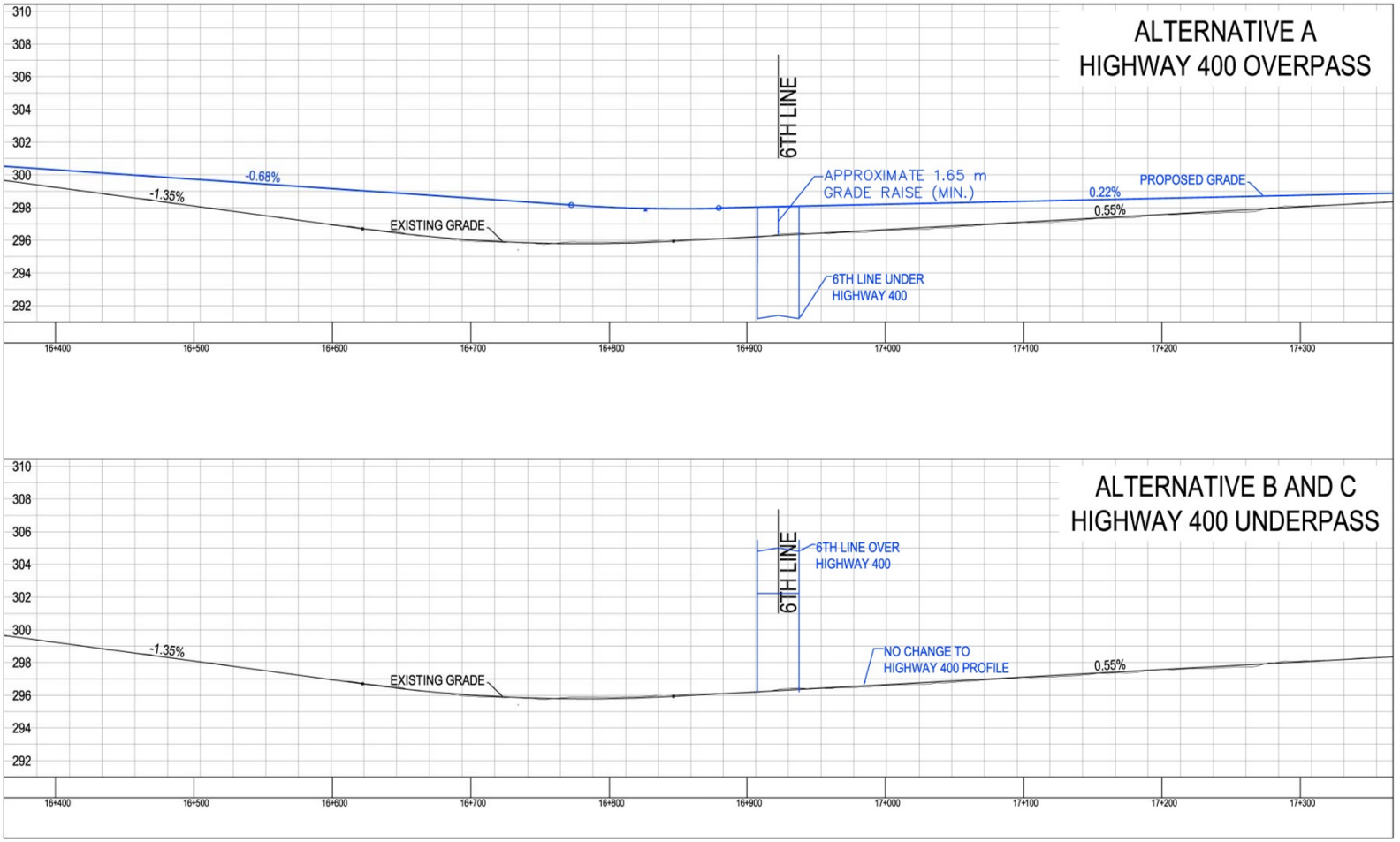
Alternatives B & C – Highway 400 Underpass





Highway 400 Profiles



Interchange Configuration Alternatives

SIXTH LINE AT HIGHWAY 400
INTERCHANGE ALTERNATIVES (WEST SIDE)

ALTERNATIVE W1
DIAMOND

ALTERNATIVE W2
DIAMOND WITH ROUNDABOUT

ALTERNATIVE W3
PARCLO A2
180m DIRECT TAPER ON SIXTH LINE
(100 km/h DESIGN SPEED)

ALTERNATIVE W4
PARCLO A4
180m DIRECT TAPER ON SIXTH LINE
(100 km/h DESIGN SPEED)

ALTERNATIVE W5
PARCLO A2
110m DIRECT TAPER ON SIXTH LINE
(80 km/h DESIGN SPEED)

ALTERNATIVE W6
PARCLO A4
110m DIRECT TAPER ON SIXTH LINE
(80 km/h DESIGN SPEED)

ALTERNATIVE W7
PARCLO A2
110m DIRECT TAPER ON SIXTH LINE BEYOND STRUCTURE
(80 km/h DESIGN SPEED)

ALTERNATIVE W8
PARCLO A4
110m DIRECT TAPER ON SIXTH LINE BEYOND STRUCTURE
(80 km/h DESIGN SPEED)

ALTERNATIVE W9
PARCLO B2

ALTERNATIVE W10
PARCLO B4

Note: These interchange alternatives can be combined with the 6th Line going under or over Highway 400.

LEGEND: EXISTING PROPERTY FABRIC
PRELIMINARY PROPERTY REQUIREMENTS

NOTE: WIDENING OF HIGHWAY 400 AND SIXTH LINE PART OF SEPARATE ENVIRONMENTAL ASSESSMENT STUDIES

Interchange Configuration Alternatives

SIXTH LINE AT HIGHWAY 400
INTERCHANGE ALTERNATIVES (EAST SIDE)

ALTERNATIVE E1
DIAMOND

ALTERNATIVE E2
DIAMOND WITH ROUNDABOUT

ALTERNATIVE E3
PARCLO A2
180m DIRECT TAPER ON SIXTH LINE
(100 km/h DESIGN SPEED)

ALTERNATIVE E4
PARCLO A4
180m DIRECT TAPER ON SIXTH LINE
(100 km/h DESIGN SPEED)

ALTERNATIVE E5
PARCLO A2
110m DIRECT TAPER ON SIXTH LINE
(80 km/h DESIGN SPEED)

ALTERNATIVE E6
PARCLO A4
110m DIRECT TAPER ON SIXTH LINE
(80 km/h DESIGN SPEED)

ALTERNATIVE E7
PARCLO A2
110m DIRECT TAPER ON SIXTH LINE BEYOND STRUCTURE
(80 km/h DESIGN SPEED)

ALTERNATIVE E8
PARCLO A4
110m DIRECT TAPER ON SIXTH LINE BEYOND STRUCTURE
(80 km/h DESIGN SPEED)

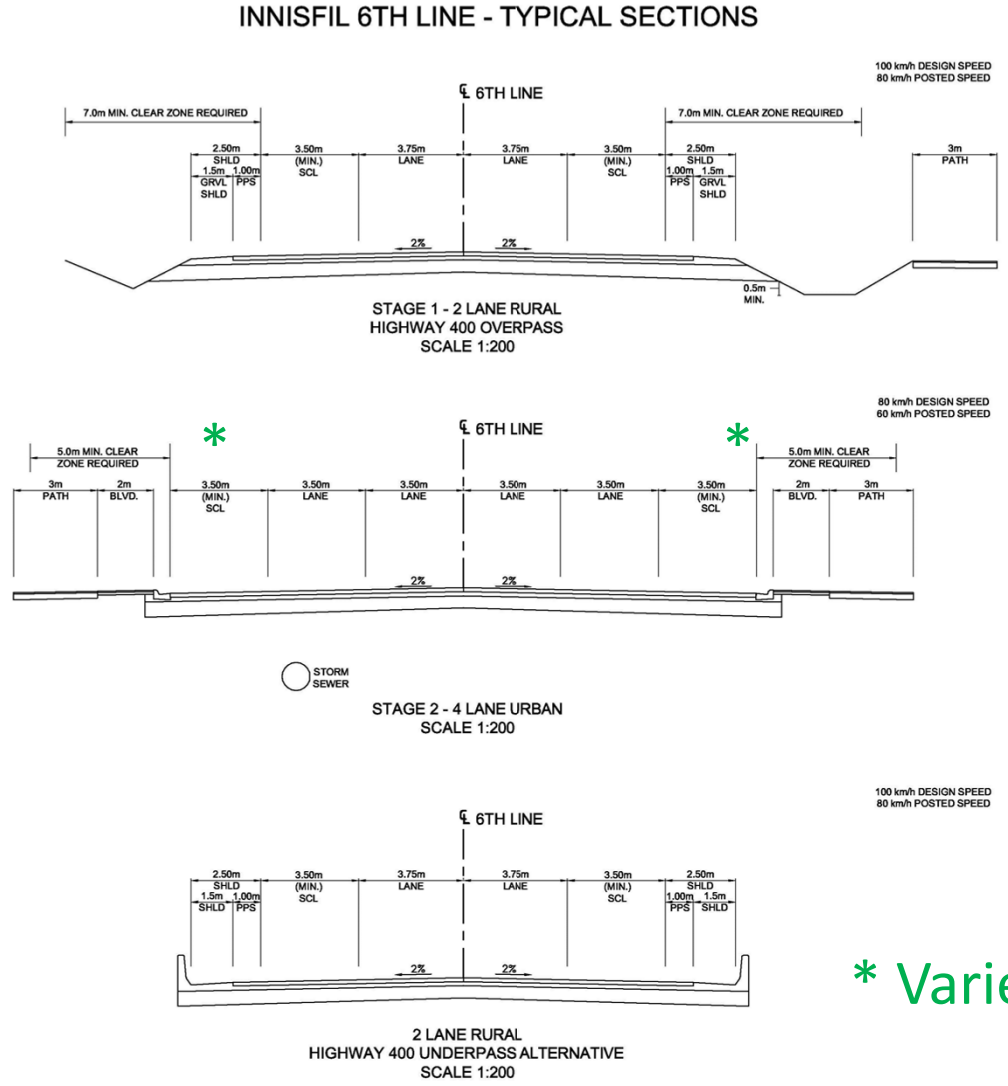
ALTERNATIVE E9
PARCLO B2

ALTERNATIVE E10
PARCLO B4

LEGEND: EXISTING PROPERTY FABRIC
PRELIMINARY PROPERTY REQUIREMENTS

NOTE: WIDENING OF HIGHWAY 400 AND SIXTH LINE PART OF SEPARATE ENVIRONMENTAL ASSESSMENT STUDIES

Typical Cross Section



* Varies

Bridge Overpass and Underpass Examples

Highway 400 and Line 11

407 and 400 Southbound

407 and 400 Northbound

Mapleview Drive and 400 in Barrie

407 ETR and Brant Street

Evaluation of Alternatives

The evaluation approach to compare preliminary design alternatives, described as the Multi Attribute Trade-off System (MATS), focuses on the differences between the alternatives and provides a traceable decision-making process. The method uses numerical scores to measure the impact of the alternatives, and allows sensitivity tests to be performed. The evaluation methodology report is available at the resource table.

The initial task in the evaluation is to develop evaluation criteria from which alternatives will be assessed. This process includes the identification of “global” groups of factors followed by the selection of a number of “local” sub-factors under the global groups.

A “preliminary” list of global factors and their corresponding sub-factors proposed for the evaluation of alternatives is shown on the following exhibit. The public is asked to comment on issues that should be considered for the evaluation of alternatives.

For this study a sensitivity test will be undertaken following the evaluation by redistributing the factor weights to show any trade-offs between alternatives.

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Preliminary Evaluation Criteria – Long List

The following long list of candidate evaluation criteria (factor groups and sub-factors) is being considered for the assessment of the alternatives:

Transportation
Traffic Operations – Delays
Highway Safety – Collision Potential
Interchange Design Consistency
Collision Potential – Queue on Highway
Highway Safety – Design Consistency
Arterial Road Safety – Design Consistency
Municipal Traffic Operations (Delays)
Ramp Safety
Travel Time
Fuel Consumption
Road User Costs
Movement of Goods
Pedestrian Safety – Crossing High Speed Ramp
Pedestrian Safety – Crossing Ramp Terminal
Bicycle Safety
Ability to Accommodate Emergency Vehicles
Safety of Left Turn Access to Residential Driveways
Movement of Farm Equipment
Drainage

Social and Cultural Environment
Historic Archaeological potential
Prehistoric archaeological potential areas impacted
Built heritage sites impacts
Cultural landscape features
Noise impacts
Vibration impacts
Community Cohesion
Green Spaces Impacted
Excess Materials Management
Water wells impacted
Lighting and Visual impacts
Economic Environment
Improved access to local businesses

Land Use and Property
Property required (Residential)
Property required (Industrial)
Property required (Commercial)
Property required (Institutional)
Number of potentially contaminated sites

Cost
Capital Cost
Future Life Cycle Cost
Utility Relocation

Natural Environment	
Air Quality	Natural habitat impacted
Endangered species (SAR)	Specimen trees removed
Cold water fish habitat impacted	Groundwater
Cool water fish habitat impacted	Climate Change
Warm water fish habitat affected	Unclassified Wetlands
Water quality – stormwater runoff	Woodlands and other Vegetated Areas
Migratory Bird Nesting Impact/Loss of Existing vegetated areas	Wildlife habitat, including, reptiles, mammals and insects, amphibians and flora
Regionally significant natural areas and habitat	Loss of Floodplain Storage ANSI's
Contamination	Complex Provincially Significant Wetland
Snow Drift	

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Schedule

Following this meeting we will:

- Review All Comments
- Complete Additional Seasonal Inventories
- Evaluate Alternatives
- Public Open House No. 2
- Review all comments
- Finalize the Recommended Plans
- Prepare the ESR
- Place the Study Completion Notice in the newspaper
- 30-day public review period (Fall 2016 / Winter 2017)
- Environmental Clearance

How Can You Remain Involved in the Study?

- Request that your name/e-mail be added to the mailing list
- Provide a completed comment sheet
- Contact the Town or consultant representatives at any time

Any of our representatives that are present can assist you with the above activities.

Thank you for your participation at tonight's meeting. Your input into this study is valuable and appreciated. Please provide your completed comment form on or before **June 24, 2016**. All information is collected and used in accordance with the *Freedom of Information and Privacy Act*.

Resource Table

Study Design

Aquatic Assessment

Bridge Hydrology and Drainage Report

Cultural Heritage Memo

Municipal Class EA

Town of Innisfil Official Plan

Town of Innisfil Transportation Master Plan

Assessment of Interchange Locations